DRAFT

Environmental Impact Report for the Granite Esparto Mining and Reclamation Project

Long-Term Mining Permit Application

Zone File Number: 2007-071

December 2009

SCH Number: 2009022036

Prepared by

ENTRIX
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Prepared for

COUNTY OF YOLO

YOLO COUNTY
PARKS AND RESOURCES DEPARTMENT

NOTICE OF AVAILABILITY AND PUBLIC HEARING for the DRAFT PROGRAM ENVIRONMENTAL IMPACT REPORT on the GRANITE ESPARTO MINING AND RECLAMATION PROJECT

DATE: December 11, 2009

TO: Interested Agencies and Individuals

FROM: Yolo County Parks and Resources Department

The Draft Program Environmental Impact Report (DEIR) (SCH #2009022036) for the Granite Esparto Mining and Reclamation Project is now available for review. Public comment on this document is invited for a 46-day period extending from December 14, 2009 through January 28, 2010. More information is provided herein.

The property is located on 390 acres in central Yolo County, adjoining County Road 87, approximately one mile north of the town of Esparto. The project site is comprised of two adjacent parcels, APN 048-220-022 (286.4 acres) on the north and APN 048-220-015 (103.6 acres) on the south. The site encompasses the active channel of Cache Creek and a portion of the relatively flat terrace north of the creek.

Aggregate mining and processing is proposed on 313 acres of the 390-acre total. The applicant, Granite Construction Company, proposes the mining of about 30 million tons (26.1 million tons sold maximum) of aggregate over a 30-year period at a rate of about one million tons per year (870,000 tons sold maximum).

The project requires the following approvals from the County: Rezoning of the property to change the Sand and Gravel Reserve (SGR) combining zone to the Sand and Gravel (SG) combining zone, approval of an Off-Channel Mining Permit, approval of a Reclamation Plan, approval of 20 percent exceedance under Section 10.4-405 of the County Code, relinquishment of existing mining entitlements on the Woodland “Reiff” Site (APN 025-300-005, 025-300-032, and 025-350-009), authorization to execute a Development Agreement, approval of a Demolition Permit, approval of a Streambank Stabilization Plan to allow mining within setbacks established under Section 10-4.428(d) of the County Code, and approval of a Flood Hazard Development Permit (FHDP).

The County and its consultant, ENTRIx, have prepared a Draft Environmental Impact Report (DEIR) pursuant to the California Environmental Quality Act (CEQA). A Final EIR (Response to Comments) will be prepared following public review and comment. The County will consider this information when deliberating the project. Following certification of the Final EIR, the County may take action to adopt the proposed project.

The DEIR analyzes impacts in the areas of Land Use and Planning, Aesthetics, Agriculture, Air Quality, Biological Resources, Climate Change, Cultural Resources, Geology and Soils, Hazards, Hydrology and Water Quality, Mineral resources, Traffic and Circulation, Cumulative Effects, and Growth Inducing Effects. Significant impacts, some of which are characterized as

unavoidable, are identified in the following areas: removal of 287 acres of Prime or Unique Farmland from production for up to 30 years, permanently converting 213 acres to nonagricultural use; violating an air quality standard or contribute substantially to an existing or projected air quality violation (due to fugitive dust emissions); 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 (PM_{10}); adversely affect sensitive wildlife species (Swainson's hawk); potentially result in significant adverse physical impacts as a result of increases in greenhouse gas emissions; and potentially conflict with an applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases.

The DEIR is now available for public review at the public counter of the Parks and Resources Department at 120 West Main Street, Suite C, Woodland, California 95695. The document is also available online at: http://www.yolocounty.org/Index.aspx?page=1624.

You may submit comments on the DEIR during the 46-day public review period which begins December 14, 2009 and ends January 28, 2010 at 4:00pm.

All comments on the DEIR must be received by the Department by 4:00pm on the last day in order to be considered. Pursuant to Section 15088a of the CEQA Guidelines, late comments will be considered only at the County's discretion. Comments must be directed to:

Kent Reeves, Principal Natural Resources Planner
Yolo County Parks and Resources Department
120 West Main Street, Suite C
Woodland, CA 95695
kent.reeves@yolocounty.org
(530) 406-4888

A public meeting in front of the Esparto Community Advisory Council will be held Tuesday January 19, 2010 at 7:00 pm in the Esparto Regional Library (community meeting room) at 17065 Yolo Avenue in Esparto, CA 95695.

A public hearing in front of the Planning Commission will be held Thursday January 28, 2010 at 8:30 am in the Board of Supervisors Chambers (Room 206) at 625 Court Street, Woodland, CA to accept oral comments on the DEIR.

There will be no transcription of oral comments at these meetings. Comments received will be summarized by staff for inclusion in the Final EIR. Those who wish to have their verbatim comments incorporated in the Final EIR must submit their comments in writing.

In compliance with the Americans with Disabilities Act, if you are a disabled person and you need a disability-related modification or accommodation to participate in these hearings, please contact the County Planning and Public Works Department at (530) 666-8041. Please make your request as early as possible, and at least one-full business day before the start of the meeting.

For more specific questions about the project please contact Heidi Tschudin, Contract Planner, at (916) 447-1809, htschudin@sbcglobal.net; or Kent Reeves, Principal Natural Resources Planner, Parks and Resources Department, (530) 406-4888, kent.reeves@yolocounty.org.

YOLO COUNTY PARKS AND RESOURCES DEPARTMENT

Environmental Impact Report for the Granite Esparto Mining and Reclamation Project

DRAFT

SCH# 2009022036
ZONE FILE# 2007-071

DECEMBER 2009

PREPARED BY:

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TABLE OF CONTENTS

Appendices

Tables

Figures

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CHAPTER 1.0
INTRODUCTION

1.1 NATURE AND BACKGROUND OF PROJECT

BACKGROUND

In October 2007, Granite Construction Company, Inc. (the Applicant) filed an application with the Yolo County Parks and Resources Department (YCPRD) for approval for commercial mining and processing sand and gravel resources from a site in central unincorporated Yolo County. Approval of the project is considered a discretionary action under the California Environmental Quality Act (CEQA). As such, the YCPRD is the lead agency overseeing the preparation of this Environmental Impact Report (EIR) for the application for the Granite Esparto Mining and Reclamation Project (the project). The Applicant is requesting approval of a new 30-year Off-Channel Mining Permit to excavate, process, and sell sand and gravel resources. The 390-acre project site is located approximately 1 mile north of the town of Esparto, California, and 27 miles west of Sacramento (Figure 1-1). The proposed project site is located adjacent to and east of the existing Granite Capay Mining site, a project originally approved in 1996 and revised in 2002.

NATURE OF THE PROJECT

The proposed project is located within the boundaries of the Cache Creek Area Plan (CCAP) adopted by the Board of Supervisors in 1996. The CCAP incorporates the Off-Channel Mining Plan (OCMP) and Cache Creek Resource Management Plan (CCRMP) (including the Cache Creek Improvement Program [CCIP]). The Off-Channel Surface Mining Ordinance (OCSMO), the Surface Mining Reclamation Ordinance (SMRO), and the In-Channel Maintenance Mining Ordinance (ICMMO) implement the CCAP. The requirements contained in the ordinances include mitigation measures developed as part of the EIRs for the OCMP and CCRMP. The project would be required to comply with the requirements contained in these adopted plans and ordinances and certified EIRs.

The Applicant proposes to mine and process approximately 1 million tons of sand and gravel (i.e., construction aggregate) annually (a maximum of 870,000 tons sold annually) from a 313±-acre mining area and to reclaim the mined lands to agriculture, lake and associated habitat, and open space uses. In addition, the Applicant is applying for approval of the 20 percent exceedance allowed under Section 10.4-405 of the County Code. This would allow up to 1.2 million tons in any given year. Over the requested 30-year life of the permit, this would result in the extraction of about 30 million tons of aggregate resources (26.1 million tons sold).

The mined aggregate would be processed at a new rock processing plant to be constructed within the southern portion of the proposed mining area. The mined areas would be reclaimed to three general uses: open lake and associated habitat, agriculture, and open space/dry pasture. The project also proposes implementation of a Streambank Stabilization Plan (SSP) along the north bank of Cache Creek and within the project site.

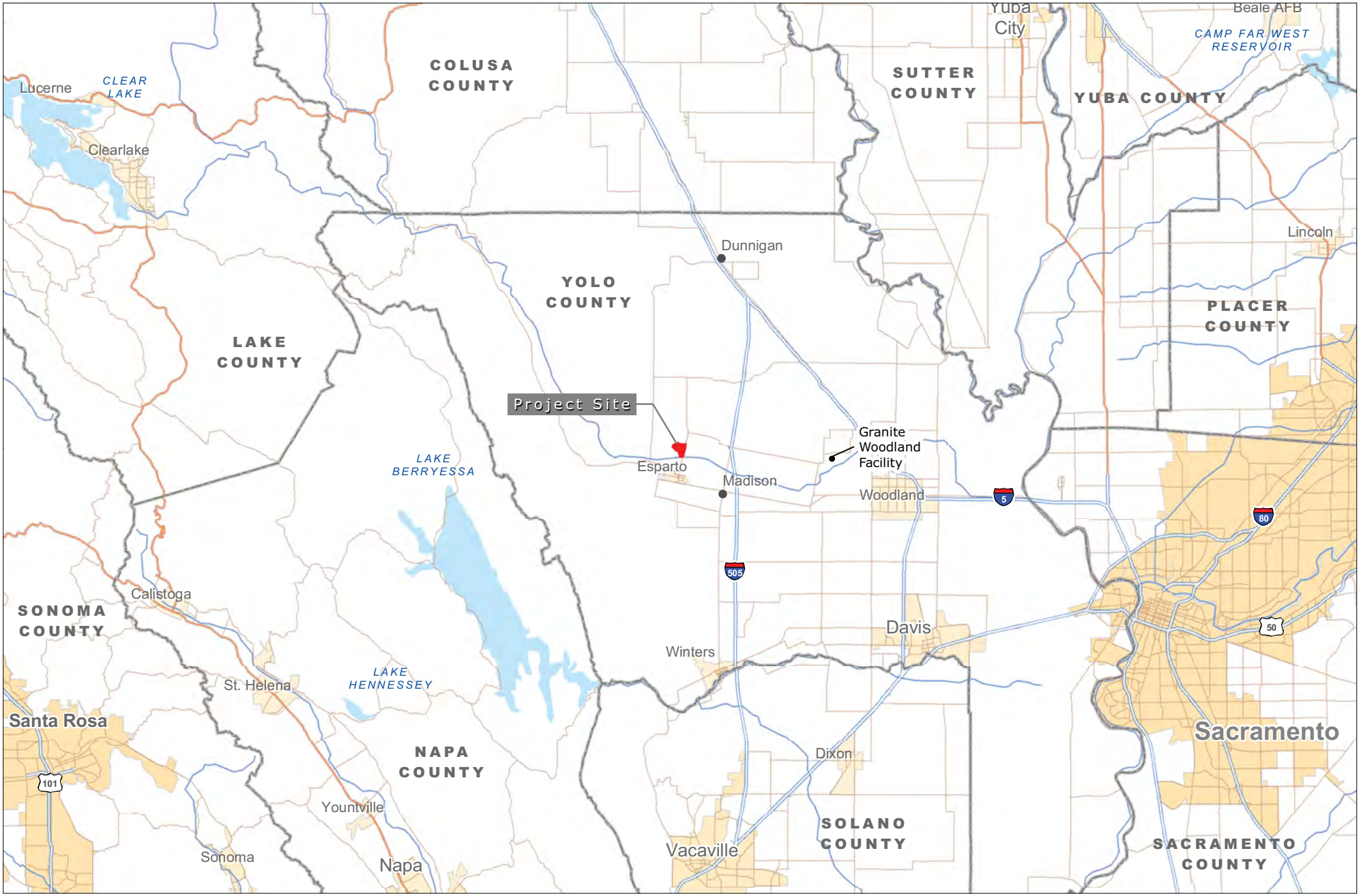

FIGURE 1-1

DRAFT EIR
Granite Esparto Mining and Reclamation Project
REGIONAL LOCATION MAP

ENTRIX | Environmental and Natural Resource Management Consultants

1.2 PURPOSE AND SCOPE OF EIR

Consistent with the project described above, the Applicant has requested the following approvals and authorizations:

a. Approval of a Rezoning to change the zoning designations from Agricultural Preserve with Sand and Gravel Reserve Combining Zone (A-P/SGR) to Agricultural Preserve with Sand and Gravel Combining Zone (A-P/SG) and from General Agriculture with Sand and Gravel Reserve Combining Zone (A-1/SGR) to Agricultural with Sand and Gravel Combining Zone (A-1/SG).

b. Approval of a 30-year Off-Channel Mining Permit for aggregate extraction and processing from a 313±-acre mining area on portions of two adjacent parcels (Assessor's Parcel Numbers [APN] 048-220-015 and 048-220-022). The total volume of aggregate mined would be about 30 million tons extracted (a maximum of 26.1 million tons sold).

c. Approval of a Reclamation Plan for the proposed mining and processing areas to a combination of reclaimed uses, including agriculture, open space/dry pasture, and open lake with associated habitat.

d. Authorization to exceed the annual maximum aggregate production cap by up to 20 percent as provided in Section 10.4-405 of the OCSMO. This has the effect of increasing the potential annual extraction in any given year from the requested base level of 1 million tons mined (870,000 tons sold) to 1,200,000 tons mined (1,044,000 tons sold).

e. Relinquishment of the existing mining entitlement (420,000 tons per year) for the Granite "Woodland (Reiff) site" (APNs: 025-300-005, 025-300-032, and 025-350-009).

f. Authorization to execute a Development Agreement.

g. Approval of a Demolition Permit to remove an existing single-family home and various outbuildings.

h. Approval of a Streambed Stabilization Plan to allow mining within 700 feet of and at least 200 feet away from the channel bank within the streamway influence boundary, as provided in Section 10-4.428(d) of the OCSMO.

i. Approval of a Flood Hazard Development Permit (FHDP) to implement proposed bank stabilization and the Test 3 boundary along approximately 2,300 linear feet of creek bank from County Road 87 (Esparto Bridge) eastward.

On December 24, 2007, this proposal was accepted as complete by the County. A public scoping meeting was held before the Esparto Community Advisory Committee (ECAC) on February 25, 2009.

PURPOSE OF THE PROJECT

Yolo County's approval of the project is a discretionary action under CEQA and requires the County to implement CEQA. Therefore, the purpose of this EIR is to comply with CEQA by identifying the potential significant impacts of the proposed project on the environment and indicating the manner in which those significant effects can be mitigated or avoided.

In addition to YCPRD, the following public entities and agencies (Table 1-1) may require review of the project or may have jurisdiction or permitting authority over the project:

Table 1-1 Required Permits for the Proposed Project

Agency	Permit/Approvals
U.S. Army Corps of Engineers	U.S. Army Corps of Engineers (USACE) Regional General Permit (Number 58) for the CCRMP/CCIP which authorizes instream activities under Section 404 of the Clean Water Act
California Department of Fish and Game	California Department of Fish and Game Stream or Lake Alteration Agreement (Number 315-97) for the CCRMP/CCIP which authorizes, under Section 1601/1603 of the Fish and Game Code, the projects contemplated in the CCIP
Regional Water Quality Control Board, Central Valley Region	Central Valley Regional Water Quality Control Board Section 401 Water Quality Certification for the CCRMP/CCIP which authorizes instream activities under Section 401 of the Clean Water Act
Central Valley Flood Protection Board	Encroachment Permit (DWR Form 3615)

1.3 ENVIRONMENTAL IMPACT REPORT REVIEW PROCESS

INITIAL STUDY AND NOTICE OF PREPARATION

Pursuant to CEQA, the YCPRD prepared an Initial Study to identify and preliminarily evaluate the potential environmental impacts that could be associated with construction, operation, and maintenance of the project. The Notice of Preparation (NOP) and Initial Study (Appendix A) for the project were released on February 13, 2009, beginning the 30-day public review period, which ended on March 14, 2009. A scoping meeting was held before the ECAC on February 25, 2009, in Esparto, California, to obtain public and agency comments on the Initial Study and the scope of the EIR. Meeting minutes, letters, and comments received are included in Appendix B.

CEQA Section 21093 promotes the concept of "tiering" the environmental review process whenever feasible by using pertinent information and analysis developed for EIRs prepared for a policy, plan, program, or ordinance. The environmental review of the project takes advantage of the opportunity to "tier" the impact analysis from previously completed environmental reviews performed by Yolo County for aggregate mining and bank stabilization projects within the lower Cache Creek Basin.

Information and analysis developed during preparation of the Yolo County CCAP and EIRs prepared for the OCMP (Yolo County 1996a) and the CCRMP (Yolo County 2002a) were used for background information and as the basis for some of the analysis. Additionally, information developed for the Yolo County 2030 General Plan Update has been reviewed and incorporated in the analysis. These sources of information, as well as other information from various sources listed in Chapter 7.0 (Report Preparation), are incorporated by reference in this EIR (CEQA State Guidelines Section 15150).

EIR REVIEW AND PREPARATION OF FINAL EIR

This EIR was publicly circulated on the date listed in the Notice of Availability, for a minimum 45-day period of review and comment by the public and other interested parties, agencies, and organizations. A Planning Commission hearing on the Draft EIR will be held at the Board of Supervisors Chambers at 625 Court Street, Woodland, CA 95695, for the purpose of obtaining public comments on this EIR. The public review period for the Draft EIR concludes on the date listed in the Notice of Availability. All comments or questions about the EIR should be addressed to:

Yolo County Parks and Resources Department
Attention: Kent Reeves, Principal Natural Resources Planner
120 West Main Street, Suite C
Woodland, CA 95695
kent.reeves@yolocounty.org

Following receipt of comments on the EIR, responses will be prepared and made available for public review a minimum of 10 days prior to consideration for final action. The Yolo County Planning Commission will make a recommendation to the Board of Supervisors regarding the certification of the EIR, as adequate, and action on the project application.

FINAL ACTION ON THE PROJECT

The Board of Supervisors will make the final decision regarding certification of the Final EIR. Upon review and consideration of the Final EIR, the Board of Supervisors will determine whether to approve or reject the proposed project.

Approval of the project, as proposed or revised, would be accompanied by written findings for each significant environmental impact identified in the Final EIR. Findings must be accompanied by a brief explanation of the rationale for each finding and will indicate that: 1) mitigation measures to reduce significant impacts to less-than-significant levels have been adopted, 2) mitigation measures to reduce significant impacts to less-than-significant levels are within the jurisdiction of another public agency and either have been or should be adopted by that public agency, or 3) specific effects are unavoidable and substantially unmitigable but are considered acceptable because overriding considerations indicate that the benefits of the project outweigh the adverse effects.

1.4 MITIGATION MONITORING

This EIR presents mitigation measures for significant environmental impacts associated with the proposed project. CEQA requires that any state or local agency that imposes mitigation measures on a project adopt a monitoring program to ensure compliance with those measures (Public Resources Code Section 21081.6). The Mitigation Monitoring Program will specify the party responsible for implementation and monitoring of each mitigation measure.

1.5 ORGANIZATION OF DOCUMENT

This EIR consists of seven chapters. A summary of each chapter is provided below:

- Chapter 1.0 provides an introduction and overview describing the intended use of the EIR and the review and certification process.
- Chapter 2.0 summarizes the EIR findings, identifying potential impacts and proposed mitigation measures.
- Chapter 3.0 provides a description of the proposed project, its location, a site history, the Applicant's objectives in proposing the project, and required approvals.
- Chapter 4.0 presents a full discussion of the environmental effects of the project. Each section (e.g., air quality, hydrology) summarizes the environmental setting (with reference, where appropriate, to the 1996 and 2002 EIRs), evaluates potential impacts resulting from implementation of the proposed project, and recommends feasible mitigation measures for the significant impacts.
- Chapter 5.0 provides CEQA-required discussions regarding cumulative effects and growth-inducing effects.
- Chapter 6.0 summarizes and discusses the three alternatives to the proposed project.
- Chapter 7.0 lists the authors of the EIR, references and persons consulted during EIR preparation.

1.6 SUMMARY OF INITIAL STUDY/NOTICE OF PREPARATION CONCLUSIONS: EFFECTS FOUND NOT TO BE SIGNIFICANT

As described above, an NOP and Initial Study (Appendix A) were prepared to identify environmental issues associated with the proposed project. Effects determined to be less than significant were as follows:

- effects on scenic vistas
- effects on scenic resources within a state scenic highway
- light and glare effects
- involve other changes that convert farmland to non-agricultural use
- creation of objectionable odors
- have a substantial adverse effect on sensitive plant species
- effects on any riparian habitat or other sensitive natural community
- interfere with migration corridors or nursery sites
- conflict with an adopted Habitat Conservation Plan or other such plans
- risk of loss, injury, or death from rupture of a known earthquake fault
- risk of loss, injury, or death from strong seismic ground shaking
- risk of loss, injury, or death from liquefaction

- be located on expansive soil
- have need of a septic tank or alternative wastewater disposal systems
- conflict with any applicable greenhouse gas plan
- cause upset or accident conditions involving hazardous materials
- expose schools to hazardous materials
- located at a listed hazardous materials site
- expose residents or workers to public airport safety hazards
- expose residents or workers to private airstrip hazards
- interfere with emergency response plans
- expose people or structures to wildfire risks
- alter the existing drainage pattern resulting in substantial erosion or siltation
- alter the existing drainage pattern resulting in flooding
- place housing in flood hazard zones
- expose people or structures to flooding
- inundation by seiche, tsunami or mudflow
- physically divide a community
- Conflict with a habitat or natural community conservation plan
- loss of a regional or state valued known mineral resource
- noise impacts, including temporary or periodic increases in ambient noise
- population and housing impacts
- public services impacts
- recreation impacts
- effects on air traffic patterns
- result in inadequate emergency access
- result in inadequate parking capacity
- effects on utilities and service systems

This EIR presents an analysis of impacts determined potentially significant in the areas of Aesthetics, Agricultural, Air Quality, Biological Resources, Climate Change, Cultural Resources, Geology and Soils, Hazards, Hydrology and Water Quality, Land Use, Mineral Resources, and Transportation and Circulation. Significant impacts, including Significant and Unavoidable impacts, identified for each resource area are summarized in Table 2-1.

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CHAPTER 2.0
SUMMARY OF IMPACTS AND MITIGATION MEASURES

2.1 PROJECT UNDER REVIEW

This Environmental Impact Report (EIR) has been prepared in accordance with the requirements of the California Environmental Quality Act (CEQA) for the Granite Esparto Mining and Reclamation Project (the project). The Granite Construction Company, Inc. (the Applicant) is requesting approval of a new 30-year Off-Channel Mining Permit to excavate, process, and sell sand and gravel resources. The 390-acre project site is located approximately 1 mile north of the town of Esparto, California, and 27 miles west of Sacramento. The proposed project site is located adjacent to and east of the existing Granite Capay Mining site, a project originally approved in 1996 and revised in 2002.

Land uses in the area are dominated by agriculture and aggregate mining activities. The Applicant proposes to mine and process approximately 1 million tons of sand and gravel (i.e., construction aggregate) annually (a maximum of 870,000 tons sold annually) from a 313±-acre mining area and to reclaim the mined lands to agriculture, lake and associated habitat, and open space uses. In addition, the Applicant is applying for approval of a 20 percent exceedance allowed under Section 10.4-405 of the County Code, which would allow for mining of up to 1.2 million tons in any given year. Over the requested 30-year life of the permit, the project would result in the extraction of about 30 million tons of aggregate resources (26.1 million tons sold).[1]

The mined aggregate would be processed at a proposed new rock processing plant in the southern portion of the proposed mining area. The project would also implement a Streambank Stabilization Plan (SSP) along the north bank of Cache Creek within the project site.

PROJECT OBJECTIVES

The Applicant has defined the overall objective of the project to be as follows:

- To secure permitting to mine and process one million tons of aggregate (870,000 tons sold) from the project site for a 30-year mining period as a supply for the demand for construction aggregate. Construction aggregate is necessary for a broad range of public and private-sector construction, infrastructure, and maintenance projects. The cost of aggregate is largely dependent on the transportation costs. Therefore, shorter transportation distances afforded by local sources of aggregate contribute to maintaining an adequate supply at a reasonable cost to the consumer while minimizing transport of material.

[1] It is assumed a certain percentage of the excavated material would be used for fill, or consist of material too fine or poor quality for use or sale.

The Applicant has stated that other objectives for the project are as follows:

- To maximize its ability to provide a secure source of high-quality construction aggregates to meet regional demand for these materials;
- To minimize the impacts of mining on adjacent property owners and the public;
- To maximize the benefits of land dedication to the County; and
- To provide for a diverse range of reclamation uses for mined lands.

2.2 AREAS OF CONTROVERSY

CEQA Guidelines Section 15123(b)(2) requires a discussion of areas of controversy known to the lead agency, including issues raised by agencies and the public. The following areas of controversy have been identified and are addressed in Chapter 4.0, Environmental Analysis, of the EIR.

- The Applicant proposes to transfer the 1996 assumption of 370,000 tons sold from the idle Granite "Woodland (Reiff) site" to the project site.
- The Applicant proposes to utilize the entire remaining unallocated Cache Creek Area Plan (CCAP) tonnage (500,000 tons sold) at the project site.
- The Applicant proposes a 30-year term for the requested permit, which would exceed the analysis year of the Off-Channel Mining Plan (OCMP) (2026) and would extend 13 years beyond the term of the other long-term permits issued under the CCAP.

2.3 ISSUES TO BE RESOLVED

CEQA Guidelines Section 15123(b)(3) require a discussion of issues to be resolved, including a choice of alternatives and whether or how to mitigate the significant effects of the proposed action. The primary issues to be resolved for this project include the issues raised above, whether or not to approve the project, consideration of identified mitigation measures, identification of appropriate conditions of operation, and identification and acceptance of "net gains".

2.4 SUMMARY OF REGULATORY/POLICY CONSISTENCY

CEQA Guidelines Section 15125(d) require an EIR to discuss any inconsistencies between the proposed action and applicable general plans and regional plans. There are a number of plans and regulations that apply to the proposed action, including the Yolo County General Plan and the CCAP. A discussion of the consistency of the proposed project with applicable regulations and plans is included in each of the resource sections of Chapter 4.0. In general, this project appears to be consistent with the applicable County plans and regulations.

The project does not fall within the Planning Area Boundary of either the Capay Valley Area General Plan or the town of Esparto General Plan, although the project area adjoins the north side of the Planning Area Boundary of the Esparto Plan. The project does fall within the Comment Area Boundary of the Esparto General Plan and, as such, informational meetings have been held before

the Esparto Community Advisory Committee (ECAC), and that body has been asked to make a recommendation on the project to the Planning Commission.

2.5 SUMMARY OF IMPACTS

This summary provides an overview of the analysis contained in Chapter 4.0, Environmental Analysis. This summary also includes discussions of: 1) effects found not to be significant, 2) mitigation measures to avoid or reduce identified significant impacts, 3) effects found to be significant and avoidable, 4) effects found to be significant and unavoidable, 5) cumulative impacts, and 6) growth-inducing impacts.

2.6 EFFECTS FOUND NOT TO BE SIGNIFICANT

Section 15128 of the CEQA Guidelines requires an EIR to contain a statement briefly indicating the reasons why various possibly significant effects of a project were determined not to be significant and were therefore not discussed in detail. The following issue summaries explain why various potential effects of the project were found not to be significant:

Noise

A site-specific analysis of noise generation and related impacts prepared for the proposed project by Brown-Buntin Associates, Inc. (BBA 2007) concluded that the average hourly noise levels associated with mining and processing activities would not result in an exceedance of the County ordinance thresholds for daytime (80 dBA) and nighttime (65 dBA) at the project boundaries. Additionally, the modeling indicated that the ordinance standards for noise levels at the closest off-site residences (60 dBA, 60 CNEL) would not be exceeded. The noise analysis also evaluated the potential noise levels generated by the increased truck traffic associated with project implementation. The maximum increase in traffic noise within 50 feet of the centerlines of the roads relative to existing conditions would be 1.9 dBA. Although the levels would increase, there are no sensitive receptors that would be expected to be subjected to noise increases in excess of the County-noise standards (greater than 50 dBA). Based on this information and analysis, the February 2009 Initial Study concluded that noise impacts would be less than significant.

Population and Housing

No regional or local population projections would be exceeded as a result of project implementation. The project would not induce substantial growth in the planning area either directly or indirectly, or extend major infrastructure. The hiring of additional personnel would be minimal and therefore no significant increase in housing demand would be expected. Project implementation would result in removal of one agricultural residence and associated support structures from the site. The resident of the property is the prior property owner and is willingly moving to another location as a result of the sale to the Applicant. There are approximately 905 housing units located in nearby Esparto (Yolo County 2009b) and other farm dwellings in the area. The removal of one unit would be less than 1 percent of the local housing supply and does not constitute an impact in and of itself. Based on this information and analysis, the February 2009 Initial Study concluded that impacts associated with population and housing would be less than significant. An additional discussion of these topics can be found in Section 5.2, Growth-Inducing Effects.

Public Services

The project would not significantly increase public services, including law enforcement, fire protection, school capacity, park or postal services, due to the nature of the project and minimal additional personnel. Based on this information and analysis, the February 2009 Initial Study concluded that impacts to public services would be less than significant.

Recreation

The project would not significantly increase the use of recreational facilities because it would not result in an increase in residential population that would use the parks. The project does not propose any activities that would directly result in the construction or expansion of recreational facilities. The project does propose, as a "net gain" to the public, to dedicate the 115-acre Granite Woodland site to the County. If recreational use is proposed at this site in the future, the potential for environmental impacts would be analyzed at that time. Based on this information and analysis, the February 2009 Initial Study concluded that recreation impacts would be less than significant.

Utilities and Service Systems

The project site is not served by a public wastewater treatment system and connection to an existing public system is not proposed by the project. The project would not require or result in the construction of new public stormwater drainage facilities or expansion of existing public facilities, and would have no impact on public stormwater facilities. Additionally, the project would not require water service from a public source. The water supply for aggregate processing, potable water, and irrigation for reclamation planting would be provided by existing on-site water supply wells. The project does not propose to have any sanitary wastewater treatment onsite. Sanitary facilities for workers and visitors at the site would be provided by portable chemical toilets. The existing septic system for the residence on-site would be decommissioned (i.e., removed during mining). The solid waste generated at the project site would be removed by a private contractor (Waste Management of Woodland) or processed onsite in accordance with county, state, and federal regulation. Project operator would be required to comply with all federal, state, and local regulations related to the management of solid waste. The project indicates that recycling would be implemented during proposed activities. Based on this information and analysis, the February 2009 Initial Study concluded that impacts to utilities and services would be less than significant.

EFFECTS FOUND TO BE SIGNIFICANT AND AVOIDABLE

Under CEQA, a significant effect on the environment is defined as a substantial, or potentially substantial, adverse change in any physical conditions within the area affected by the project. This includes both natural and man-made conditions. Project implementation would generate environmental impacts in several areas, as described in Chapter 4 and summarized in Table 2-1.

MITIGATION MEASURES TO AVOID OR REDUCE IDENTIFIED SIGNIFICANT IMPACTS

This EIR discusses mitigation measures that could be implemented. These mitigation measures are specific to the project, and they present actions for the Applicant to perform before, during or after

construction, or are included in case certain species or artifacts are encountered. The mitigations presented form the basis of the proposed Mitigation Monitoring Plan discussed in Section 1.4.

EFFECTS FOUND TO BE SIGNIFICANT AND UNAVOIDABLE

Under CEQA, a significant and unavoidable effect of the project is one that would cause a substantial adverse effect on the environment and for which no mitigation is available to reduce the impact to a less-than-significant level if the project is approved. These impacts are discussed in Chapter 4.0 of this EIR and summarized in Table 2-1. The following impacts were found to be significant and unavoidable:

- **Impact 4.3-1:** The project would remove 287 acres of Prime or Unique Farmland from production for up to 30 years, permanently converting 213 acres to nonagricultural use.
- **Impact 4.4-2:** The project would violate an air quality standard or contribute substantially to an existing or projected air quality violation (due to fugitive dust emissions).
- **Impact 4.4-3:** The project would 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 (PM_{10}).
- **Impact 4.5-1:** Project activities would adversely affect sensitive wildlife species (Swainson's hawk).
- **Impact 4.6-1:** The project has the potential to result in significant adverse physical impacts as a result of increases in greenhouse gas emissions.
- **Impact 4.6-2:** The project has the potential to conflict with an applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases.
- **Impact 5-4:** The project would contribute to cumulative climate change.

CUMULATIVE IMPACTS

CEQA Guidelines require an analysis of cumulative impacts for the project which are defined as two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts. Cumulative impacts may require additional mitigation measures, if project-specific mitigation would not reduce cumulative impacts. These impacts are discussed in Section 5.1 of this EIR.

GROWTH-INDUCING IMPACTS

CEQA requires that the growth-inducing impacts of a project be addressed in an EIR. 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. These impacts are discussed in Section 5.2 of this EIR.

2.7 SUMMARY OF ALTERNATIVES

Pursuant to State CEQA Guidelines Section 15126(f) and 15126.6, this EIR includes an analysis of a reasonable range of project alternatives, including the "no project" alternative. Alternatives to the project that have been analyzed in the EIR are summarized below.

No Project Alternative (Existing Conditions). This alternative analyzes the effects of taking no action. The allocation of 420,000 tons per year would remain assigned to the Granite "Woodland (Reiff) site", the other requested tonnage (505,859 tons mined) would remain unallocated, and the 115-acre Granite Woodland site would remain under the ownership of the Applicant. Implementation of streambank stabilization along Cache Creek may occur under this scenario, consistent with the Cache Creek Resource Management Plan (CCRMP).

Reduced Tonnage/Acreage Alternative. This alternative analyzes a project of reduced intensity. Under this alternative, one half of the requested tonnage would be extracted on a total and annual basis, approximately 500,000 tons mined annually (a maximum of 435,000 tons sold), assuming about one-half the project area (approximately 156 acres) mined to the full depth of the resource.

Alternative Location. This alternative assumes the same tonnage as requested under the project, but at an alternate Sand and Gravel Reserve (SGR) zoned site within the CCAP study area.

Off-Site Processing Alternative (Sequential Mining). This alternative analyzes sequential mining of the existing Granite Capay site first, followed by mining at the adjacent proposed Granite Esparto site. Mining at the Esparto site would be assumed to commence in 2021. Aggregate resources from both sites would be processed at the Granite Capay processing facilities. A new mining plant at the Granite Esparto site would not be included. This alternative assumes that the annual allotment of 1 million tons sold at the Granite Capay site would be increased by 870,000 tons sold annually which would allow for an accelerated pace of mining at each of the sites.

2.8 SUMMARY TABLE

The following table (Table 2-1) has been organized to correspond with environmental issues discussed in Chapter 4.0 of this EIR. The summary table is arranged in four columns:

- Environmental Impacts,
- Level of Significance before Mitigation,
- Recommended Mitigation Measures, and
- Level of Significance after Mitigation.

A series of mitigation measures is recommended to reduce an impact to a less than significant level in some instances; in those cases, all mitigation measures would be required to reduce the impact to a level of less than significant. Refer to Chapter 4.0 for a complete impact analysis.

Table 2-1 Summary of Impacts and Mitigation Measures

Environmental Impact	Level of Significance Before Mitigation		Mitigation Measures	Level of Significance After Mitigation	
	LS	S		LS	SU
Aesthetics					
Impact 4.2-1: The project could substantially change the existing visual character or quality of the site and its surroundings.		X	Mitigation Measure 4.2-1: The Applicant shall revise and submit the Habitat Restoration and Landscape Visual Screening Plan for County approval to establish a landscape buffer in the 800-foot gap area between the proposed easterly and southerly berms. The buffer may include berming. All planting shall be installed within two years of approval of the project. The plan shall demonstrate that full screening can be achieved prior to mining closer than 1,000 feet from County Road 87, based tree species, box size, and typical rate of growth.	X	
Impact 4.2-2: The project could substantially conflict with applicable plans, policies and regulations where such conflict would result in an adverse physical change in the environment.	X		Mitigation Measure 4.2-2: None required.	X	
Agriculture					
Impact 4.3-1: The project would remove 154 acres of Prime Farmland and 133 acres of Unique Farmland from production for up to 30 years, permanently converting 95 acres of "Prime" and 118 acres of "Unique" to non-agricultural use.		X	Mitigation Measure 4.3-1a: Prior to the commencement of mining activity on any Prime Farmlands, and subject to approval by the County, the Applicant shall demonstrate to the Yolo County Parks and Resources Department (YCPRD) that an offset at a ratio of 1:1 for each acre (154 acres) of Prime Farmland permanently converted to non-agricultural use by implementation of the project has been established pursuant to the requirements of Section 10-5.525 of the County Code, that permanent protection for any of the three options, and that the quality of set-aside farmland must be equal or better than the acreage converted.		X
		X	Mitigation Measure 4.3-1b: Prior to commencement of mining activity on any Unique Farmland, and subject to approval by the County, the Applicant shall demonstrate to the YCPRD that an offset at a ratio of 1:1 for each acre (133 acres) of Unique Farmland permanently converted to non-agricultural use by implementation of the project has been established pursuant to the requirements of Section 8-2.2416 of the County Code.		X
Impact 4.3-2: The project would conflict with an existing Williamson Act contract.		X	Mitigation Measure 4.3-2: Until such time as the Williamson Act contract on APN: 048-220-002 has expired, the Applicant cannot impact more than 74 acres of Prime Farmland on that parcel.	X	

Table 2-1 Summary of Impacts and Mitigation Measures

Environmental Impact	Level of Significance Before Mitigation		Mitigation Measures	Level of Significance After Mitigation	
	LS	S		LS	SU
Impact 4.3-3: The project could substantially conflict with applicable plans, policies, and regulations where such conflict would result in an adverse physical change in the environment.	X		Mitigation Measure 4.3-3: Prior to commencement of site work, the Applicant shall either 1) revise the reclamation plan to increase reclaimed agricultural lands in compliance with OCMP Action 5.4-7; 2) coordinate with the County pursuant to Action 2.4-7 (Net Gains) to determine whether additional net gains would enable the County to make a finding of substantial consistency based on a balancing of the two actions; or 3) identify an alternative functionally equivalent change or addition to the project that would be acceptable to the County and would enable a finding of substantial consistency to be made by the Board of Supervisors. If none of these actions are found to be feasible, then a potential conflict with the OCMP would remain.	X	
Air Quality					
Impact 4.4-1: The project could conflict with or obstruct implementation of the applicable air quality plan.	X		Mitigation Measure 4.4-1: None required.	X	
Impact 4.4-2: The project could violate an air quality standard or contribute substantially to an existing or projected air quality violation.		X	Mitigation Measure 4.4-2a: The Applicant shall implement these measures throughout construction and operation (YSAQMD 2007, BAAQMD 1999, SCAQMD 2008): • Water all active sites and plant roads at least twice daily to maintain a high soil moisture ratio. Frequency should be based on the type of operation, soil, and wind exposure; • Cover all trucks hauling dirt, sand, or loose materials while maintaining at least 2 feet of freeboard • Apply non-toxic binders (e.g., latex acrylic copolymer) to exposed areas after cut and fill operations and seed area; • Apply chemical soil stabilizers on inactive areas; • Plant tree windbreaks on the windward perimeter of projects if adjacent to open land; • Plant vegetative ground cover in disturbed areas as soon as possible; • Cover inactive storage piles; • Sweep streets if visible soil material is carried out from the site; and • Treat accesses to a distance of 100 feet from the paved road with a 6 to 12-inch layer of wood chips or mulch or with a 6-inch layer of gravel.		X

Table 2-1 Summary of Impacts and Mitigation Measures

Environmental Impact	Level of Significance Before Mitigation		Mitigation Measures	Level of Significance After Mitigation	
	LS	S		LS	SU
		X	Mitigation Measure 4.4-2b: The Applicant shall implement the following standard measures during construction and operation to reduce emissions of equipment and vehicle exhaust (YSAQMD 2007, BAAQMD 1999, SCAQMD 2008): The project specifications shall include 13 CCR Sections 2480 and 2485, which limit the idling of all diesel-fueled commercial vehicles (weighing over 10,000 pounds, both California- or non-California-based trucks) to five minutes at any location; • Grid power shall be used instead of diesel generators when the following conditions are feasible: • Grid power is available, • Construction is within 100 feet of the grid power source, • Portable electrical cabling is feasible, and • The grid power source is the proper voltage, amperage and can be connected without effect to the entity being supplied by the grid power. • A schedule of low-emissions tune-ups shall be developed and such tune-ups shall be performed on all equipment, particularly for haul and delivery trucks; • Engines shall be retrofitted with diesel oxidation catalysts to remove emissions such as diesel particulate matter filters; • Idling time of diesel-powered equipment shall be limited to two minutes, except when equipment is running in order to hold lifted loads or when the estimated idling time is less than three minutes; and • Alternative-fuel-powered equipment (i.e. natural gas, biodiesel, and electric) shall be used when feasible.		X
Impact 4.4-3: The project could 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.		X	Mitigation Measure 4.4-3: Implementation of Mitigation Measures 4.4-2a and 4.4-2b.		X

Table 2-1 Summary of Impacts and Mitigation Measures

Environmental Impact	Level of Significance Before Mitigation		Mitigation Measures	Level of Significance After Mitigation	
	LS	S		LS	SU
Impact 4.4-4: The project could expose sensitive receptors to substantial pollutant concentrations.	X		Mitigation Measure 4.4-4: None required.	X	
Impact 4.4-5: The project could substantially conflict with applicable plans, policies and regulations where such conflict would result in an adverse physical change in the environment.	X		Mitigation Measure 4.4-5: None required.	X	
Biological Resources					
Impact 4.5-1: Project activities could adversely affect sensitive wildlife species.		X	Mitigation 4.5-1a: NORTHWESTERN POND TURTLE No earlier than 30 days before ground disturbance begins, surveys for the northwestern pond turtle shall be conducted. If northwestern pond turtles are observed in the area, attempts shall be made by a CDFG approved biologist to capture (trap/net) and relocate the turtles. Northwestern pond turtles are usually relocated to a nearby downstream reach of a stream. If an active nest is discovered during operations, then the Applicant shall consult with CDFG to determine what mitigation measures shall be applied (i.e., buffer zones or alterations to the construction schedule to avoid the area until nesting is complete).	X	
		X	Mitigation 4.5-1b: NESTING MIGRATORY BIRDS, NON-LISTED RAPTORS, AND BURROWING OWLS To avoid and minimize impacts on nesting birds, the Applicant shall not remove trees, shrubs, or herbaceous vegetation during the nesting season (February 1 to August 31). This vegetation shall only be removed from September 1 through January 31, to the extent feasible. If the Applicant initiates construction between February 1 to August 31, surveys shall commence 30 days prior to any activities in potential nesting areas within the project. A biological monitor shall conduct preconstruction surveys and monitor construction sites with nesting habitat continuously for bird nesting activities and inspect animal burrows for burrowing owl nests beginning in late February, prior to site clearing and grading. All ground areas shall be surveyed prior to any construction activities and initial grading. Raptor nesting surveys shall include examination of all trees and shrubs within 500 feet of the construction corridor. All trees, predominantly near the farm	X	

Table 2-1 Summary of Impacts and Mitigation Measures

Environmental Impact	Level of Significance Before Mitigation		Mitigation Measures	Level of Significance After Mitigation	
	LS	S		LS	SU
			complex, that will be removed shall be surveyed prior to removal. For burrowing owl, surveys shall be conducted according to the protocols in the guidelines developed by the Burrowing Owl Consortium (SCPBRG 2009). Occupied burrows shall not be disturbed during the nesting season (February 1 through August 3 1) unless a qualified biologist approved by CDFG verifies through noninvasive methods that either: 1) the birds have not begun egg-laying and incubation; or 2) that juveniles from the occupied burrows are foraging independently and are capable of independent survival. To offset the loss of foraging and burrow habitat on the project site, if any, a minimum of 6.5 acres of foraging habitat (calculated on a 100 m {approx. 300 ft.} foraging radius around the burrow) per pair or unpaired resident bird, shall be acquired and permanently protected. The protected lands shall be adjacent to occupied burrowing owl habitat and at a location acceptable to CDFG. Protection of additional habitat acreage per pair or unpaired resident bird may be applicable in some instances When destruction of occupied burrows is unavoidable, existing unsuitable burrows shall be enhanced (enlarged or cleared of debris) or new burrows created (by installing artificial burrows) at a ratio of 2:1 on the protected lands site. If owls must be moved away from the disturbance area, passive relocation techniques shall be used rather than trapping. At least one or more weeks shall be necessary to accomplish this and allow the owls to acclimate to alternate burrows. The Applicant shall provide funding for long-term management and monitoring of the protected lands. The monitoring plan shall include success criteria, remedial measures, and an annual report to the County and to CDFG. Any active nests of non-listed raptors found in or adjacent to disturbance areas shall be fenced with a 300-foot radius buffer around the nest site. This 300-foot buffer may be reduced if a qualified raptor biologist determines that the nesting raptors are acclimated to the project and related disturbance, and otherwise will not be adversely affected by construction activities. At a minimum, the non-disturbance buffer shall be a radius of 100 feet around the nest site. If the nest site is on an adjacent property or property that cannot be accessed, the portion of the buffer that occurs within the project corridor shall be fenced. When construction buffers are reduced in size, the raptor biologist shall monitor distress levels of the nesting birds while the birds nest and construction persists. If it is determined that construction could result in reproductive failure, construction shall be postponed in the immediate area until young have fledged. In cases where construction		

Table 2-1 Summary of Impacts and Mitigation Measures

Environmental Impact	Level of Significance Before Mitigation		Mitigation Measures	Level of Significance After Mitigation	
	LS	S		LS	SU
			activities cannot be postponed, the project biologist shall coordinate with CDFG and USFWS, and at a minimum, the 300-foot buffer shall be implemented..		
		X	Mitigation 4.5-1c: SWAINSON'S HAWK FORAGING The Applicant shall either 1) pay a Swainson's hawk mitigation fee for the area disturbed by development, which is currently estimated at $8,660/acre or 2) implement another project specific mitigation plan which is deemed appropriate to the California Department of Fish and Game. As of January 9, 2006, projects that exceed 40 acres in area are no longer eligible to pay the fee, but are required to dedicate suitable conservation easements as determined by the Yolo HCP/NCCP Joint Powers Agency (JPA) and the California Department of Fish and Game. In the event that the final HCP/NCCP is adopted before development occurs, the developer shall participate in the Final HCP/NCCP to mitigate for the loss of Swainson's hawk habitat. The Memorandum of Understanding (MOU) between CDFG and Yolo County states that the Applicant shall mitigate directly because the project is over 40 acres (Wong, pers. comm. 2009). The Applicant shall provide 1 acre of Swainson's hawk foraging habitat for every 1 acre of foraging habitat that is lost to the project. The Applicant may transfer fee simple title or a conservation easement over Swainson's hawk foraging habitat, along with appropriate enhancement and management funds, in lieu of paying the acreage based mitigation fee.		X
		X	Mitigation 4.5-1d: BANK SWALLOW The Applicant shall conduct preconstruction surveys for the bank swallow during breeding season from March 1 to July 31. If it is determined that swallows are nesting in areas where construction could result in injury or failed reproductive success, construction disturbance shall be postponed in the immediate area until young have fledged. In cases where construction activities cannot be postponed (for safety or significant schedule conflicts) the project biologist shall coordinate with CDFG and USFWS. To prevent inadvertent take of bank swallow which may utilize stockpiles, vertical slopes shall not be allowed to exceed 10 feet and shall be regularly inspected during the nesting season. Section 10-4.433 (Soil Stockpiles) of the OCSMO states: Topsoil, subsoil, and subgrade materials in stockpiles shall not exceed 40 feet in height, with slopes no steeper than 2:1 (horizontal:vertical). Stockpiles, other than aggregate stockpiles, shall	X	

Table 2-1 Summary of Impacts and Mitigation Measures

Environmental Impact	Level of Significance Before Mitigation		Mitigation Measures	Level of Significance After Mitigation	
	LS	S		LS	SU
			be seeded with a vegetative cover to prevent erosion and leaching. The use of topsoil for purposes other than reclamation shall not be allowed without the prior approval of the Director. Slopes on stockpiled soils shall be graded to a 2:1 slope for long-term storage to prevent use by bank swallows. At no time during the active breeding season (May 1 through July 31) shall slopes on stockpiles exceed a slope of 1:1, even on a temporary basis. Stockpiles shall be graded to a minimum 1:1 slope at the end of each workday where stockpiles have been disturbed during the active breeding season. Stockpiles shall be inspected weekly during nesting season to verify that no bank swallows have begun nesting activities in the slope areas.		
Impact 4.5-2: Project construction could have a significant impact on riparian vegetation and habitat.		X	Mitigation 4.5-2: The Applicant shall implement the Reclamation Plan and the riparian habitat restoration measures in the accompanying HRVSP.	X	
Impact 4.5-3: Potential to have a substantial adverse effect on federally protected wetlands.		X	Mitigation 4.5-3: The Applicant shall amend the wetland delineation utilizing current USACE guidelines prior to start of construction. If no wetlands are delineated within the area of construction activities, no further mitigation is required. If wetlands are delineated within the area of construction activities, the Applicant shall develop a wetland mitigation plan for approval by permitting agencies, to create, restore, or enhance wetlands of similar function at a 1 to 1 ratio.	X	
Impact 4.5-4: Potential to conflict with local policies or ordinances protecting biological resources.	X		Mitigation 4.5-4: None required.	X	
Climate Change					
Impact 4.6-1: The project would result in new net increases in GHG emissions.		X	Mitigation Measure 4.6-1: The Applicant shall submit a plan for approval by the County that supports the County's net zero emissions goal as follows: 1) identify practical and reasonable changes to project design and operations that reduce project GHG emissions down to the lowest feasible levels; 2) for remaining GHG emissions, identify verifiable offsets that are (to the greatest feasible extent): locally based, project relevant, and consistent with other long term goals of the County. With implementation of this mitigation measure, potential project impacts on climate change would be reduced to the greatest feasible extent.		X

Table 2-1 Summary of Impacts and Mitigation Measures

Environmental Impact	Level of Significance Before Mitigation		Mitigation Measures	Level of Significance After Mitigation	
	LS	S		LS	SU
Impact 4.6-2: The project has the potential to conflict with an applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases.		X	Mitigation Measure 4.6-2: Implement Mitigation Measure 4.6-1.		X
Impact 4.6-3: The project may experience significant adverse physical effects from future effects of Global Climate Change.		X	Mitigation Measure 4.6-3: Implement Mitigation Measure 4.6-1.	X	
Cultural Resources					
Impact 4.7-1: Potential to substantially change the significance of a historical resource.	X		Mitigation Measure 4.7-1: None required.	X	
Impact 4.7-2: The project could impact historic sites EC-07-17, -18, and -19 and eleven isolated artifacts.	X		Mitigation Measure 4.7-2 None required.	X	
Impact 4.7-3: The project could result in impacts to previously undiscovered prehistoric and historic resources and human remains.	X		Mitigation Measure 4.7-3: None required.	X	
Impact 4.7-4: The project could result in impacts to previously undiscovered paleontological resources.	X		Mitigation Measure 4.7-4: None required.	X	
Impact 4.7-5: The project could substantially conflict with applicable plans, policies, and regulations where such conflict would result in an adverse physical change in the environment.	X		Mitigation Measure 4.7-5: None required.	X	

Table 2-1 Summary of Impacts and Mitigation Measures

Environmental Impact	Level of Significance Before Mitigation		Mitigation Measures	Level of Significance After Mitigation	
	LS	S		LS	SU
Geology and Soils					
Impact 4.8-1: Groundshaking from earthquakes could damage project facilities and pose a safety risk to site visitors.		X	Mitigation Measure 4.8-1: The Applicant shall minimize risks to facilities and on-site visitors by identifying and avoiding unsafe conditions. The Applicant shall consult with the dredge manufacturer regarding methods to stabilize the dredge in the event of seismic shaking. Methods may include anchoring, connecting the dredge to land via cable, or other appropriate systems. The Applicant shall design slopes leading to the wet pit in accordance with the project-specific slope stability study (Wallace-Kuhl & Associates, Inc. 2007b). The Applicant shall train on-site workers regarding seismic safety issues, including actions to be taken during strong seismic shaking and potential hazards of seismic shaking, including rockfall from overhead conveyor systems and collapse of stockpiled rock material. The Applicant shall require workers and on-site visitors to wear safety equipment, such as hard hats.	X	
Impact 4.8-2: The project would have a potential for slope failure or significant erosion.	X		Mitigation Measure 4.8-2: None required.	X	
Impact 4.8-3: The project would cause exposure to unstable soils.	X		Mitigation 4.8-3: None required.	X	
Impact 4.8-4: The project could disturb or destroy unique geologic features.	X		Mitigation Measure 4.8-4: None required.	X	
Impact 4.8-5: The project could substantially conflict with applicable plans, policies and regulations where such conflict would result in an adverse physical change in the environment.	X		Mitigation Measure 4.8-5: None required.	X	
Hazards					
Impact 4.9-1: The project could result in exposure of the public or the environment from accidental releases during the routine transport, use, or disposal of petroleum and other hazardous materials during construction, mining, processing, or reclamation.	X		Mitigation 4.9-1: None required.	X	

Table 2-1 Summary of Impacts and Mitigation Measures

Environmental Impact	Level of Significance Before Mitigation		Mitigation Measures	Level of Significance After Mitigation	
	LS	S		LS	SU
Impact 4.9-2: Excavation of contaminated soil during mining or reclamation could result in exposure.	X		Mitigation 4.9-2: None required.	X	
Impact 4.9-3: Demolition and removal of existing site structures may result in exposure to asbestos, lead, or other hazardous building materials.	X		Mitigation 4.9-3: None required.	X	
Impact 4.9-4: The project could substantially conflict with applicable plans, policies, and regulations where such conflict would result in an adverse physical change in the environment.	X		Mitigation 4.9-4: None required.	X	
Hydrology and Water Quality					
Impact 4.10-1: The project could violate water quality standards through discharge of storm water.	X		Mitigation Measure 4.10-1: None required.	X	
Impact 4.10-2: The project could result in an increase in mercury loading to Cache Creek from erosion of sediments.	X		Mitigation Measure 4.10-2: None required.	X	
Impact 4.10-3: Project operational water demands could deplete groundwater supplies.	X		Mitigation Measure 4.10-3: None required.	X	
Impact 4.10-4: The project could deplete groundwater supplies from backfilling areas with fine sediments.	X		Mitigation Measure 4.10-4: None required	X	

Table 2-1 Summary of Impacts and Mitigation Measures

Environmental Impact	Level of Significance Before Mitigation		Mitigation Measures	Level of Significance After Mitigation	
	LS	S		LS	SU
Impact 4.10-5a: The project would substantially alter the existing drainage pattern of the site or area, resulting in erosion or sedimentation, or result in on or off-site flooding.	X		Mitigation Measure 4.10-5a: None required.	X	
Impact 4.10-5b: In-stream stabilization structures could contribute to downstream erosion.		X	Mitigation Measure 4.10-5b: The Applicant shall provide supplemental hydraulic analysis that examines downstream and cross-stream effects of the proposed in-channel improvements, and identifies supplemental actions/improvements, if necessary, for potential erosion affects on opposing banks or downstream, from increased flow velocities against the base of the planned revetment. The supplemental analysis shall analyze and ensure compliance with OCSMO Section 10-4.429(d)(4). The report must have the original signature of the engineer. The identified improvements (if any) shall be implemented by the Applicant as specified by the project engineer.	X	
Impact 4.10-6: The project could create or contribute runoff water exceeding the capacity of planned stormwater drainage or contribute additional sources of polluted runoff.	X		Mitigation Measure 4.10-6: None required.	X	
Impact 4.10-7a: The project could substantially degrade water quality by pumping groundwater.		X	Mitigation Measure 4.10-7a: By limiting the depth of any proposed wells the operator shall ensure that only groundwater from one of the freshwater aquifers overlying the Coast Range bedrock is used in wash fines processing.	X	
Impact 4.10-7b: Open water areas created during reclamation could become eutrophic, resulting in degraded water quality.	X		Mitigation Measure 4.10-7b: None required.	X	
Impact 4.10-7c: Creation of open water surfaces could increase the potential for degradation of water quality by discharge of chemicals (diesel, petroleum, etc.	X		Mitigation Measure 4.10-7c: None required.	X	

Table 2-1 Summary of Impacts and Mitigation Measures

Environmental Impact	Level of Significance Before Mitigation		Mitigation Measures	Level of Significance After Mitigation	
	LS	S		LS	SU
Impact 4.10-7d: Presence of mercury in site soils could result in bioaccumulation of mercury in reclaimed water bodies.	X		Mitigation 4.10-7d: None required.	X	
Impact 4.10-8: The project would place structures in flood hazard zone.	X		Mitigation 4.10-8: None required.	X	
Impact 4.10-9: The project could substantially conflict with applicable plans, policies, and regulations where such conflict would result in an adverse physical change in the environment.	X		Mitigation 4.10-9: None required.	X	
Land Use and Planning					
Impact 4.11-1: The project could create substantial incompatibilities between land uses.	X		Mitigation Measure 4.11-1: None required.	X	
Impact 4.11-2: The project could substantially alter the type or intensity of land use within an area.	X		Mitigation Measure 4.11-2: None required.	X	
Impact 4.11-3: The project would affect the local jobs/housing relationship.	X		Mitigation Measure 4.11-3: None required.	X	
Impact 4.11-4: The Project could substantially conflict with applicable plans, policies and regulations where such conflict would result in an adverse physical change in the environment.	X		Mitigation Measure 4.11-4: None required.	X	

Table 2-1 Summary of Impacts and Mitigation Measures

Environmental Impact	Level of Significance Before Mitigation		Mitigation Measures	Level of Significance After Mitigation	
	LS	S		LS	SU
Mineral Resources					
Impact 4.12-1: The project could result in loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan.	X		Mitigation Measure 4.12-1: None required.	X	
Impact 4.12-2: The project could substantially conflict with applicable plans, policies and regulations where such conflict would result in an adverse physical change in the environment.	X		Mitigation Measure 4.12-2: None required.	X	
Traffic and Circulation					
Impact 4.13-1: The project would cause substantial increases in traffic.		X	Mitigation Measure 4.13-1: The Applicant shall assume joint pavement maintenance responsibility with Yolo County on County Road 87 from the project access road to County Road 19, and on County Road 19, from County Road 87 to the Teichert (Esparto) driveway. Joint maintenance responsibility (beyond regularly scheduled County maintenance activities) for County Road 19, from the Teichert (Esparto) driveway to I-505, shall be proportionally shared between the Applicant and Teichert Aggregates or its successor in interest. Proportional maintenance costs shall be determined based upon the previous year's sales figures for each of the two operations, as reported to the County. The operator's joint maintenance responsibility for the roads specified above shall continue throughout the life of the permit. The County will be responsible for the necessary striping of the roads and maintenance of existing county-maintained roadside ditches. Due to the significant increase in truck traffic expected, it is anticipated that more frequent and extensive pavement repairs will be required. County personnel will not be making routine visits to examine the pavement conditions. The Applicant shall be responsible to inspect pavement conditions and complete the required repairs on an ongoing basis. If the repairs are not completed on time, and the County must respond and make emergency pavement repairs, and/or must make repairs that the Applicant cannot complete on time when the public's safety is considered at risk by the County Engineer, then the Applicant will be billed for the county's repair work on a time and materials basis. At such time as the Teichert (Esparto) agreement for maintenance responsibility terminates, the responsibility for maintaining the portion County Road 19, from the Teichert (Esparto) driveway to I-	X	

Table 2-1 Summary of Impacts and Mitigation Measures

Environmental Impact	Level of Significance Before Mitigation		Mitigation Measures	Level of Significance After Mitigation	
	LS	S		LS	SU
			505 shall become the sole responsibility of the Applicant. Specific initial improvements shall be determined by the County Engineer and shall be constructed by the Applicant, or by the Applicant and Teichert Aggregates or its successor in interest, within one year of mining commencement. The Applicant (and where appropriate, Teichert Aggregates or their successor in interest) shall submit an annual evaluation of the structural integrity of the road to the County and shall implement pavement improvements to maintain safe and efficient traffic operation on the road for each upcoming year..		
Impact 4.13-2: The project would add trips to the roadway system.	X		Mitigation Measure 4.13-2: None required.	X	
Impact 4.13-3: The project could substantially conflict with applicable plans, policies and regulations where such conflict would result in an adverse physical change in the environment.	X		Mitigation Measure 4.13-3: Initial road improvements to County Road 87 from the project access road to County Road 19 and County Road 19 from Road 87 to the Teichert (Esparto) driveway, including widening and improving the structural pavement section to support the calculated traffic index (TI) to meet current County standards, shall be designed and constructed by the Applicant, to the satisfaction of the County Engineer, within one year of commencement of mining..	X	
CEQA Considerations					
Impact 5-1: The annual tonnage requested by the project is adequately covered by the OCMP cumulative analysis.	X		Mitigation Measure 5-1: None required.	X	
Impact 5-2: The total requested tonnage over the life of the permit is covered by the OCMP and CCRMP cumulative analysis.	X		Mitigation Measure 5-2: None required.	X	

Table 2-1 Summary of Impacts and Mitigation Measures

Environmental Impact	Level of Significance Before Mitigation		Mitigation Measures	Level of Significance After Mitigation	
	LS	S		LS	SU
Impact 5-3: The requested 30-year term of the permit may be determined to be inconsistent with the successful implementation of the OCMP.		X	Mitigation Measure 5-3a: In order to remain consistent with the synchronized permit period and adaptive management contemplated by the OCMP, restrict the term of the requested approval to no more than 17 years with an expiration of December 31, 2026, with interim reviews consistent with all other long-term mining permit approvals.	X	
		X	Mitigation Measure 5-3b: The County shall find that synchronized permits are not necessary for the success of the program and therefore, with the additional cumulative analysis provided by this EIR, the requested permit period could be approved.		X
Impact 5-4: The project would contribute to cumulative climate change.		X	Mitigation Measure 5-4: Implement Mitigation Measure 4.6-1.		X

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CHAPTER 3.0
PROJECT DESCRIPTION

3.1 INTRODUCTION

In October 2007, Granite Construction Company, Inc. (the Applicant) filed an application with the Yolo County Parks and Resources Department (YCPRD) for approval of commercial mining and processing of sand and gravel resources from a site in central unincorporated Yolo County. Approval of the project is considered a discretionary action under the California Environmental Quality Act (CEQA). As such, the YCPRD is the lead agency overseeing the preparation of this Environmental Impact Report (EIR) for the application for the Granite Esparto Mining and Reclamation Project (the project). The Applicant is requesting approval of a new 30-year Off-Channel Mining Permit to excavate, process, and sell sand and gravel resources. The 390-acre project site is located approximately 1.4 miles north of the town of Esparto, California, and 27 miles west of Sacramento (Figure 1-1). The proposed project site is located adjacent to and east of the existing Granite Capay Mining site, a project originally approved in 1996 and revised in 2002 (Figure 3-1).

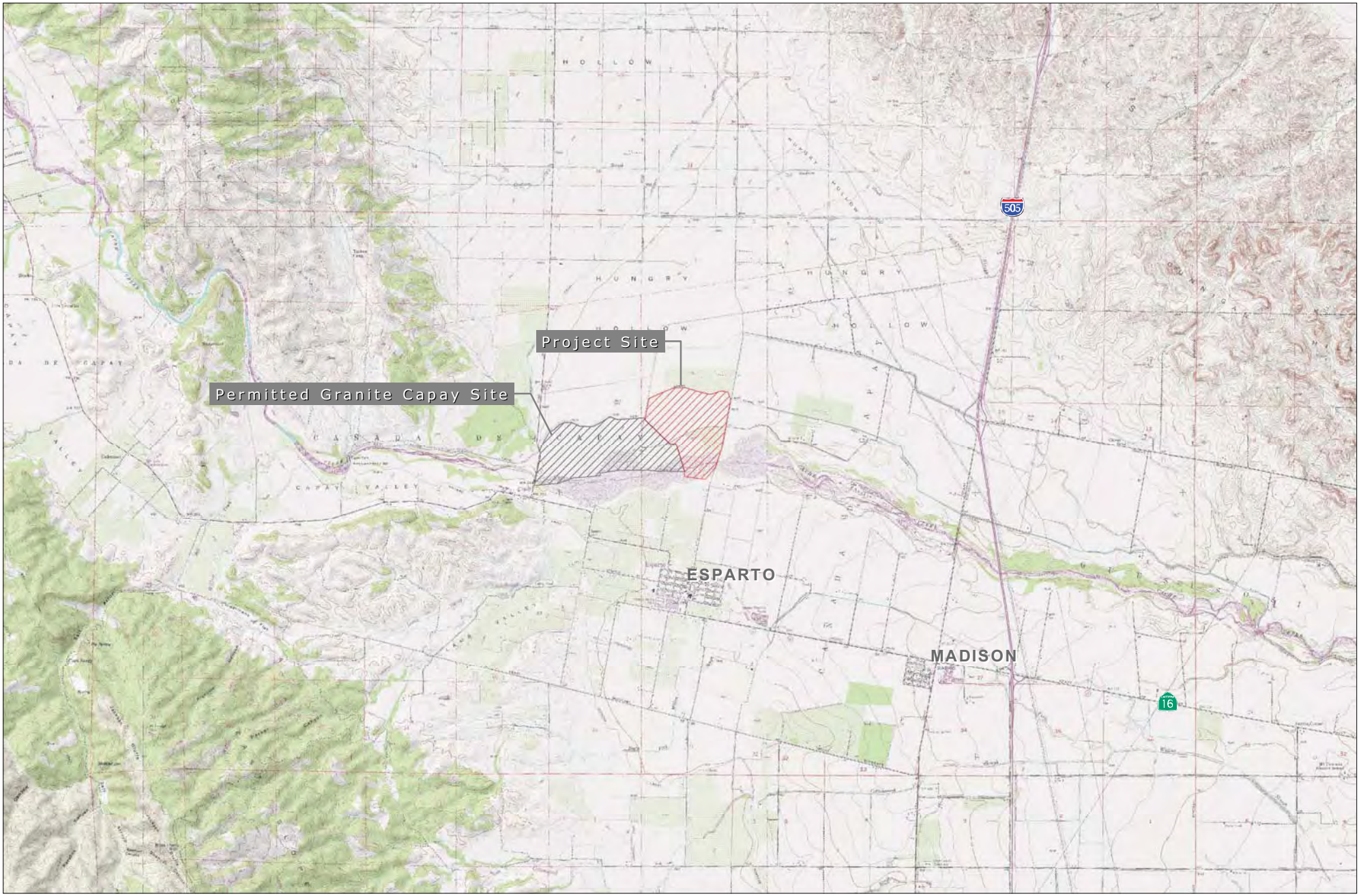
Land uses in the area are dominated by agriculture and aggregate mining activities. The Applicant proposes to mine and process approximately 1 million tons of sand and gravel (i.e., construction aggregate) annually (a maximum of 870,000 tons sold annually) from a 313±-acre mining area (excludes setbacks and bank improvements of the total 390 acre project site) and to reclaim the mined lands to agriculture, lake and associated habitat, and open space uses. In addition, the Applicant is applying for approval of the 20 percent exceedance flexibility allowed under Section 10.4-405 of the County Code. This would allow up to 1.2 million tons in any given year. Over the requested 30-year life of the permit, this would result in the extraction of about 30 million tons of aggregate resources (26.1 million tons sold).[1]

The mined aggregate would be processed at a proposed new rock processing plant to be constructed within the southern portion of the proposed mining area. The mined areas would be reclaimed to three general uses: open lake and associated habitat, agriculture, and open space/dry pasture. The project also proposes to implement a Streambank Stabilization Plan (SSP) along the north bank of Cache Creek and within the project site (see SSP below).

The Applicant has requested the following approvals and authorizations:

a. Approval of a Rezoning to change the zoning designations from Agricultural Preserve with Sand and Gravel Reserve Combining Zone (A-P/SGR) to Agricultural Preserve with Sand and Gravel Combining Zone (A-P/SG) and from General Agriculture with Sand and Gravel Reserve Combining Zone (A-1/SGR) to General Agricultural with Sand and Gravel Combining Zone (A-1/SG).

[1] It is assumed a certain percentage of the excavated material would be used for fill, or consist of material too fine or poor quality for use or sale.



MAP LOCATION

CALIFORNIA

LEGEND

- County Boundary
- Project Site
- Permitted Granite Capay Site

N

0 1.25 2.5

MILES

FIGURE 3-1

DRAFT EIR

Granite Esparto Mining and Reclamation Project

SITE VICINITY MAP

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b. Approval of a 30-year Off-Channel Mining Permit for aggregate extraction and processing from a 313-acre mining area on portions of two adjacent parcels (Assessor's Parcel Numbers [APNs] 048-220-015 and 048-220-022). The total volume of aggregate mined would be about 30 million tons extracted (a maximum of 26.1 million tons sold).

c. Approval of a Reclamation Plan for the proposed mining and processing areas to a combination of reclaimed uses, including agriculture, open space/dry pasture and open lake with associated habitat.

d. Authorization to exceed the annual maximum aggregate production cap by up to 20 percent as provided in Section 10.4-405 of the Off-Channel Surface Mining Ordinance (OCSMO). This has the effect of increasing the potential annual extraction in any given year from the requested base level of 1 million tons mined (870,000 tons sold) to 1.2 million tons mined (1,044,000 million tons sold).

e. Relinquishment of the existing mining entitlement (420,000 tons per year) for the Granite "Woodland (Reiff) site" (115 acres comprised of APNs: 025-300-005, 025-300-032, and 025-350-009)

f. Authorization to execute a Development Agreement.

g. Approval of a Demolition Permit to remove an existing single-family home and various outbuildings.

h. Approval of a Streambed Stabilization Plan to allow mining within 700 feet of and at least 200 feet away from the channel bank within the streamway influence boundary, as provided in Section 10-4.428(d) of the Yolo County OCSMO.

i. Approval of a Flood Hazard Development Permit (FHDP) to implement proposed bank stabilization and the Test 3 boundary[2] along approximately 2,300 linear feet of creek bank from County Road 87 (Esparto Bridge) westward.

3.2 SETTING

REGIONAL LOCATION

The project site is located near the western margin of the Sacramento Valley in central Yolo County, California (Figure 1-1) approximately 27 miles west-northwest of Sacramento and 14 miles west of the city of Woodland. The regional topography consists of low rolling hills and broad alluvial plains formed on the eastern flank of the Coast Range. Cache Creek, located adjacent to the project site to the south, is the main drainage feature in the Cache Creek Basin.

[2] Approved as part of the Cache Creek Resources Management Plan (CCRMP) and the Cache Creek Improvement Program (CCIP) (Yolo County 2002a), the "Test 3" boundary is a conceptual channel configuration for Cache Creek that requires reshaping to create a series of terraces and low flow channels that will stabilize the channel and allow it to behave more like a natural system.

PROJECT LOCATION

The project site is located on relatively flat topography within an alluvial valley formed along Cache Creek (Figure 3-2). The valley is bounded on the west by the Capay Hills and Blue Mountains and to the east by the Dunnigan Hills. The geographical location is an unsectioned portion of Township 10 North, Range 1 West, Mount Diablo Base and Meridian, as depicted on the Esparto 1993 U.S. Geological Survey (USGS) 7.5-foot topographic quadrangle map.

County Road 87, a north-south trending two-lane roadway, is located along the eastern margin of the project site. The Esparto Bridge on County Road 87 (crossing Cache Creek) is positioned adjacent to the southeast corner of the proposed mining area. A private paved, two-lane roadway, Fulton and Frank Lane, provides access through the central portion of the site (and to the existing on-site residence) from County Road 87. County Road 19A extends eastward from the intersection of County Road 87 and Fulton and Frank Lane. A paved, two-lane driveway located along the south margin of the proposed mining area provides access to the existing Capay Facility west of the project site. The project proposes to maintain this road as access to the proposed project facilities. One residence (with associated structures) is located in the central portion of the project site; there are no other structures on the site. The portion of the project site north of Cache Creek is currently used as agriculture. The area north of Fulton and Frank Lane is currently in row crop production. South of the road, open space/grassland is located in the west and the east supports orchard crops. The area of the project site along and south of Cache Creek is either creek channel, banks, or open space/grassland. A portion of the project site was previously used for aggregate processing. There are three existing supply wells on the property that provide domestic and irrigation water supply.

LAND USE IN THE VICINITY

Land uses in the surrounding area include agriculture to the north and east, an existing aggregate mining operation (Granite's Capay Facility) to the west, and open space and agriculture to the south. The project site is within the region regulated by the 1996 Cache Creek Area Plan (CCAP) (Yolo County 1996a), an area of the lower Cache Creek Basin for which the County has developed specific requirements for the management of important aggregate resources. The project is required to conform to the provisions of Title 10 of the Yolo County Code including the OCSMO (Chapter 4), the Surface Mining Reclamation Ordinance (SMRO) (Chapter 5), and the In-Channel Maintenance Mining Ordinance (ICMMO) (Chapter 3).

3.3 PROJECT OBJECTIVES

The Applicant has defined the overall objective of the project to be as follows:

- To secure permitting to mine and process 1 million tons of aggregate (870,000 tons sold) from the project site for a 30-year mining period to supply the demand for construction aggregate. Construction aggregate is necessary for a broad range of public- and private-sector construction, infrastructure, and maintenance projects. The cost of aggregate is largely dependent on the transportation costs. Therefore, shorter transportation distances afforded by local sources of aggregate contribute to maintaining an adequate supply at a reasonable cost to the consumer while minimizing transport of material.

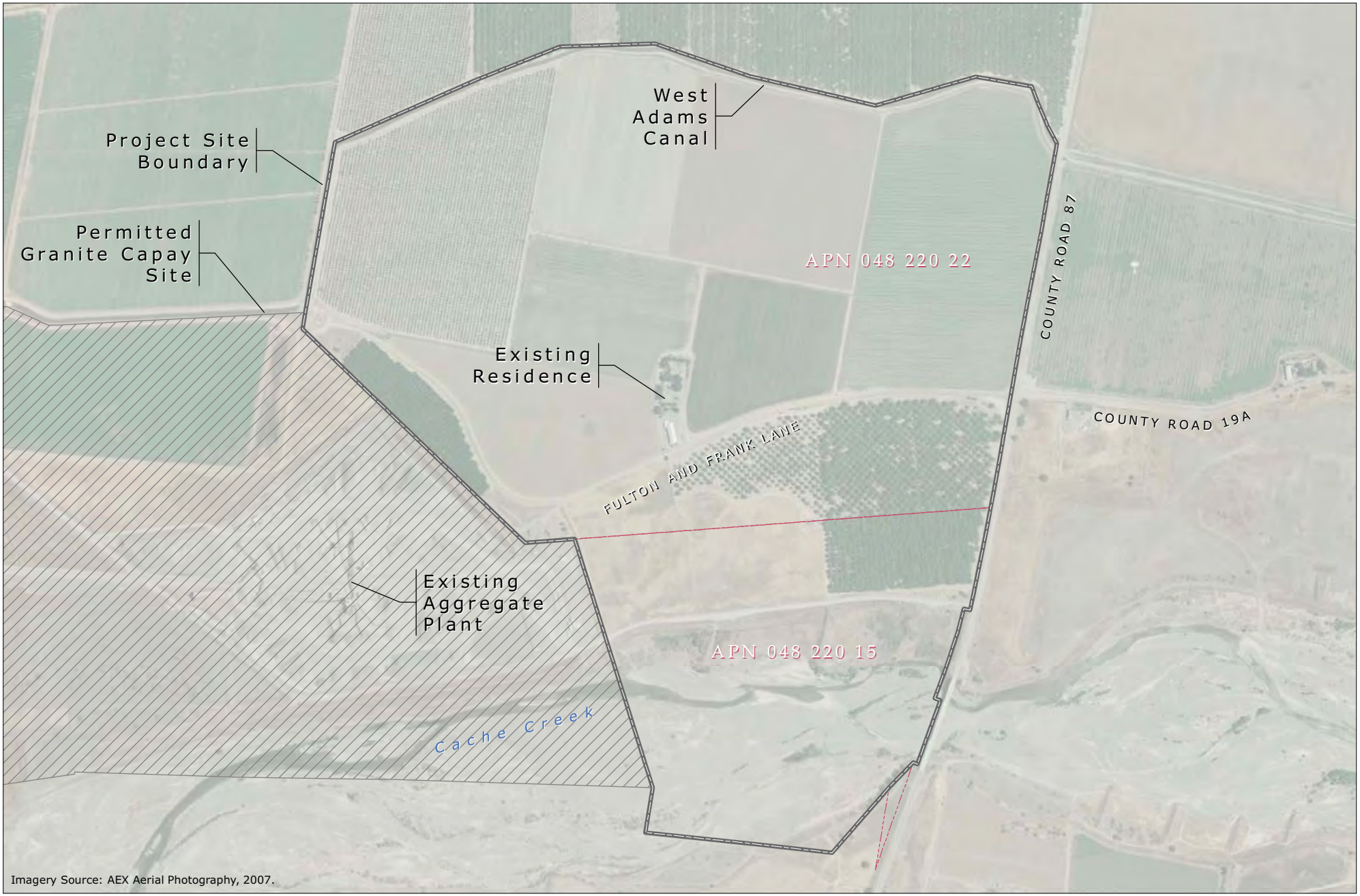

FIGURE 3-2

DRAFT EIR
Granite Esparto Mining and Reclamation Project
PROJECT SITE MAP

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The Applicant has stated that other objectives for the project are as follows:

- To maximize its ability to provide a secure source of high-quality construction aggregates to meet regional demand for these materials,
- To minimize the impacts of mining on adjacent property owners and the public,
- To maximize the benefits of land dedication to the County, and
- To provide for a diverse range of reclamation uses for mined lands.

3.4 PROJECT COMPONENTS AND CHARACTERISTICS

REZONING

The current zoning designations for the project site are Agricultural Preserve (A-P) for the northern parcel (APN: 048-220-022) and General Agriculture (A-1) for the southern parcel (APN: 048-220-015) (Table 3-1). A Sand and Gravel Reserve (SGR) Combining District (or overlay) designation has been placed over the entire project site. The SGR overlay designates land within the CCAP that is reserved for mining after 2026 (Title 8 Article 23.8 of the County Code). For mining to be allowed before 2026, the Applicant has requested that 390 acres of the site be rezoned from SGR to Sand and Gravel (SG). This rezone would allow mining upon project approval (Title 8 Article 23.1 of the County Code).

Table 3-1 Project Site Zoning

Assessor's Parcel Number	Existing Zoning	Proposed Zoning	Acreages
048-220-022	A-P (SGR)	A-P (SG)	286.4
048-220-015	A-1 (SGR)	A-1 (SG)	103.6
		Total	390

Notes:
A-P = Agricultural Preserve
A-1 = General Agriculture
SGR = Sand and Gravel Reserve Combining District (overlay designation, does not change underlying zoning)
SG = Sand and Gravel Combining District (overlay designation, does not change underlying zoning)

MINING PLAN

The project mining plan is shown on Figure 3-3. The maximum mining depth would be approximately 75 feet below the existing ground surface. Groundwater levels fluctuate seasonally, but typically occur at depths ranging from 35 to 50 feet below ground surface (Wallace-Kuhl & Associates, Inc. 2007a). Therefore, mining would occur both above (dry) and below (wet) the groundwater level.

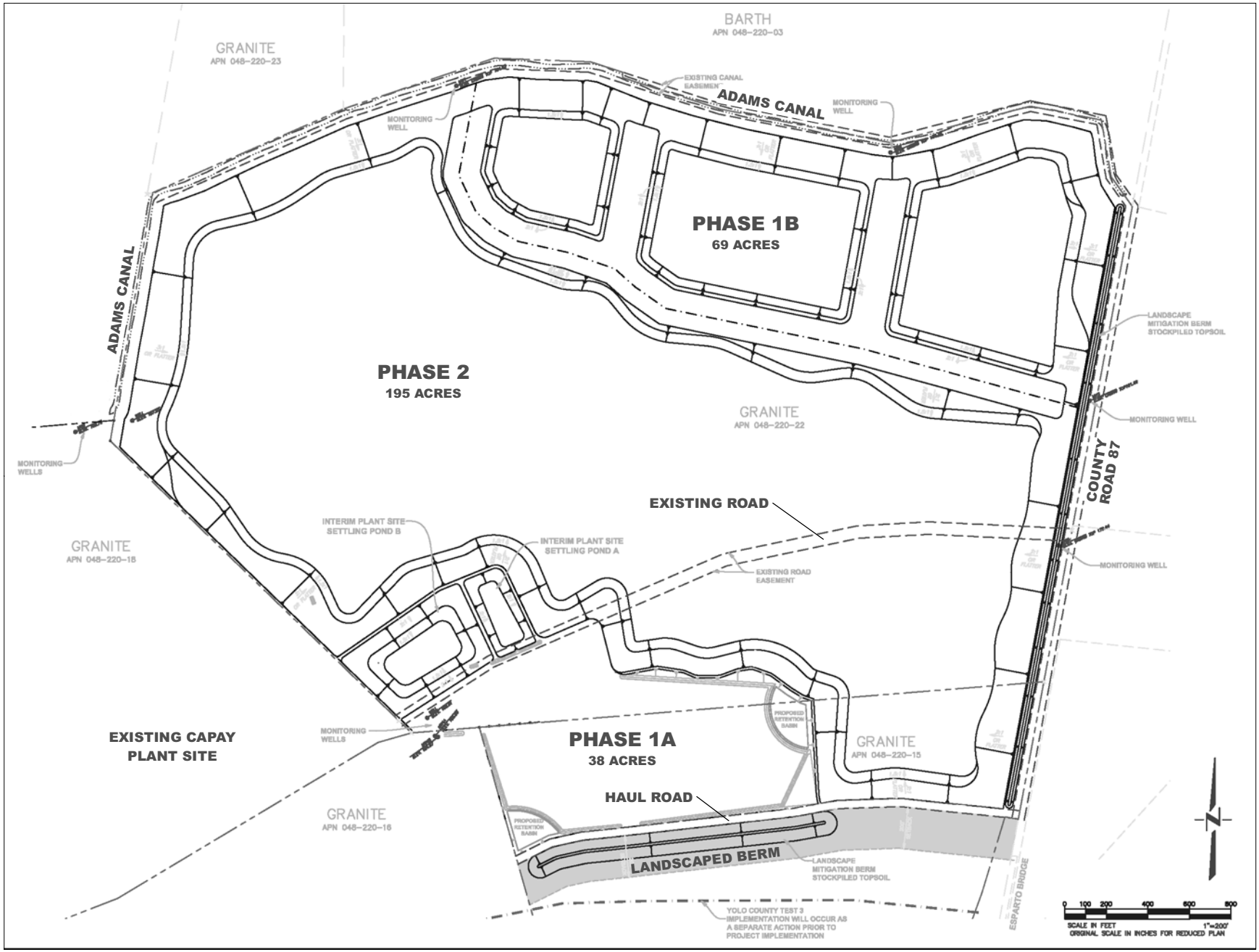

FIGURE 3-3

DRAFT EIR
Granite Esparto Mining and Reclamation Project
PROPOSED MINING PLAN

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The mining process would begin by clearing vegetation (including agricultural crops, orchard trees, and grasses/ruderal plants) from the surface. Following vegetation removal, the topsoil (i.e., A-horizon) would be removed using scrapers and bulldozers (in accordance with OCSMO Section10-4.432). The topsoil would be stored in segregated stockpiles within the project site for future use in reclamation activities. Shallow subsoils consisting of B-horizon and C-horizon soils would be excavated and stockpiled. The stockpiling locations would include the area of proposed landscaped berms along the southern and eastern margins of the mining area. Following removal of the overburden materials, sand and gravel deposits would be extracted and transported to the processing plant site by a conveyor system. The raw aggregate may be stockpiled at the plant site prior to processing. The stockpiles of topsoil, overburden, and aggregate would be managed in compliance with the requirements of the OCSMO Sections10-4.433 and 10-4.414 (stockpiles not to exceed 40 feet in height, with slopes no steeper than 2:1 [horizontal:vertical] and must be seeded with a vegetative cover to prevent erosion and leaching). When mining depths extend to below the groundwater level, the saturated aggregate deposits would be excavated using a dragline, excavator, or dredge. The sediments excavated with dragline or excavator would be temporarily stockpiled adjacent to the active mining area to allow dewatering prior to transport (by conveyor) to the processing plant located at the southern margin of the mining area. Excavated sediments removed by dredge would be dewatered in an attached cyclone system and loaded directly onto conveyors.

The mining plan proposes that the slopes of the margins of the mining area would generally be excavated to maintain a maximum gradient of 2:1 for depths above the groundwater table and 5 feet below the expected low groundwater level (in compliance with OCSMO Section10-4.431). The slopes that extend to depths greater than 5 feet below the low groundwater level would be maintained at a maximum gradient of 1.5:1. The mining slopes adjacent to the West Adams Canal and extending 500 linear feet south along County Road 87 from the canal would be no steeper than 3:1 to depths less than 5 feet below the groundwater level and 1.5:1 or 2:1 below that depth. In accordance with OCSMO Section 10-4.429, proposed mining areas located less than 1,000 feet from public rights-of-way, public recreation areas, and/or off-site residences (i.e., along County Road 87 and along the bank of Cache Creek) would be shielded (to reduce the potential for noise, dust, and visual impacts) from those areas by landscaped berms. Any stockpiles located within 500 feet of these areas would also be shielded by berms.

To comply with SMRO Section 10-5.510, open wet pits would be fenced with a 42 inch minimum, four strand barbed wire fence or the equivalent (e.g., welded square “hog” fencing), prior to the commencement of excavation, during excavation, and during reclamation. Fencing may enclose the property of which mining is a part, the mining site, or both. In addition, signs would be installed at the project site boundaries and access road, indicating that the excavation area is restricted. Additional security (e.g., gates with protected locks and wing fences to prevent drive-arounds) would be provided at all vehicular routes. The fencing and gates would be maintained throughout the mining and reclamation period after complete. The deed would require the landowner to maintain fences.

Phasing of Mining

The project proposes a phased mining plan, which is summarized in Table 3-2. Figure 3-4 shows the estimated mining sequence and schedule.

Table 3-2 Proposed Phasing Plan

Mining Phase	Predicted Mining Period	Mining Area (acres)	Maximum Mining Depth (feet)	Aggregate Quantity (mined tons)	Mining Duration (years)
1A	2010 – 2011	38	26 – 75	536,000	1
1B	2011 – 2019	69	75	7,800,000	8
2	2019 – 2030	195	75	21,700,000	21

Phase 1A consists of 38 acres from which 536,000 tons would be excavated to a depth ranging between 26 feet and 75 feet. This phase would be completed in approximately one year at which time the plant and two settling ponds would be located in the Phase 1 area. Under this initial phase, the first mining would occur to construct two interim settling ponds in the area northwest of the proposed processing plant site in the southern portion of the project site (Figure 3-2). The aggregate excavated from the first pond would be stockpiled in the area proposed for the processing plant. As the second deeper pond is excavated, the stockpiled aggregate would be processed and the wash water would be discharged to the first pond and fines would begin to fill the pond. The second pond would be constructed to receive fines from processing of the next mining phase.

Phase 1B consists of 69 acres from which 7.8 million tons would be excavated to a depth of 75 feet. In this next phase, the mining operations would shift to the northern portion of the site where three mining cells or ponds would be excavated. The three ponds would be separated by north-south trending levees. Reclamation of Phase 1B would be ongoing for the remainder of the mine life. Each of the three ponds would be sequentially reclaimed by filling the ponds with wash fines generated by processing of aggregate mined over the course of the project and the placement of topsoil and overburden material. The filling would create a final reclamation surface at least 5 feet above the groundwater table but lower than the existing and surrounding ground surface.

Phase 2 consists of 195 acres from which 21.7 million tons would be excavated to a maximum depth of 75 feet. This would be the main excavation pit for this operation and mining of this phase would last about 21 years. This final phase of mining would be reclaimed to create a large lake with shorelines dedicated to formation of shoreline habitat. The shoreline would be enhanced with varying sideslope gradients. Along the northern portions adjacent to the West Adams Canal and northeastern margins of the lake adjacent to County Road 87, the gradient from a depth of 5 vertical feet below the low groundwater to the top of the slope would be 3:1 or flatter; along the remaining margins, the slope would be 2:1 or flatter. Wash fines from materials processed during Phase 2 mining operations would be contained in Phase 1B settling ponds.

The remaining 11 acres of the 313-acre mining site (not included in these three proposed phased areas) are comprised of haul roads and setback areas.

PROCESSING OPERATIONS

The proposed project includes construction and operation of a rock processing plant. The plant would be located in the south central portion of the Phase 1A mining area (Figure 3-2). This location is adjacent to and east of the existing Granite plant site. The plant site would be placed on a structural fill pad raised approximately 4 feet above the existing ground surface. Runoff from the plant site would be collected in shallow ditches at the perimeter of the Phase 1A area. The ditches would flow to retention basins in the north, southwest, and northeastern portions of the Phase 1A area. Upon the completion of mining, the processing plant and all associated structures would be removed and the processing area would be reclaimed to dry pasture/open space uses.

Rock Processing

The plant would consist of three rock crushers, four rock screens, parking areas, and a stockpile area for both raw aggregate and processed aggregate products. The raw aggregate would be generally transferred to the plant from the mining areas via electric-powered conveyor. When mining occurs proximate to the plant site (e.g. mining in the Phase 1A area) aggregate would be transferred to the plant by loaders, scrapers, or trucks. In addition to the crushing and screening equipment, the plant would include an aggregate washing operation.

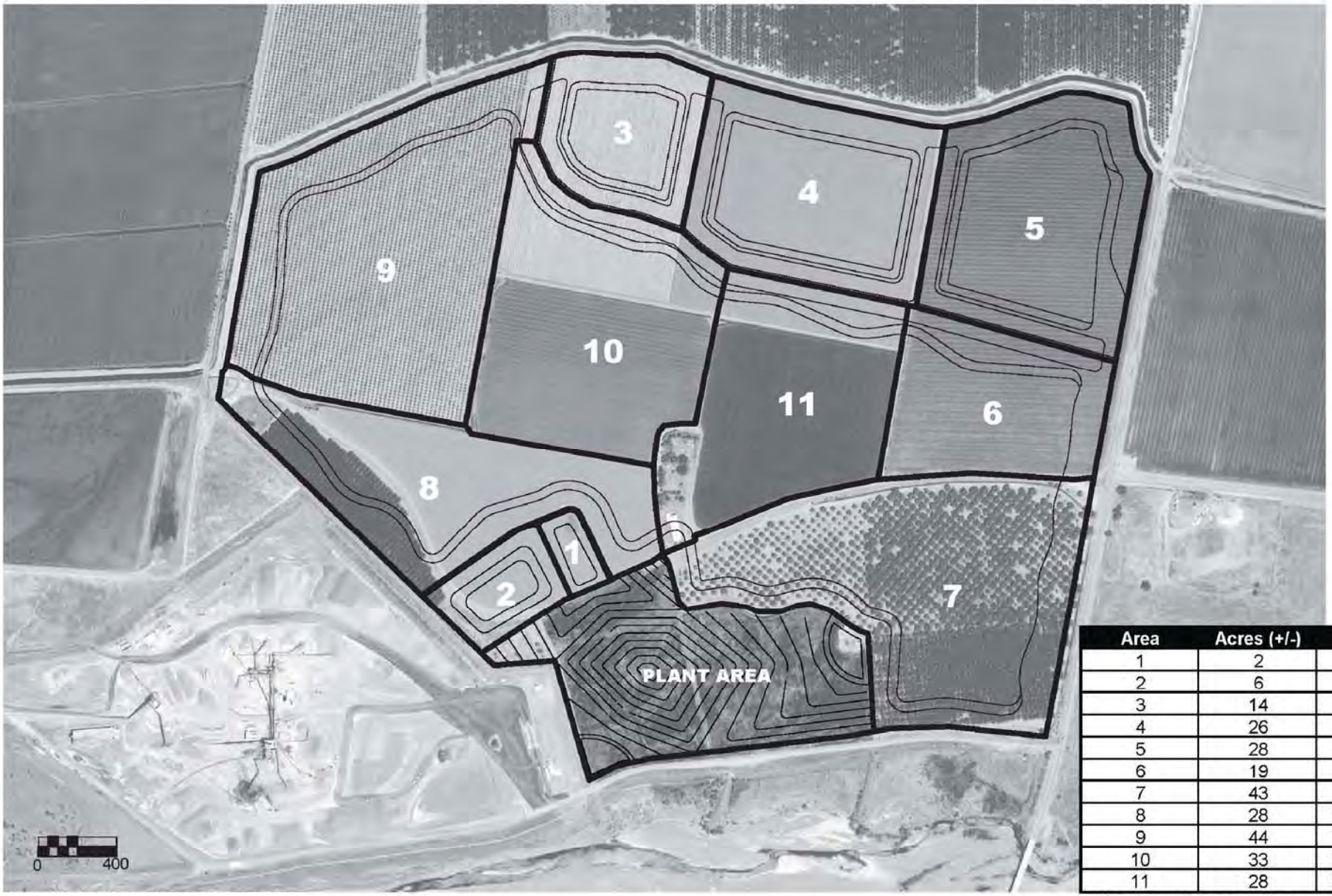
Following crushing and screening, the aggregate would be washed. The wash water would be sent to a water clarifier to facilitate the removal of suspended sediment (i.e., fines). The clarifier would create two process streams: a wash-fines slurry and clean processed water. The fines slurry would be transferred by pipeline to one of several settling ponds to allow further dewatering of the slurry. The clean-water stream would be stored in a 50,000-gallon tank at the plant site. This water would be reused for washing aggregate. The source of the wash water would initially be well water from on-site wells. The processed water-reuse supply would need to be supplemented (due to losses by evaporation and water in the fines slurry) at a rate of approximately 1,100 gallons per minute (286 acre-feet per year). The “make-up” water would be supplied by on-site wells.

Plant Operations

The proposed plant would have the capacity to process approximately 1.2 million tons of aggregate per year when operated on a single shift which would accommodate the requested 20 percent exceedance, in any given year. All of the processing equipment would be electrically powered with an expected power demand of 1,500 kilowatts per hour or 12,000 kilowatts per day. The Applicant has indicated that the power supply would be provided by Pacific Gas and Electric Company (PG&E).

Normal hours of operations are proposed between 6:00 am and 6:00 pm, Monday through Friday (12 hours per day). Extended operations are proposed as needed to meet specific customer or project demands. Although the frequency of nighttime operations would be variable, the Applicant estimates that the number of nights requiring plant operations under the proposal is expected to be about 40 nights per year.

The mining, processing, and reclamation activities would employ 12 to 15 full-time workers.



Area	Acres (+/-)	Active*
1	2	Year 1
2	6	Year 1
3	14	Year 1-2
4	26	Year 2-4
5	28	Year 4-7
6	19	Year 7-9
7	43	Year 9-14
8	28	Year 14-17
9	44	Year 17-22
10	33	Year 22-26
11	28	Year 26-30

*Schedule subject to change due to market fluctuations

Source: Granite Construction, Inc. Sept. 2009

FIGURE 3-4

DRAFT EIR
Granite Esparto Mining and Reclamation Project
ESTIMATED MINING SEQUENCE AND SCHEDULE

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Mobile Equipment

The mining and reclamation operations would require the use of a variety of mobile construction equipment and vehicles. Most of the equipment would be diesel powered. The soil and overburden removal and dry aggregate mining equipment would include loaders, scrapers, and bulldozer(s). Wet mining operation would also require some combination of a drag line, excavator, and/or floating dredge. The equipment for reclamation activities would include bulldozer(s), motor grader, and scrapers. Mobile processing operation equipment would consist of front-end loaders. Maintenance activities would require motor grader, service truck(s), and a backhoe/tractor.

Site Access and Truck Route

The primary access to the plant would be an existing, two-lane paved driveway/haul road that intersects County Road 87 at the eastern margin of the project site. Traffic would enter the processing plant to load aggregate products and then proceed from the plant to the existing Granite processing plant located adjacent to and west of the project site. The plant site would share the existing truck scales at the existing plant site. Therefore, all trucks picking up aggregate products would be routed to the truck scales. Following weighing, the trucks would exit the project site traveling eastward on the driveway/haul road to its intersection with County Road 87.

At peak production the project would generate up to 384 additional truck trips and 15 additional employee trips per day. All truck traffic, with the exception of local deliveries to Esparto, Capay, and Madison, is proposed to travel east on the plant driveway, north on County Road 87, east on County Road 19 and either north or south on Interstate (I-) 505. These requirements are currently enforced by the Applicant for the adjacent Capay Facility.

RECLAMATION PLAN

The project proposes a reclamation plan (Figure 3-5) that includes reclamation of the mining areas to three basic types of reclaimed uses: open space/dry pasture, agriculture, and an open lake with shoreline habitat. The proposed reclamation phases are described below.

Phasing of Reclamation

The Phase 1A mining area (about 38 acres), which includes the processing plant and stockpiling areas (about 30 acres) and settling ponds (about 8 acres), would be reclaimed to open space/dry pasture use. The reclamation would create a lowered reclamation surface as the result of a combination of excavation and partial refilling of mined areas. In conformance with SMRO Section 10-5.516, the elevation of the surface would be raised to a height at least 5 feet above the highest groundwater level. Groundwater levels would be monitored in compliance with OCSMO Section 10-4.417 throughout the site with a network of six monitoring wells.

The reclaimed surface would slope toward three retention basins located in the north, southwest, and northeastern portions of the Phase 1A area. The basins would capture runoff from the reclaimed areas. The interior surface would be surrounded by 2:1 or flatter perimeter slopes. The reclaimed surface would be covered with A-horizon soil over C-horizon soil and vegetated by seeding with a dry pasture mix. The reclaimed surface margins would be planted with scattered clusters of oak woodland trees and shrubs.

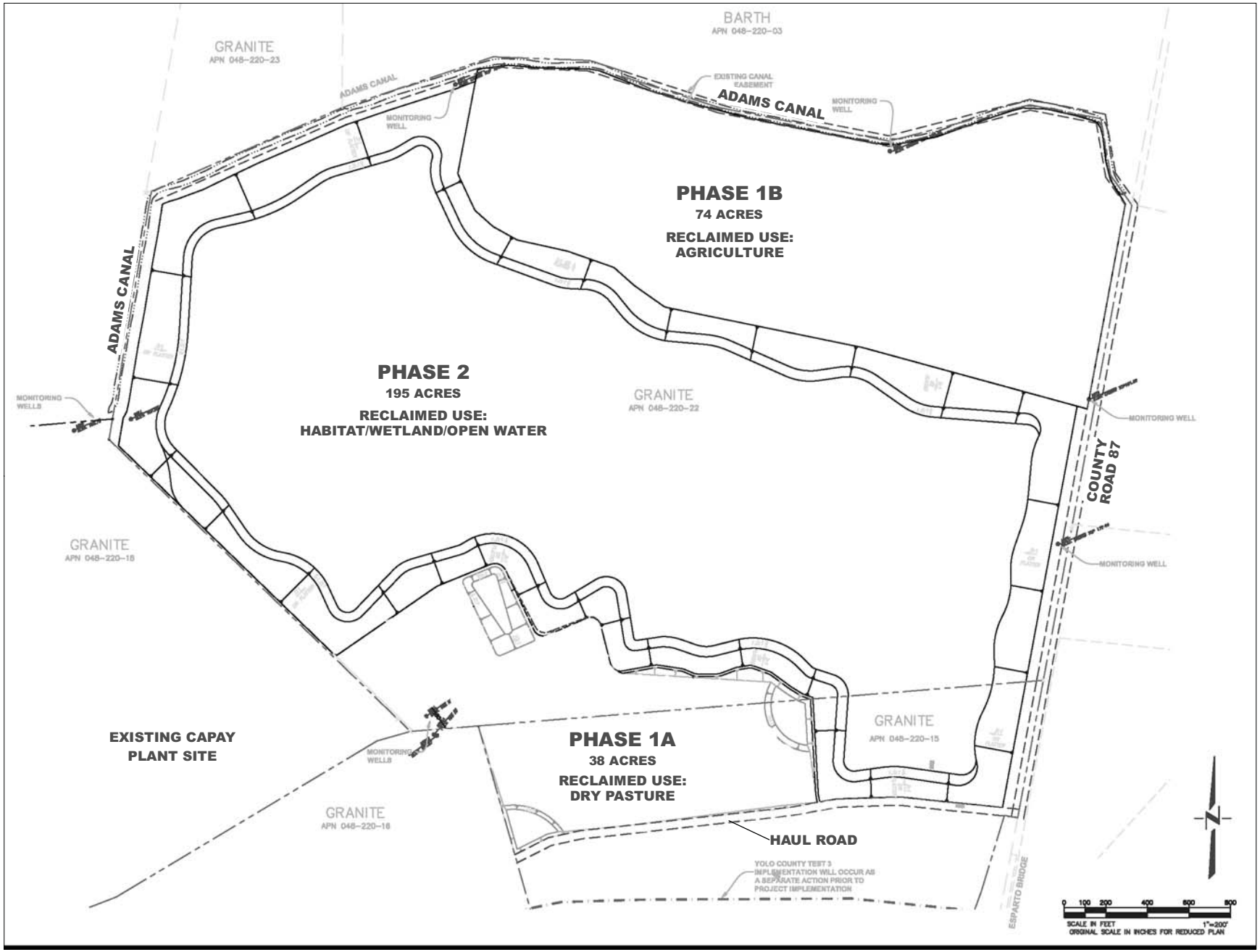

FIGURE 3-5

DRAFT EIR
Granite Esparto Mining and Reclamation Project
PROPOSED RECLAMATION PLAN

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The Phase 1B area (about 74 acres) in the northern portion of the mining area would be reclaimed to agriculture. The mining excavations would be filled with processing fines, overburden materials, and topsoil. The surface of the mining area interior would be raised by filling to an elevation at least 5 feet above the anticipated high groundwater level. The upper portion of the fill would include a minimum 36-inch thickness of C-horizon soils mantled by a minimum of 20 inches of A-horizon soils. The surface would be graded to slope gently toward a retention basin in the northeastern corner of the Phase 1B area. The surface would be tilled and prepared for row-crop production. The slopes surrounding the lowered surface would have slopes with gradient of 2:1 or flatter. The slopes would be covered with soil and vegetated with native grasses and shrubs.

The largest mining area, Phase 2 (about 201 acres including the 6 acres for setbacks and haul roads during operations), would be reclaimed to an open-water lake surrounded by vegetated slopes. The open lake would occupy approximately 157 acres; the additional 44 acres would be habitat and wetlands. However, the area of the lake would vary with the seasonal fluctuations in the lake level (controlled primarily by groundwater levels). The perimeter of the lake at expected high-lake levels would be approximately 13,300 feet. A portion of the lake perimeter along the northern and northeastern margins would have a slope of 3:1 or flatter; the remainder of the perimeter would have a slope of 2:1 or flatter. The area of the lake margin that is expected to provide shallow water habitat is about 5.2 acres. The margins of the lake would be planted with tules, cattails, and rushes. The slopes above the shallow habitat would be planted with riparian woodland trees and shrubs. The higher portions of the slopes would be planted with oak woodland trees and shrubs.

STREAMBANK STABILIZATION PLAN

In support of the proposed mining plan, which includes a request to mine within 200 feet of the existing Cache Creek streambank and within the streamway influence boundary (OCSMP Section 10-4.429), the Applicant requests approval of a FHDP to implement an SSP (Cunningham Engineering Corporation 2007) for the north bank of Cache Creek adjacent to the southern margin of the proposed mining area.

The stabilization project would be about 2,300 feet in length and would extend from the Esparto Bridge (i.e., County Road 87 crossing of Cache Creek) to the downstream (eastern) end of the completed Granite Capay bank stabilization project. The proposed creek bank would provide a smooth transition from the wider channel width upstream to the narrow width defined by the Esparto Bridge abutments. The design of the new bank, in terms of flood protection (height), keyway depth and rock size is consistent with the design of the adjacent existing Granite Capay site. In addition, the project would establish a terrace between the new creek bank and the existing haul road to the north using fill obtained during the mining process. The height of the terrace would be set to the same elevation as the top of the new creek bank; i.e., the 100–year flood elevation. The bank would be vegetated with non-invasive annual grassland species for the first one or two years, followed by a native grassland seed mix. The terrace would be planted with upland species more suited to the drier location farther away from the creek. The proposed creek bank and terrace are consistent with the CCRMP and re-establishment of the natural geomorphic processes.

The Applicant proposes to implement a segment of the Test 3 line established in the Cache Creek Improvement Program (CCIP) of the Cache Creek Resource Management Plan (CCRMP) and to conform with the requirements of the ICMMO. Implementation of the Test 3 boundary and other channel restoration activities promoted in the CCRMP already have CEQA certification through the CCRMP EIR (Yolo County 2002b) and general permits described below:

- U.S. Army Corps of Engineers (USACE) Regional General Permit (Number 58) for the CCRMP/CCIP which authorizes in-stream activities under Section 404 of the Clean Water Act (CWA).
- California Department of Fish and Game Stream or Lake Alteration Agreement (Number 315-97) for the CCRMP/CCIP which authorizes, under Section 1601/1603 of the Fish and Game Code, the projects contemplated in the CCIP.
- Central Valley Regional Water Quality Control Board Section 401 Water Quality Certification for the CCRMP/CCIP which authorizes instream activities under Section 401 of the Clean Water Act.
- Assembly Bill (AB) 297 (1999), AB 1984 (2004), and AB 646 (2007) which enacted/amended Section 2715.5 of the Public Resources Code (PRC) establishing the CCRMP as the equivalent of a Reclamation Plan for the California Department of Conservation (DOC) for the purposes of satisfying the Surface Mining and Reclamation Act (SMARA).
- County of Yolo FHDP process and implementation of the Title 10, Chapter 3, of the County Code entitled, ICMMO.

The term of the most recent USACE Regional Permit expired in May 2009 and the County is seeking renewal of the permit. If the general permit is not renewed, the implementation of the proposed SSP may occur under other existing nationwide permits (e.g. streambank stabilization; habitat restoration), or potentially the project could require an individual project permit.

SSP implementation requires Yolo County approval of a FHDP (ICMMO Section 10-3.209). The plan proposes to contour the slope along the creek bank to a gradient of 3:1. A keyway or slot filled with cobbles (natural and/or broken concrete) would be placed (extending to a depth of 5 feet below the ground surface) at the toe of the slope. Additionally, a cobble revetment would be placed from the toe of the slope to a height of 5 feet above the toe. Willow or mule tail cuttings would be planted within the revetment. The top of the slope would be flat and approximately 12 feet wide. The north-facing slope adjacent to the mining/reclamation areas of the project site would be graded to a gradient of the 2:1. In compliance with ICMMO Section 10.3-409, construction operation hours would be restricted to 8:00 am to 5:00 pm unless emergency conditions require otherwise as determined by the Director. The slopes would be revegetated with a combination of native grasses and shrubs.

In compliance with the ICMMO, the existing bank protection was approved following review of the stabilization by the Cache Creek Technical Advisory Committee (TAC). The TAC would also need to review the proposed project for consistency with the ICMMO and approval of a FHDP.

DEVELOPMENT AGREEMENT

The project would require a Development Agreement for a Long-Term Off-Channel Mining Permit that memorializes among other things, the Applicant's commitment to implementation of the CCAP, payment of CCAP tonnage fees, and implementation of net gains discussed below.

OTHER APPROVALS

Relinquishment of Granite Woodland Site Allocation – the Off-Channel Mining Plan (OCMP) recognizes an annual "allocation" of 420,000 tons mined (370,000 tons sold) at the Granite

Woodland site (115 acres, comprised of APNs: 025-300-005, 025-300-032, and 025-350-009). As a part of the subject project, the Applicant proposes to "relinquish" this allocation and requests that it be applied to the proposed Granite Esparto project tonnage. When combined with other unallocated tonnage from the OCMP (505,859 tons mined [500,000 tons sold]), the total tonnage substantively covers the base tonnage requested by the Applicant for the subject proposal thus ensuring that it falls under the OCMP EIR cumulative analysis (see analysis in Section 5.1, Cumulative Effects).

Demolition Permit – Implementation of the project will require County issuance of a demolition permit to allow for removal of the existing residence and associated outbuildings including a detached garage, a storage shed, and a workshop.

3.5 NET GAIN BENEFITS IDENTIFIED BY THE APPLICANT

Yolo County has established a requirement that all mining and reclamation projects proposed within the CCAP provide specific public benefit or "net gains" for Yolo County. The OCSMO Section 10-4.502 sets the general guidance for meeting the net gain requirements and specifies that the project application includes:

(i) A proposal for providing a net gain to the County, as determined by the following criteria:

(1) Reclamation to multiple or conjunctive uses,

(2) Enhancement and enrichment of existing resources, and/or

(3) Restoration of past sites where the requirements of reclamation at the time no longer meet community expectations in terms of good stewardship of the land.

Net gain may include participation in an established program whose goals are consistent with the above criteria. Benefits included in the technical studies submitted with each application which serve as mitigation measures for potentially adverse environmental impacts created by the project may not be included as a net gain.

As the net gain for this project, under Criteria 3, the Applicant proposes to dedicate the Granite Woodland ("Reiff") property to Yolo County. The property is approximately 115 acres, comprised of APNs: 025-300-005, 025-300-032, and 025-350-009. The property is situated at the east end of the OCMP boundary (Figure 1-1), and is currently permitted for the extraction of approximately 420,000 tons per year. Sand and gravel mining has occurred in the past, but the mining activities have been idle since 1999. The property is subject to the provisions of an Interim Management Plan (IMP), requirements for submittal of Mining Operation Annual Reports to the California Department of Conservation, and annual inspections by YCPRD. The interior of the idle mining area is flat and surrounded by gentle slopes. A levee separates the mining area from the active channel of Cache Creek.

Reclamation is on-going and approximately 55 acres remain disturbed (YCPRD 2007). The central, disturbed area have limited soil cover and supports ruderal vegetation. The margins of the disturbed area are vegetated by grasses and a few trees. A portion of the site includes riparian habitat along the active channel of Cache Creek. The IMP requires that the site is kept free of trash, maintenance of all fencing and landscaping, and maintenance of slopes at gradients of a maximum of 3:1. In 1996, high flows in Cache Creek breached the levee. Following review and approval by the Cache Creek TAC, the owner performed repairs to the creek bank. The TAC recommended that the breach in the levee be left open to allow periodic inundation by creek flows and deposition of sediment within the idle mining area. The recommendation would promote the development of

improved planting medium for riparian plants. Prior to transfer of the property to the County, reclamation would be completed. The reclamation would be performed under the requirements of a reclamation plan approved by the County in 1980.

This EIR evaluates the project's potential net gain and any associated environmental impacts. The review will contribute information to assist the County in determining if the intentions of the OCSMO, ICMMO, and SMRO are met by the proposal.

3.6 JURISDICTIONAL/PERMITTING AGENCIES

The following public entities and agencies may require review or may have jurisdiction or permitting authority over the project:

- U.S. Army Corps of Engineers
- U.S. Fish and Wildlife Service
- California Department of Fish and Game
- State Water Resources Control Board
- Central Valley Flood Protection Board
- Regional Water Quality Control Board, Central Valley Region
- Yolo County Parks and Resources Department
- Yolo-Solano Air Quality Management District

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Chapter 4.0
ENVIRONMENTAL ANALYSIS

4.1 INTRODUCTION TO ENVIRONMENTAL ANALYSIS

This chapter of the Environmental Impact Report (EIR) contains an evaluation of the potentially significant impacts of the project in accordance with the requirements of the California Environmental Quality Act (CEQA) and Guidelines, as amended.

The analysis in this chapter tiers from the impact analyses in the Off-Channel Mining Plan (OCMP) Program EIR (SCH# 1996012035) (Yolo County 1996b), which covered the entire planning area. The OCMP EIR evaluated potential impacts associated with mining and reclamation of about 216 million tons of aggregate on 2,887 acres within a 23,634-acre off-channel planning area over a 50-year time horizon. The OCMP planning area comprises an area 14.5 miles long and about 1.5 miles wide along Cache Creek from Capay Dam and downstream to an area near the town of Yolo and includes the project site.

The OCMP policies contain objectives, goals, actions, and performance standards. The OCMP performance standards have been adopted as requirements contained in the Yolo County Off-Channel Surface Mining Ordinance (OCSMO) and Surface Mining Reclamation Ordinance (SMRO). All mining operators within the OCMP area must comply with these requirements to reduce or eliminate environmental impacts. Most of the potential impacts associated with the project would be mitigated by complying with the requirements of the OCSMO and SMRO. The individual resource sections list relevant ordinances and address how project compliance would reduce or avoid potential impacts on the environment. Section 4.11, Land Use, contains tables outlining how the project would comply with applicable state and local ordinances.

Additionally, this chapter relies on the impact analyses in the Cache Creek Resource Management Plan (CCRMP) Program EIR (Yolo County 2002a) and the Supplemental EIR (SCH# 2002062034) (Yolo County 2002b), which address impacts associated with stabilization and restoration of Cache Creek. The CCRMP plan area consists of 4,956 acres in-stream.

Because the requested tonnage and proposed in-channel improvements were previously analyzed in these earlier EIRs, the impact analysis and mitigation measures for issues such as cumulative traffic, air quality, and noise analysis from those earlier documents remain applicable. However, mining at this specific site was not addressed at a project level; hence that is the focus of the subject EIR. Areas of impact such as aesthetics, loss of agricultural land, etc., while anticipated outcomes, are treated as new impacts herein.

FORMAT OF ISSUE SECTIONS

Sections in this chapter describe the following for each environmental issue area: 1) the focus of the analysis; 2) a summary of the environmental setting as it relates to the specific issue; in many instances, the setting is summarized from the OCMP EIR and/or CCRMP EIRs as applicable, and updated where appropriate; 3) an evaluation of project-specific impacts and mitigation measures; and 4) a determination of the level of significance of an impact after all mitigation measures are implemented. Sections are organized in the following way:

- Each issue section has three parts: Introduction, Setting, and Impacts and Mitigation Measures.
  - The Introduction describes the purpose of the section and identifies the main issues of analysis.
  - The Setting summarizes the existing conditions at the regional, sub-regional, and local level, and consistency of the proposed project with the applicable requirements of relevant regulations, policies, or ordinances for that resource issue. Section 4.11, Land Use, contains a consistency analysis for the Title 10: OCSMO, SMRO, and In-Channel Maintenance Mining Ordinance, Title 8: Land Development and Zoning, and other policies.
  - The Impacts and Mitigation Measures subsection identifies the significance criteria for impacts and then analyzes the impacts associated with the project based on those criteria. Mitigation measures are included to reduce or avoid any impacts that have been determined to be significant.

DETERMINATION OF SIGNIFICANCE

Three categories of impacts are used for the project-specific impacts within this report: less than significant, significant, and significant and unavoidable. Each impact and mitigation measure(s) is numbered consecutively for individual sections of the document.

Impact 4.1-1:

The paragraph identifies the potential impact, its cause, and its significance prior to mitigation.

Mitigation Measure 4.1-1:

Project-specific mitigation is identified to reduce the impact, to the degree possible.

Explanatory text is included, as necessary, to describe how the mitigation measure would be implemented or how effective it is expected to be.

A conclusion statement is made identifying the level of significance following mitigation, such as:

Implementation of these mitigation measures would reduce this impact to a less-than-significant level.

Or, if the impact is less than significant, then the following applies:

Mitigation Measure 4.1-1:

None required.

Less than Significant. The impact would cause no substantial change in the existing or projected future environment, so no mitigation is required. Or, while there may be some associated impact, it is not significant or is acceptable as defined by the applicable thresholds of significance.

Significant. Under CEQA, a significant impact is defined as a substantial, or potentially substantial, adverse change in the environment. CEQA Guidelines Section 15064 states that this determination is made by the decision-making body and is based on scientific and factual data, to the extent possible.

Significant and Unavoidable. An impact is considered to significant and unavoidable when it results in a substantial effect on the environment for which no mitigation has been identified as feasible to reduce the impact to a less-than-significant level, or mitigation is identified but it is acknowledged that it will not fully mitigate the impact thus leaving residual impacts. Mitigation may be required to reduce the impact as much as possible, even if the impact would remain significant and unavoidable.

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4.2 AESTHETICS

INTRODUCTION

This section analyzes the project impacts on visual resources. The setting describes the existing visual character of the project site and vicinity. Project-specific impacts are identified and appropriate mitigation measures are recommended to reduce significant impacts to a less-than-significant level.

SETTING

Description of Regional Environment

As described in the OCMP EIR (Yolo County 1996b), the regional environment consists of flat agricultural lands surrounded by rolling hills in the distance. Cache Creek meanders through the valley. Row crops, orchards, vineyards and fallow fields are connected by a series of small, paved public and private roads paralleled by telephone and electricity poles. Urban development and structures are generally limited to the small towns of Capay, Esparto, and Madison. However, the region is also sparsely populated by farm dwellings with various accessory and agricultural structures.

Description of Local Environment

The project site is located north of the town of Esparto, just north of State Route (SR) 16. County Road 87, travelling north from the town of Esparto, borders the project site to the East. The site is situated on the north bank of Cache Creek, a wide, dry, gravel riverbed that is covered with native and non-native scrub vegetation. The site is primarily located on flat agricultural land with typical visual features such as regularly spaced orchards and a few fields of row crops. The site contains a single-family residence and related structures and a small grazing area. The tallest structures on the site are the telephone poles and wires connecting to the residence. Several tall trees surrounding the residential portion of the site are taller than these structures.

During a site visit on April 13, 2009, viewpoints that show the project site and surrounding locations were chosen for analysis. Table 4.2-1 describes the viewpoint locations shown in Figure 4.2-1.

Six photographs that represent typical views and visual conditions of the project site were chosen from the 17 viewpoint locations for inclusion in the setting description. These are shown in Figures 4.2-2 through 4.2-7. Figure 4.2-7 shows an existing berm with mining operations that is approximately 22 feet high according to design plans.

Table 4.2-1 Viewpoint Locations

Viewpoint Number	Viewing Location	Direction Facing	Visible Project Site Elements
1	SR 16 pull out	NE	Project elements obscured by distance
2	Yolo Avenue (Road 87) and Woodland Avenue	N	Project elements obscured by vegetation
3	Road 87 and Road 20x	N	Project elements obscured by vegetation
4	Road 87 and Haag Farm	N	Project elements fully or partially obscured by vegetation
5	Road 87 and Farm property	N	Project elements partially obscured by vegetation
6	Road 19B due south of farm house	NW	Open view of SE corner of property
7	Road 87 and south side of bridge	N / NW / W	Open view of SE corner of property
8	Road 87 and Capay Canyon Road	SW	Project elements obscured by vegetation
9	Canal and Road 87	SW	Open view of NE corner of property
11	Road 19A next to a private barn	W	Project elements fully or partially obscured by vegetation and distance
12	Middle of property	W	Project elements fully or partially obscured by vegetation and distance
13	Road 19A next to private property 1/4 mile east of Road 87	W	Open view of eastern property boundary, fields, and farmhouse
14	Corner of Road 87 and Road 19A	SW / W / NW	Open view of eastern property boundary, fields, and farmhouse
15	Corner of Road 87 and Granite property entrance	NW	Open view of SE corner of project site and orchards
16	SW corner of Granite's office property	NE	Open view of SW corner of property and fields
17	NW Corner of Granite's office	NE	Open view of SW corner of property and fields

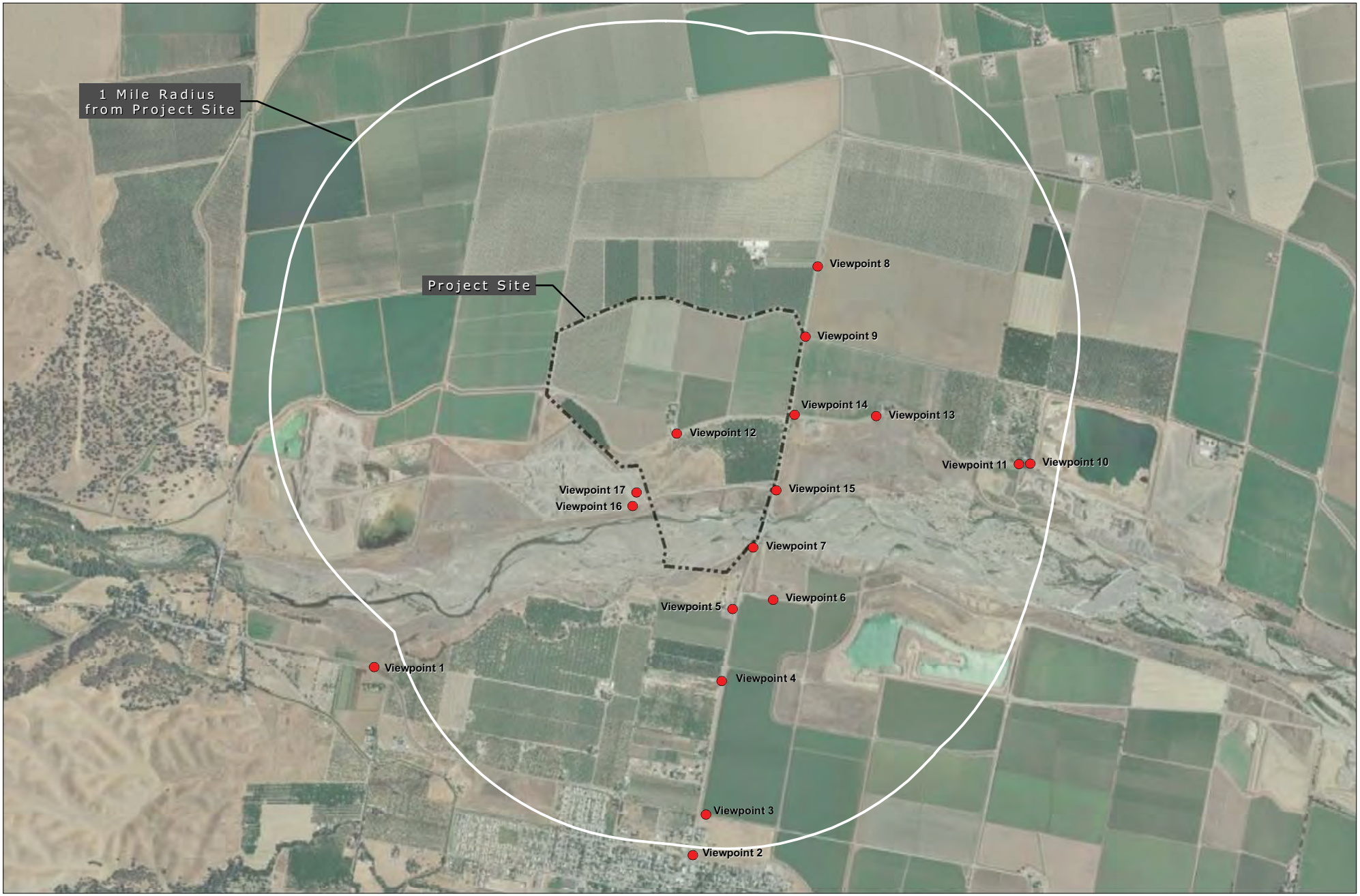

FIGURE 4.2-1

DRAFT EIR
Granite Esparto Mining and Reclamation Project
VIEWPOINT LOCATIONS

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Figure 4.2-2 View of residential property from Road 19B facing northwest (Viewpoint 6)

Figure 4.2-3 View of residential property from Road 87 at the northeast corner of the site facing southwest (Viewpoint 9)

Figure 4.2-4 View of residential property from Road 19A approximately 0.25 mile east of Road 87 facing southwest (Viewpoint 13)

Figure 4.2-5 View from intersection of Road 87 and Road 19A facing west (Viewpoint 14)

Figure 4.2-6 View from corner of Road 87 and Granite's Mining entrance facing northwest (Viewpoint 15)

Figure 4.2-7 Example of berm at existing mining location (Viewpoint 16)

REGULATORY SETTING

Federal

There are no applicable federal regarding aesthetics for the project.

State

Surface Mining and Reclamation Act

Project Consistency with Surface Mining and Reclamation Act (SMARA) is discussed in Section 4.11, Land Use.

Local

Project consistency with county mining regulations is discussed in Section 4.11, Land Use. Project consistency with General Plan policies, Cache Creek Area Plan (CCAP), and other applicable regulations is discussed below.

Scenic Highways

Yolo County has no designated federal or State Scenic Highways. A portion of SR 16 (from approximately the town of Capay at County Road 85, north to the County line) is identified by California Department of Transportation (Caltrans) as "eligible" for designation as a State Scenic Highway but is not officially designated (Caltrans 2008). Yolo County has, however, designated SR 16 from the Colusa County line to Capay as a local scenic highway (Yolo County2009).

At the nearest point, SR 16 is approximately 0.8 mile from the existing plant and approximately 0.3 mile from the existing quarry site. From those distances, the existing plant is only briefly visible given the road speed (55 miles per hour) and because the quarry site is obscured by the existing landscaped berm.

2030 Countywide General Plan (2009)

The County's 2030 Countywide General Plan (Yolo County 2009a) contains nine policies relevant to the project:

Land Use and Community Character Element

- **CC-1.2.** Preserve and enhance the rural landscape as an important scenic feature of the County.

Mining is an allowed use within the CCAP area and is considered a compatible use within the rural landscape. The project would restore the landscape as described in the Habitat Restoration and Landscape Visual Screening Plan in Appendix C. Therefore, the project would be consistent with this policy.

- **CC-1.3.** Protect the rural night sky as an important scenic feature to the greatest feasible extent where lighting is needed.

The project would introduce new permanent sources of lighting and glare from the rock processing plant and other improvements. All lighting would be arranged and controlled so as not to illuminate public rights-of-way or adjacent properties (OCSMO Section 10-4.420). To the extent such lighting may result in off-site glare, this is reduced by standard conditions of approval for Yolo County, which require lighting to be shielded and/or screened from causing glare on off-site properties and roadways. Therefore, the project would be consistent with this policy.

- **CC-1.8.** Screen visually obtrusive activities and facilities such as infrastructure and utility facilities, storage yards, outdoor parking and display areas along highways, freeways, roads, and trails.

The project proposes landscape berms along the southern and eastern property boundaries to screen the new processing facility and mining operations. Therefore, the project would be consistent with this policy.

- **CC-1.12.** Preserve and enhance the scenic quality of the County's rural roadway system. Prohibit projects and activities that would obscure, detract from, or negatively affect the quality of views from designated scenic roadways or scenic highways.

The project proposes landscape berms along the southern and eastern property boundaries to screen the new processing facility and mining operations such that they would not detract from or negatively affect the quality of views from designated scenic roadways or scenic highways. Therefore, the project would be consistent with this policy.

- **CC-1.15.** The following features shall be protected and preserved along designated scenic roadways and routes, except where there are health and safety concerns:
  - Trees and other natural or unique vegetation
  - Landforms and natural or unique features
  - Views and vistas
  - Historic structures (where feasible), including buildings, bridges and signs

Other than existing orchard trees, there are no trees on the project site. In addition, there are no other natural or unique vegetation, landforms, natural or unique features, or historic structures on the project site. The proposed project would not disturb the scenic roadway because it proposes landscaped berms; and, because the new processing facility would not be highly visible from SR 16. Therefore, the project would be consistent with this policy.

- **CC-1.17.** Existing trees and vegetation and natural landforms along scenic roadways and routes shall be retained to the greatest feasible extent. Landscaping shall be required to enhance scenic qualities and/or screen unsightly views and shall emphasize the use of native plants and habitat restoration to the extent possible. Removal of trees, particularly those with scenic and/or historic value, shall be generally prohibited along the roadway or route.

The project proposes landscape berms along the southern and eastern property boundaries to screen unsightly views. In addition, the proposed landscaping would emphasize the use of native plants and habitat restoration to the extent possible. Therefore, the project would be consistent with this policy.

- **CC-4.29.** Provide appropriate buffers or barriers between incompatible residential and non-residential uses. The last-built use shall be responsible for design and construction (and/or other related costs) of the buffer/barrier.

The project does not propose construction near any residences. Therefore, the project would be consistent with this policy.

- **CC-4.32.** Emphasize the use of regionally native drought tolerant plants for landscaping where appropriate.

The project would use native drought tolerant plants for landscaping the berms as described in the Habitat Restoration and Landscape Visual Screening Plan in Appendix C. Therefore, the project would be consistent with this policy.

Conservation and Open Space Element

- **CO-3.1.** Encourage the production and conservation of mineral resources, balanced by the consideration of important social values, including recreation, water, wildlife, agriculture, aesthetics, flood control, and other environmental factors.

The project is consistent with the CCAP. This EIR analyzes and mitigates for the environmental impacts, including water, wildlife, agriculture, aesthetics, and other environmental factors associated with the project as discussed in the Impacts and Mitigation subsection. Therefore, the project would be consistent with this policy.

IMPACTS AND MITIGATION MEASURES

Standards of Significance

The four significance criteria for this analysis were developed from criteria presented in the CEQA Guidelines, Appendix G and the 2030 Countywide General Plan Final EIR (Yolo County 2009b). The criterion from Appendix G not listed below was previously addressed in the Initial Study, which indicated the project would have a less-than-significant impact on the aesthetic resources described in that criterion (see Impacts Found Less-than-Significant in Initial Study, below). Other significance criteria from the General Plan were not included because they are not relevant. The proposed project would result in a significant impact on aesthetics if it would:

- Block a unique or locally-significant scenic area, vista, or view.
- Result in substantial impacts to scenic resources along a scenic corridor.
- Substantially degrade the existing visual character or quality of the site and its surroundings.
- Substantially conflict with applicable plans, policies, and regulations where such conflict would result in an adverse physical change in the environment.

Methodology

Impacts were evaluated based upon three basic elements that compose the aesthetic setting: visual quality, viewer sensitivity, and viewer exposure or distance. Potential impacts are also compared to state, regional, and local plans.

Impacts Found Less than Significant in Initial Study

Block a unique or locally-significant scenic area, vista, or view. The land use is allowed within the CCAP area and anticipated on this particular site. The project is located in a rural and relatively sparsely populated area of central Yolo County within a broad, alluvial valley that supports extensive agriculture and aggregate mining operations. The site is not visible from any unique or locally-significant scenic area, vista, or view designated by Yolo County or any other public entity. Therefore, the project would not block a unique or locally-significant scenic area, vista, or view.

Substantial impacts to scenic resources along a scenic corridor. There are no State-designated Scenic Highways within the project vicinity (Caltrans 2008). Locally-designated scenic corridor SR 16 is situated within 0.8 mile from the closest point on the project boundary. However, SR 16 is located more than 1.25 miles from any part of the site that is visible from that route. At this distance, the impacts on scenic resources would not be substantial because only a small fraction (the upper third) of the proposed facility would be seen for a very brief period of time (approximately 45 seconds) from a typical passenger vehicle traveling 55 miles per hour. Therefore, the project would not result in substantial impacts to scenic resources along a scenic corridor.

Potential to create a new source of substantial light or glare which would adversely affect day or nighttime views outside of identified growth areas. The project would introduce new permanent sources of lighting and glare from the rock processing plant and other improvements. All lighting would be arranged and controlled so as not to illuminate public rights-of-way or adjacent properties (OCSMO, Section 10-4.420). To the extent such lighting may result in off-site glare, this can be reduced by standard conditions of approval for Yolo County, which require lighting to be shielded and/or screened from causing glare on off-site properties and roadways.

Analysis of Potentially Significant Impacts

Impact 4.2-1:

The project could substantially change the existing visual character or quality of the site and its surroundings. (Significant but Mitigable)

The flat landscape of the region limits the distance from which the project can be seen to approximately 1 mile or less. As shown on Figure 4.2-1, publicly accessible areas within this 1 mile radius include County Road 87, SR 16, portions of the town of Esparto, and several smaller public roads north of the town. In addition, there is private farmland sparsely populated with farm dwellings to the north and south of Cache Creek. Most views of the project site are completely obscured by the agricultural vegetation and nearby private structures. There are no publicly or privately accessible viewpoints to the north of the project site that have unobstructed or partially obstructed views. The only viewpoints that have open views of the project site are from the current mining operations north of Cache Creek. Based on a site visit conducted April 13, 2009, unobstructed or partially obstructed views of the project site are limited to County Road 87 within approximately 0.25 mile of the

project site to the north and south, and private roads and residences within 0.5 mile of the project site.

The project proposes to change the existing visual character from an agricultural setting to a mining operation. During construction and mining operations, changes would include the incremental removal of agricultural vegetation and soils to be replaced with piles of aggregate and soils as well as excavated pits. This would change the visual character of the project site; however this change is planned for the area as evidenced by the SGR zoning.

Section 10-4.429(c) of the OCSMO establishes minimum setbacks for various components of a mining operation. Because the mining area lies closer than 1,000 feet from County Road 87, screening is required. The project includes 6-foothigh vegetated berms along the eastern boundary of the project site to screen views of the mining area along County Road 87. The project also includes 18 to 24 foot high vegetated berms along the southern boundary of the mining area in order to provide screening and noise attenuation for the plant operations (see Figure 3-3). Between these two berms there is a gap of about 800 linear feet at the property's southeastern corner. To be consistent with the ordinance requirements, a landscaped buffer must be constructed through the gap.

OCSMO Section10-5.508 requires any slope above groundwater be seeded with a drought-tolerant, weed-free mix of native and non-native grasses. The project's southern berms would be planted with cottonwood trees that would grow to heights of at least 10 to 12 feet within two years, and could grow to be taller. The eastern berm would be planted with low-growing shrubs that grow 6 to 12 feet in height. After planting, the berm would blend the existing landscape and would not degrade the visual character of the area. By proposing the construction and planting of this berm, the project application would be consistent with SMRO Section 10-5.502, which requires the use and placement of berms and vegetative screens be incorporated into mine reclamation plans as appropriate.

After mining, most of the site is proposed to be reclaimed as a large lake. A portion of the property would be returned to agriculture and grazing. While the lake would change the existing visual setting, the large level water surface of would be compatible with the agricultural setting, and therefore not degrade the aesthetic character.

Mitigation Measure 4.2-1:

The Applicant shall revise and submit the Habitat Restoration and Landscape Visual Screening Plan for County approval to establish a landscape buffer in the 800-foot gap area between the proposed easterly and southerly berms. The buffer may include berming. All planting shall be installed within two years of approval of the project. The plan shall demonstrate that full screening can be achieved prior to mining closer than 1,000 feet from County Road 87, based tree species, box size, and typical rate of growth.

Impact 4.2-2:

The project could substantially conflict with applicable plans, policies and regulations where such conflict would result in an adverse physical change in the environment. (Less than Significant)

This project has been analyzed for consistency with applicable plans, policies, and regulations using the following framework:

- Consistency with SMARA – Addressed in Section 4.11, Land Use (particularly Tables 4.11-3 through 4.11-7).
- Consistency with other applicable state plans, policies and regulations – Addressed in each section of Chapter 4.0 of this EIR, as applicable to the subject matter.
- Consistency with the County General Plan – Addressed in each section of Chapter 4.0 of this EIR, as applicable to the subject matter.
- Consistency with the CCAP – Addressed in each section of Chapter 4.0 of this EIR, as applicable to the subject matter. The analysis examines consistency with both the OCMP and the CCRMP (including the CCIP) as applicable.
- Consistency with the County Zoning Ordinance (Title 8 of the County Code) – Addressed in Section 4.11, Land Use (particularly Tables 4.11-3 through 4.11-7).
- Consistency with the County ICMMO (Title 10, Chapter 3 of the County Code) – Addressed in Section 4.11, Land Use (particularly Tables 4.11-3 through 4.11-7).
- Consistency with the County OCSMO (Title 10, Chapter 4 of the County Code) – Addressed in Section 4.11, Land Use (particularly Tables 4.11-3 through 4.11-7).
- Consistency with the County SMRO (Title 10, Chapter 5 of the County Code) – Addressed in Section 4.11, Land Use (particularly Tables 4.11-3 through 4.11-7).

Assuming approval of the requested approvals, including identified mitigation measures and standard conditions of approval, the project is considered consistent with these plans, policies, and regulations pursuant to CEQA. Specifically regarding Aesthetics, implementation of Mitigation Measure 4.2-1 would ensure that the project would be consistent with OCSMO Section 10-4.429(c) by requiring that a landscaped buffer be constructed through an area of approximately 800 linear feet at the property's southeastern corner.

Mitigation Measure 4.2-2:

None required.

4.3 AGRICULTURE

INTRODUCTION

This section analyzes the project impacts on agriculture and agricultural lands. The setting describes the existing conditions of the project site and vicinity. Project-specific impacts are identified and appropriate mitigation measures are recommended to reduce significant impacts to a less-than-significant level.

SETTING

Description of Regional Environment

The region's primary land use and economic base is a highly productive agricultural industry due to valuable agricultural soils. Farmlands are generally flat land planted with row crops, orchards, and vineyards cultivated on Prime and Non-Prime soils. Prime agricultural lands are generally considered to consist of lands that do not present significant limitations to agricultural production; these lands have the highest agricultural value. Non-Prime agricultural lands are farmlands within agricultural areas that are limited by less-than-optimal soil conditions, drainage problems, incompatible adjacent land uses, or a combination of these factors.

Section 4.5 of the OCMP EIR (Yolo County 1996b) contains a description of the agricultural industry and soil qualities of the region, as well as a description of the Williamson Act and County ordinances related to farmland preservation and mining. This description is found on pages 4.5-1 through 4.5-13 in Section 4.5 of the OCMP EIR.

Description of Local Environment

Local Soils

Overburden

The project sites are presently covered with soils largely used for agricultural purposes. Five types of soils were identified during a detailed soils evaluation study conducted by LFR, Inc. (2007). The local soils vary in thickness from 10 to 60 inches, having originated from recent depositional processes along Cache Creek.

Soil types are categorized by their physical and chemical properties, which are controlled by climate, topography, biologic activity, parent material, and time. Soils are also classified (Capability Class) as to their limitations for plant growth and use. The detailed site-soil evaluation of that portion of the site that is in agricultural use (approximately 280 acres) indicates that the soils present have similar properties with a typical top soil (A-horizon), sub-soil (B-horizon), and parent material (C-horizon). The C-horizon represents the sand and gravel deposits that would be mined for the project. Yolo County considers A- and B-horizons "overburden" and would be removed, segregated, temporarily stockpiled, and reconstructed during site reclamation. The approximate acreage and percentages of the existing soil types are listed in Table 4.3-1. A full-soil units description is contained within the Soils Evaluation Report and Reclamation Plan (LFR 2007).

Table 4.3-1 Existing Soil Types

Soil Series Name	Capability Class	Acreage	Percent
Yolo silt loam (Ya)	Class I/II	81.2	29
Brentwood silty loam (BrA)	Class I/II	22.4	8
Loamy alluvial land (Lm)	Class IV	47.6	17
Riverwash (Rh)	Class IV	22.4	8
Soboba gravelly sandy loam (Sn)	Class IV	106.4	38
Total		280	100

Notes:

Ya and BrA soil units are assumed to be considered Prime Farmland, if irrigated.

* = Prime Farmland according to Table Y of the NRCS Web Soil Survey Report for Yolo County, California

Capability Classifications as Defined by NRCS:

- Class I. Soils with few limitations that restrict their use.
- Class II. Soils have moderate limitations that reduce the choice of plants, require very careful management or both.
- Class IV. Soils have very severe limitations that reduce the choice of plants and require careful management or both.

Source: National Resource and Conservation Service

The Yolo soil is predominantly silt loam with a thick platy structure on the surface over a loamy or sandy loam subsoil. These soils are mostly homogeneous and well drained. The material below the sandy loam subsoil is a very gravelly loam sand. The Brentwood soil is similar to the Yolo except the soil textures are primarily clay loams. Yolo and Brentwood series soils are Class I/II soils and are suitable for row crops, orchards, and/or vineyards (LFR 2007).

Soils in Soboba series are highly stratified, gravelly, and shallow. These soils have low-water holding capacities and low-soil fertility, suitable for irrigated grain crops, pasture, wildlife, or recreation. The loamy alluvial soils are mixed, stratified alluvium which contain sand, loam, or silt loam surface soil above sand and gravel material. The low-water holding capacity and shallow soils in the series can limit productivity. Under careful management, however, loamy alluvial soils could support alfalfa, tomatoes, or almonds. Soboba, loamy alluvial, and Riverwash soils are classified as Class IV soils.

Local Agricultural Activity

The primary crops grown within the project area are row crops. There are also almond and walnut orchards in the southeastern portion of the property next to County Road 87 and south of County Road 19A. In 2008, the row crops produced wheat; in 2009, tomatoes and bell pepper were grown; and in 2010, sunflowers are planned.

Williamson Act Contracts

Under a Williamson Act contract, the landowner and the County agree that the land will be maintained in agricultural production for a period of not less than 10 years. The 10-year period renews every year unless a Notice of Non-Renewal is filed by either the landowner or the County. Nine years after a Notice of Non-Renewal is filed, the contract expires. The northern parcel (Assessor's Parcel Number [APN] 048-220-022) is the only parcel currently under a Williamson Act contract. The County entered into a Land Use Contract – Agreement No. 69-331, Resolution No. 69-246 (Yolo County 1970) with the owners in 1969; and the agreement has been renewed

every 10 years since. A Notice of Non-Renewal was filed November 25, 2003, for this parcel (Yolo County 2003). The contract will expire February 10, 2013. A full discussion of issues relating to the Williamson Act and conservation of agriculture in the County is found in the OCMP EIR (Section 4.5).

Important Farmlands Inventory

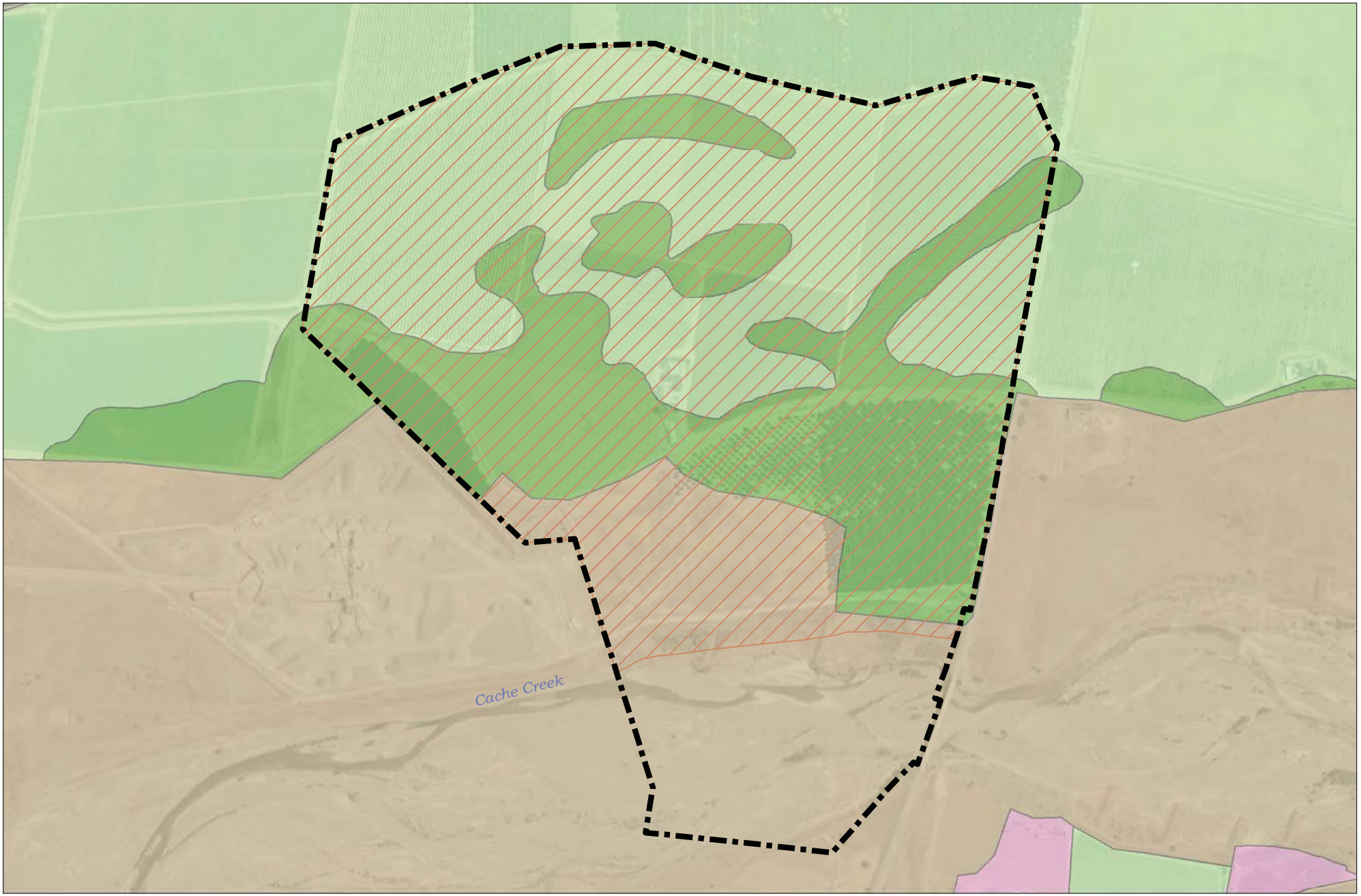
Based on data from the Natural Resource Conservation Service (NRCS), the California Department of Conservation has developed a Farmland Mapping and Monitoring Program (FMMP) to classify agricultural soil types based on their ability to sustain agricultural crops. The Important Farmlands Inventory (IFI) classifies farmland with the intent of identifying those valuable lands that should be preserved in agriculture. For purposes of this report, the definition of "Prime Farmland" is based on the FMMP. According to information obtained in Title 10, Chapter 5 of the Yolo County Code, Prime Farmland in Yolo County is qualified as either Class I or Class II soils (as classified by the NRCS). Additional information regarding Prime Farmland is included in the Yolo County Code.

Prime Farmland has soil that has the best combination of physical and chemical characteristics for the production of crops. Within the project site, approximately 154 acres are mapped by FMMP as Prime Farmland and are mostly located in the northern portion of the project site. Farmland of Statewide Importance is similar to Prime Farmland, but with minor shortcomings; none of this mapping category is mapped at the project site. Unique Farmland is land of lesser quality soils used for the production of specific, high-economic value crops. Approximately 133 acres of Unique Farmland are mapped within the central portion of the project site. Farmland of Local Importance is land of importance to the local agricultural economy as determined by the County Board of Supervisors. Grazing Land is land on which the existing vegetation is best suited for the grazing or browsing of livestock (FMMP 2009). The southern portion (103 acres) of the project site is classified as Other Land. This mapping unit encompasses the grassland area and areas within and adjacent to the active floodplain of Cache Creek. Table 4.3-2 and Figure 4.3-1 identify the amounts of land on the project site falling into the categories used in the FMMP.

Table 4.3-2 Important Farmland Inventory Categorization of Project

Category	Acres
Prime Farmland	154
Farmland of Statewide Importance	0
Unique Farmland	133
Farmland of Local Importance	0
Grazing Land	0
Other Land	103
Total	390

The OCMP EIR contains a full description of the FMMP guidelines and process and the Yolo County and Williamson Act definitions of Prime versus Non-Prime lands.



MAP LOCATION

CALIFORNIA

LEGEND

Project Site

Mining Plan Boundary

FARMLAND DESIGNATIONS

Farmland of Local Importance

Prime Farmland

Unique Farmland

Other Land

N

0 500 1,000 2,000

FEET

FIGURE 4.3-1

DRAFT EIR

Granite Esparto Mining and Reclamation Project

FARMLAND

ENTRIX | Environmental and Natural Resource Management Consultants

REGULATORY SETTING

Federal

There are no federal regulations applicable to agricultural resources within the project area.

State

SMARA

Project consistency with SMARA is discussed in Section 4.11, Land Use.

California Land Conservation Act of 1965 (Williamson Act)

Commonly referred to as the Williamson Act, the California Land Conservation Act of 1965 (Government Code Sections 51200–51297.4, as amended) enables local governments to enter into contracts with private landowners that restrict specific parcels of land to agricultural or related open-space use. In return, these landowners receive property tax assessments that are much lower than normal because they are based upon farming and open-space uses rather than the property's full market value. Local governments receive an annual subvention of forgone property tax revenues from the State via the Open Space Subvention Act of 1971 (Government Code Sections 16140–16154).[1] The Act establishes principles of compatibility for uses allowed on lands under contract. Generally, uses are compatible if they will not significantly compromise the long-term productive agricultural capability, displace or impair current or reasonably foreseeable agricultural operations, or result in removal of adjacent contracted land from agricultural open-space uses. Mineral extraction can be found to be compatible if it can be found that the underlying commitment to preserve Prime agricultural land use on Prime Farmland and open-space use on Non-Prime agricultural land.

The consistency of the project with the requirements of the Williamson Act is analyzed in Impact 4.3-2.

Local

Project consistency with county mining regulations is discussed in Section 4.11, Land Use. Project consistency with the General Plan, CCAP, and other applicable regulations is discussed below.

2030 Countywide General Plan (2009)

The County's 2030 Countywide General Plan (Yolo County 2009a) contains six policies relevant to the project:

Land Use and Community Character Element

- LU-2.5. Vigorously conserve, preserve, and enhance the productivity of the agricultural lands in areas outside of adopted community growth boundaries and outside of city soils.

[1] Note: State Williamson Act subventions have been suspended for the current State budget and may be permanently eliminated. As a result, at the time of this writing, the entire program is being re-examined at both the local and state level

Surface mining is an allowed use in the Agriculture (AG) designation. The project would be consistent with the land use designation and the zoning designation (see Impact 4.11-2 in Section 4.11, Land Use).

Agriculture and Economic Development Element

- **AG-1.4.** Prohibit land use activities that are not compatible within agriculturally designated areas.

Surface mining is an allowed use in the Agriculture (AG) designation. The project would be consistent with the land use designation and the zoning designation (see Impact 4.11-2 in Section 4.11, Land Use).

- **AG-1.5.** Strongly discourage the conversion of agricultural land for other uses. No lands shall be considered for redesignation from Agricultural or Open Space to another land use designation unless all of the following findings can be made:

  A. There is a public need or net community benefit derived from the conversion of the land that outweighs the need to protect the land for long-term agricultural use.

  B. There are no feasible alternative locations for the proposed project that are either designated for non-agricultural land uses or are less productive agricultural lands.

  C. The use would not have a significant adverse effect on existing or potential agricultural production on surrounding lands designated Agriculture.

Surface mining is an allowed use in the Agriculture (AG) designation. The project would be consistent with the land use designation and the zoning designation (see Impact 4.11-2 in Section 4.11, Land Use).

- **AG-1.6.** Continue to mitigate at a ratio of no less than 1:1 the conversion of farm land and/or the conversion of land designated or zoned for agriculture, to urban uses.

The project does not propose the conversion of farm land to urban uses. Therefore, the project would be consistent with this policy.

Conservation and Open Space Element

- **CO-3.1.** Encourage the production and conservation of mineral resources, balanced by the consideration of important social values, including recreation, water, wildlife, agriculture, aesthetics, flood control, and other environmental factors.

This EIR analyzes and mitigates for the environmental impacts, including water, wildlife, agriculture, aesthetics, and other environmental factors associated with the project as discussed in the Impacts and Mitigation subsection. Therefore, the project would be consistent with this policy.

- **CO-8.5.** Promote GHG emission reductions by supporting carbon efficient farming methods (e.g. methane capture systems, no-till farming, crop rotation, cover cropping); installation of renewable energy technologies; protection of grasslands, open space, oak woodlands, riparian forest and farmlands from conversion to other uses; and development of energy-efficient structures.

The project would result in increased greenhouse gas (GHG) emissions. The mitigation of GHG emissions is discussed in Section 4.6, Climate Change. With proposed mitigation, the project would be consistent with this policy.

Off-Channel Mining Plan

The County's OCMP contains the following actions relevant to the project:

Chapter 5: Agricultural Resources Element

- **Action 5.4-4.** Ensure that all proposed surface mining operations that include reclamation to agricultural uses comply with the requirements of the Land Conservation (Williamson) Act and the State Mining and Geology Board Reclamation Regulations.

Project consistency with the requirements of the Williamson Act is analyzed in Impact 4.3-2, below.

- **Action 5.4-6.** Encourage off-channel excavation operations to access additional aggregate reserves through the use of wet pits, in order to minimize the amount of agricultural land disturbed by mining.

This project requests to mine a new site, however this site has been identified in the CCAP for future mining. The project proposes to mine this location to a depth of 75 feet below which the applicant has indicated is a large clay layer that cannot be feasibly excavated at this time. Therefore the application is consistent with this Action.

- **Action 5.4-7.** Ensure maximum public benefit from reclaimed uses by establishing the following priority to be used to assess the adequacy of the proposed reclamation plans:
  1. Reclamation to viable agricultural uses
  2. Reclamation to native habitat
  3. Reclamation to recreation/open space uses
  4. Reclamation to other uses

The project proposes to reclaim 74 acres to prime agriculture, 44 acres to native habitat and wetlands, 38 acres to open space, 157 acres in the form of a lake, and no acres to other uses. Since most of the land (approximately 195 acres) would be reclaimed to recreation/open space which is a third priority land use for reclamation, the project may be inconsistent with the priorities established in this action. See Impact 4.3-3 for further discussion.

Land Development and Zoning, Title 8

The County's Land Development and Zoning Code contains two sections relevant to the project:

- **8-2.408 Land Use Contracts (h).** Williamson Act contracts may be nonrenewed, rescinded or cancelled only as provided in the Williamson Act (Government Code section 51200 et. seq.);

Uses that are allowed, whether as permitted, accessory or conditional uses, in the A-P zone shall be restricted to those uses deemed compatible with contracted land under the Williamson Act. Compatible uses shall meet all applicable findings required in Section 51238 et. seq. of the Williamson Act. Any amendment to the lists of permitted accessory or conditional uses in the A-P zone shall be an amendment of the uses allowed under then existing and subsequently approved Williamson Act contracts without further notice.

Implementation of Mitigation Measure 4.3-2 would make the project consistent with this section. Therefore, the project would be consistent with this code.

The County's Zoning Ordinance (Title 8 Chapter 2 of the County Code) includes the Agricultural Conservation Easement Program (ACEP) which is relevant for discussion relative to the project.

- **8-2.2416.3.** (a) Agricultural mitigation shall be required for conversion or change from agricultural use to a predominantly non-agricultural use prior to, or concurrent with, approval of a zone change from agricultural to nonagricultural zoning permit, or other discretionary or ministerial by the County. A minimum of one (1) acre of agricultural land shall be preserved for each acre of agricultural land changed to a nonagricultural use or zoning classification (1:1 ratio). Application for a zone change, permit, or other discretionary or ministerial approval shall include provisions for agricultural mitigation land. The following uses shall be exempt from this requirement: affordable housing projects, where a majority of the units are affordable to very low or low income households, as defined in Title 8, Chapter 9 of the Yolo County Code (Inclusionary Housing Requirements); public uses such as parks, schools, and cultural institutions; and habitat restoration and or conversion to habitat, so long as the restoration or conversion is incidental to or ancillary to the agricultural uses on the parcel. Finally, also exempt are projects involving the conversion of land to nonagricultural use to the extent that agricultural mitigation was provided in accordance with then-existing County requirements prior to the effective date of this ordinance on at least a 1:1 basis.

The project requests to perform mineral extraction on agricultural land zoned A-P and A-1. The ACEP applies to agricultural land that is converted to "predominantly non-agricultural use." The code defines predominantly non-agricultural use as any use not defined or listed as a principal, accessory, and conditional use allowed in agricultural zones. Commercial mining is allowed in A-P and A-1 zones with a Conditional Use Permit. The project is applying for a Conditional Use Permit and if the use permit is approved, the project would not be considered a conversion to non-agricultural use. Conversion of agricultural land within the CCAP boundary is addresses instead under Section 10-5.525 of the Surface Mining Reclamation Ordinance (SMRO) discussed below. However since this the ACEP was the more recently adopted ordinance, it is the County's policy to merge some components of the two ordinances in order to ensure consistency in procedures and implementation. This is discussed further below under Impact 4.3-1.

IMPACTS AND MITIGATION MEASURES

Standards of Significance

The two significance criteria for this analysis were developed from criteria presented in the CEQA Guidelines Appendix G and the 2030 Countywide General Plan Final EIR (Yolo County 2009b). The criterion from Appendix G not listed below was previously addressed in the Initial Study, which indicated the project would have a less-than-significant impact on agricultural resources described in that criterion (see Impacts Found Less-than-Significant in Initial Study, below). Other significance

criteria from the General Plan were not included because they are not relevant. The proposed project would result in a significant impact on agricultural resources if it would:

- Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, as shown on the maps prepared pursuant to the FMMP of the California Resources Agency, to a non-agricultural use.
- Conflict with existing zoning for an agricultural use or a Williamson Act contract.
- Result in permanent conversion of agricultural soils to non-agricultural use.
- Cause the loss of agricultural productivity or crop values that represent a major proportion of the County's production or value of crops.
- Substantially conflict with applicable plans, policies and regulations where such conflict would result in an adverse physical change in the environment.

Impacts Found Less than Significant in Initial Study

Involve other changes in the existing environment which could result in conversion of Farmland to non-agricultural use. Although the project would convert about 154 acres of Prime Farmland to non-agricultural uses, it would not involve other changes to the environment which could result in the conversion of Farmland to a non-agricultural use. Therefore, this impact is less than significant.

Analysis of Potentially Significant Impacts

Impact 4.3-1:

The project would remove 154 acres of Prime Farmland and 133 acres of Unique Farmland from production for up to 30 years, permanently converting 95 acres of "Prime" and 118 acres of "Unique" to non-agricultural use. (Significant and Unavoidable)

The project would remove 154 acres of Prime Farmland and 133 acres of Unique Farmland, as mapped by the FMMP, from production for up to 30 years during mining operations. Approximately 213 acres would be permanently converted to non-agricultural use, comprised of 95 acres of Prime and 118 acres of Unique. The three long term settling ponds (74 acres) in the northeast corner of the project site (Phase 1B) would return to agricultural use. Each of the three ponds would be sequentially reclaimed with the settlement of wash fines and the placement of topsoil and overburden material for the remainder of the mine life. Therefore, this land would be put back into agricultural production after the proposed 30–year mining period as a part of the proposed reclamation. The OCMP EIR evaluated the impact of the temporary loss of agricultural productivity due to disturbance by mining. The ordinance requires that phasing plans be structured to minimize the area of disturbed agricultural lands during each phase of mining. The applicant has satisfied these criteria by proposing a phased mining plan (see Table 3-2 and Figure 3.4 in the Project Description for the estimated mining sequence and schedule) and by permanently reclaiming 74 acres back to agricultural use at the end of the mining period. The findings adopted for the OCMP concluded that minimizing impacts through phasing was the only available feasible mitigation of the impact and the

impact was determined to remain significant and unavoidable after mitigation implementation. Therefore, no additional mitigation for this interim loss is required.

The SMRO (Section 10-5.525) establishes 1:1 offset requirements to compensate for permanent loss of Prime Farmland. Allowable off-sets are defined as including any one or more of the following: conversion of Non-Prime lands to Prime conditions; placement of conservation easements on at-risk Prime lands; and provision of irrigation to Non-Prime lands that would otherwise be Prime.

The project would result in the loss of 154 acres of Prime Farmland, and the application does not specify a specific proposal for meeting the SMRO requirements for 1:1 offset. Therefore, mitigation for the conversion of 154 acres needs to be established. Since adoption of the SMRO, Yolo County has adopted the Yolo County Agricultural Conservation Easement Program (County Code Title 8 Chapter 2 Section 8-2.2416). Similar to the provisions of the SMRO which applies only within the CCAP area, the AECP requires set-asides for loss of agricultural land throughout the entire unincorporated County. Key differences between the two ordinances are that the AECP requires protection of all set-aside areas through a conservation easement, the mitigation land must be of like or better quality, and set-aside is required to be located within 2 to 4 miles of the project site. The County has determined that the provisions of the SMRO apply to this project but that permanent protection must be provided under any of the three available options, and quality must be equal or better. Under Appendix G of the CEQA Guidelines, the loss of Unique Farmland is also considered an impact. The Applicant must mitigate for this loss pursuant to the AECP.

Mitigation Measure 4.3-1a:

Prior to the commencement of mining activity on any Prime Farmlands, and subject to approval by the County, the Applicant shall demonstrate to the Yolo County Parks and Resources Department (YCPRD) that an offset at a ratio of 1:1 for each acre (154 acres) of Prime Farmland permanently converted to non-agricultural use by implementation of the project has been established pursuant to the requirements of Section 10-5.525 of the County Code, that permanent protection for any of the three options, and that the quality of set-aside farmland must be equal or better than the acreage converted.

Mitigation Measure 4.3-1b:

Prior to commencement of mining activity on any Unique Farmland, and subject to approval by the County, the Applicant shall demonstrate to the YCPRD that an offset at a ratio of 1:1 for each acre (133 acres) of Unique Farmland permanently converted to non-agricultural use by implementation of the project has been established pursuant to the requirements of Section 8-2.2416 of the County Code.

Even with implementation of Mitigation Measures 4.3-1a and 4.3-1b, there would be a net loss of agricultural land; therefore impacts on the conversion of farmlands to non-agricultural use would remain significant and unavoidable.

Impact 4.3-2:

The project would conflict with an existing Williamson Act contract. (Significant but Mitigable)

APN: 048-220-022 (totaling 286.4 acres) is covered by Williamson Act contract (Agreement No. 69-331; Resolution No. 69-246). A Notice of Non-Renewal for this contract was filed November 25, 2003, which would end the contract on February 10, 2013. The project proposes to begin mining at the Phase 1A mining area which includes a portion of the contracted parcel. SMARA does allow approval of mineral extraction on contracted land if the finding can be made that the underlying commitment to preserve Prime agricultural land use on Prime Farmland and open-space use on Non-Prime agricultural land is not significantly impaired. Because the contracted parcel contains 273 acres of Prime Farmland, the proposed reclamation would have to result in at least that same amount in order to make this finding. As proposed the reclamation plan identifies reclamation back to 74 acres of Prime Farmland on APN: 048-220-022. Therefore, until such time as the contract on this property is expired, the applicant may not impact (e.g. excavate) any more Prime Farmland on APN: 048-220-022 than is proposed for reclamation to Prime agriculture.

Mitigation Measure 4.3-2:

Until such time as the Williamson Act contract on APN: 048-220-002 has expired, the Applicant cannot impact more than 74 acres of Prime Farmland on that parcel.

Implementation of Mitigation Measure 4.3-2 would reduce the impacts on lands under a Williamson Act contract to less than significant.

Impact 4.3-3:

The project could substantially conflict with applicable plans, policies, and regulations where such conflict would result in an adverse physical change in the environment. (Less than Significant)

This project has been analyzed for consistency with applicable plans, policies, and regulations using the following framework:

- Consistency with SMARA – Addressed in Section 4.11, Land Use (particularly Tables 4.11-3 through 4.11-7).
- Consistency with other applicable state plans, policies and regulations – Addressed in each section of Chapter 4.0 of this EIR, as applicable to the subject matter.
- Consistency with the County General Plan – Addressed in each section of Chapter 4.0 of this EIR, as applicable to the subject matter.

- Consistency with the CCAP – Addressed in each section of Chapter 4.0 of this EIR, as applicable to the subject matter. The analysis examines consistency with both the OCMP and the CCRMP (including the CCIP) as applicable.
- Consistency with the County Zoning Ordinance (Title 8 of the County Code) – Addressed in Section 4.11, Land Use (particularly Tables 4.11-3 through 4.11-7).
- Consistency with the County ICMMO (Title 10, Chapter 3 of the County Code) – Addressed in Section 4.11, Land Use (particularly Tables 4.11-3 through 4.11-7).
- Consistency with the County OCSMO (Title 10, Chapter 4 of the County Code) – Addressed in Section 4.11, Land Use (particularly Tables 4.11-3 through 4.11-7).
- Consistency with the County SMRO (Title 10, Chapter 5 of the County Code) – Addressed in Section 4.11, Land Use (particularly Tables 4.11-3 through 4.11-7).

As described above, the project would conflict with the Williamson Act because a portion of the site is covered by a Williamson Act contract. Implementation of Mitigation Measure 4.3-2 would ensure that the project is consistent with the Williamson Act. The project would be consistent with the County's land use and zoning designations, as surface mining is an allowed use under the 2030 Countywide General Plan AG designation.

The proposed reclamation plan may not be consistent with OCMP Action 5.4-7 as described above. This action establishes a priority for reclamation. Reclamation to agriculture is identified as the top priority, followed by habitat, recreation and open space, and "other" in that order. The proposed reclamation would result in 195 acres (62 percent of the total acreage) as recreation and open space which is the County's third priority reclamation land use, 74 acres (24 percent) as agriculture which is the first priority and 44 acres (14 percent) as habitat which is the third priority.

Mitigation Measure 4.3-3:

Prior to commencement of site work, the Applicant shall either 1) revise the reclamation plan to increase reclaimed agricultural lands in compliance with OCMP Action 5.4-7; or 2) identify an alternative functionally equivalent change or addition to the project that would be acceptable to the County and would enable a finding of substantial consistency to be made by the Board of Supervisors. Alternatively the Board of Supervisors may find the project to be substantially consistent with the OCMP based on a balancing of relevant policies including but not limited to Action 5.4-6.

Implementation of Mitigation Measure 4.3-3 could reduce the conflict with applicable plans, policies, and regulations to a less-than-significant level.

4.4 AIR QUALITY

INTRODUCTION

This section analyzes the project impacts on air quality. The setting describes the existing ambient air quality in the project region. Project-specific impacts are identified and appropriate mitigation measures are recommended to reduce significant impacts to a less-than-significant level. This section has been prepared using methods and assumptions recommended in the Yolo-Solano Air Quality Management District (YSAQMD) Handbook for Assessing and Mitigating Air Quality Impacts (2007) and based on equipment information provided by the Applicant.

Impacts related to climate change and greenhouse gas emissions are discussed separately in Section 4.6.

CONCEPTS AND TERMINOLOGY

The following definitions are common terms used to discuss air quality:

A criteria air pollutant is any air pollutant for which ambient air quality standards have been set by the U.S. Environmental Protection Agency (EPA) or California Air Resources Board (CARB). The most prevalent criteria pollutants include ozone, nitrogen dioxide, carbon monoxide, sulfur dioxide, respirable particulate matter (PM_{10}), and fine particulate matter ($PM_{2.5}$).

Ozone, triatomic oxygen (O_3), is considered a pollutant when found near the earth's surface. Ozone is not emitted directly, but is the result of the chemical reaction of sunlight with "ozone precursors." These precursors are nitrogen oxides (commonly referred to as NO_X) and reactive organic gases (ROG), which are directly emitted from fossil fuel combustion.

Nitrogen dioxide (NO_2), carbon monoxide (CO), and sulfur dioxide (SO_2) are also products of combustion and are toxic when inhaled. ROGs are generally considered nontoxic at ambient concentrations.

PM_{10} consists of particles 10 microns in diameter and smaller, while $PM_{2.5}$ consists of particles 2.5 microns in diameter and smaller. These pollutants come from several sources, but for the project they would be produced primarily by fugitive dust and vehicle and equipment exhaust.

SETTING

Description of Regional Environment

The project site is located in the southwestern Sacramento Valley, which extends from the Siskiyou Mountains in the North to the San Joaquin-Sacramento Delta in the South. The Sacramento Valley includes all or part of ten counties including Yolo County. Unincorporated towns in the vicinity include Capay, Esparto, Madison, and Yolo. The project site is located in the Sacramento Valley Air Basin (SVAB).

Prevailing winds are from the south and occasionally winds from the northwest blow cold air into the Valley in winter. Temperature inversions can occur in the Valley during the winter as the ground surface cools at night. This inversion causes pollutants originating from the Sacramento Valley to remain at ground level. In addition, considerable transport of criteria pollutants occurs between adjacent air basins.

Ambient Air Quality

Air districts in California are required to monitor air pollutant levels to assure that state and national ambient air quality standards are met and, in the event that they are not, to develop strategies to meet these standards. Depending on whether the standards are met or exceeded, the local air basin is classified as being in "attainment" or "nonattainment."

The YSAQMD is the principal agency responsible for protecting human health within the vicinity of the project site, and the facilities in the Cache Creek Basin currently operate under permits issued by the YSAQMD. The pollutants of greatest concern to the YSAQMD are ozone, PM_{10}, and $PM_{2.5}$. As shown in Table 4.4-1, YSAQMD is currently designated as a nonattainment area for the State 1-hour and national 8-hour ozone standards. YSAQMD is also in nonattainment of the State 24-hour PM_{10} standard and national annual average $PM_{2.5}$ standard, and in partial attainment of the national 24-hour $PM_{2.5}$ standard. YSAQMD is in attainment of applicable standards for all other criteria pollutants.

Table 4.4-1 YSAQMD Attainment Status for Criteria Pollutants

Pollutant	Averaging Time	State Standards	National Standards
Ozone	1-Hour	Nonattainment	N/A
	8-Hour	Nonattainment	Nonattainment
Carbon Monoxide	1-Hour	Attainment	Unclassified
	8-Hour	Attainment	Unclassified
Nitrogen Dioxide	1-Hour	Attainment	N/A
	Annual	N/A	Attainment
Sulfur Dioxide	1-Hour	Attainment	N/A
	24-Hour	Attainment	Attainment
	Annual	N/A	Attainment
Coarse Particulate Matter (PM_{10})	24-Hour	Nonattainment	Unclassified
	Annual	Nonattainment	N/A
Fine Particulate Matter ($PM_{2.5}$)	24-Hour	N/A	Partial nonattainment
	Annual	N/A	Nonattainment
Sulfates	24-Hour	Attainment	N/A
Lead	30-Day	Attainment	N/A
	Calendar Quarter	N/A	Attainment
Hydrogen Sulfide	1-Hour	Attainment	N/A

Table 4.4-1 YSAQMD Attainment Status for Criteria Pollutants

Pollutant	Averaging Time	State Standards	National Standards
Vinyl Chloride	24-Hour	Attainment	N/A
Visibility Reducing Particles	8-Hour	Attainment	N/A

Notes: The "partial" nonattainment designation is for a county in which part of the county has not met the national ambient air quality standard for the pollutant.

The "unclassified" designation is for an area that cannot be classified on the basis of available information as meeting or not meeting the national ambient air quality standard for the pollutant.

Source: YSAQMD 2009

The closest air monitoring station to the project site that currently monitors ozone, PM_{10}, and $PM_{2.5}$ is the Gibson Road monitoring station located in Woodland. From 2002 to 2008, published data from this monitoring station show that ambient levels of ozone and $PM_{2.5}$ frequently exceeded the corresponding state standards (Table 4.4-2).

Table 4.4-2 Exceedences of National and State Standards 2002 to 2008

	2002	2003	2004	2005	2006	2007	2008
Ozone							
Days exceeding state 1-hour standard (0.11 ppm)	9	3	1	2	6	1	4
Highest 1-hour average concentration (ppm)	0.11	0.097	0.096	0.099	0.106	0.106	0.1
Days exceeding national 8-hour standard (0.08 ppm)	13	10	0	6	14	2	4
Highest 8-hour average concentration (ppm)	0.091	0.084	0.073	0.086	0.09	0.077	0.087
PM_{10}							
Days exceeding state 24-hour standard	36.8	*	79.5	6.1	36.8	18.7	48.9
Highest 24-hour average concentration	86	55	171	60	78	119	183.3
$PM_{2.5}$							
Days exceeding national 24-hour standard	3.4	0	3.4	0	12.3	15.1	*
Highest 24-hour average concentration ($\mu g/m^3$)	69	31	36	35	44	42	41.9

Notes:

ppm = parts per million

$\mu g/m^3$ = micrograms per cubic meter

* Insufficient or no data is available.

Source: CARB 2008

Description of Local Environment

The site is bounded by County Road 87 and the Dunnigan Hills to the east, the existing Capay Aggregate Production facility to the west, and the West Adams Canal to the north. Cache Creek runs through the south end of the project site. No significant topographic obstructions to winds from the north or south are present.

The average annual precipitation in the project area is 15 to 20 inches (Oregon Climate Service 1995) and most of the seasonal rainfall occurs between October and April.

Existing Emissions

Existing emissions on the project site originate primarily from agricultural activities. The pollutants of concern from these activities include particulate matter, ozone precursors, and carbon monoxide.

Receptors

The nearest sensitive receptors (residentially designated land uses; hospitals and nursing/convalescent homes; hotels and lodging; schools and day care centers; and neighborhood parks) in the project vicinity include Esparto High School (adjacent to SR 16 in Esparto) located approximately 1.5 miles southeast of the project site boundary in Esparto, and Madison Migrant Center Daycare (adjacent to SR 16 east of County Road 89) located approximately 3.5 miles southeast of the project site boundary in Madison.

REGULATORY SETTING

Air quality is addressed through federal, state, and regional and local government agencies. These agencies work jointly as well as individually to reduce air pollution through legislation, regulation, policy making, education, and other programs. For the project, these agencies include:

- EPA – Responsible for setting and enforcing the national standards for atmospheric pollutants, including the Clean Air Act, as amended.
- CARB – Part of the California Environmental Protection Agency (Cal-EPA) and responsible for assuming implementation of the California Clean Air Act, responding to federal regulations, and regulating emission standards.
- YSAQMD – Primarily responsible for comprehensive air pollution control in Yolo and Solano County portions of the SVAB. YSAQMD works directly with federal, state, and local agencies. YSAQMD rules would supersede any conflicting Yolo County General Plan policies.
- Yolo County – Has the authority and responsibility to reduce air pollution through its local land use decision-making authority.

Construction-related and operational air pollutant emissions are subject to federal, state, and local rules and regulations as implemented through provisions of the federal Clean Air Act, California Clean Air Act, the Air Quality Attainment Plan (AQAP) adopted by YSAQMD in 1991, and the 1994 Sacramento Regional Clean Air Plan (CAP). The following sections present an overview of these rules and regulations.

Federal

Federal Clean Air Act

The 1970 Clean Air Act authorized the establishment of national health-based air quality standards, and also set deadlines for attainment. The federal Clean Air Act Amendments of 1990 made changes in deadlines for attainment of national ambient air quality standards and in the actions required for areas of the nation that exceed these standards. National standards and local attainment are addressed as part of the Description of Regional Environment discussion of the OCMP.

State

Surface Mining and Reclamation Act

Project Consistency with SMARA is discussed in Section 4.11, Land Use.

California Clean Air Act

The 1988 California Clean Air Act requires that all air districts in the State endeavor to achieve and maintain compliance with the California ambient air quality standards for ozone, carbon monoxide, sulfur dioxide, and nitrogen dioxide by the earliest practical date. Plans for attainment of State standards were to be submitted to CARB by June 30, 1991. The California Clean Air Act specifies that districts focus particular attention on reducing the emissions from transportation and area-wide emission sources, and the act provides districts with new authority to regulate indirect sources. Each district plan is to achieve a 5 percent annual reduction, averaged over consecutive three-year periods, in district-wide emissions of each nonattainment pollutant or its precursors.

In 2003, the California Legislature passed Senate Bill (SB) 656 to reduce public exposure to PM_{10} and $PM_{2.5}$. The District is required to list particulate matter control measures it considers cost-effective and develop a schedule for their implementation by July 31, 2005. These measures are included as suggested feasible mitigation measures for controlling construction-related fugitive dust and reducing emissions from fuel combustion.

Local

Project consistency with county mining regulations is discussed in Section 4.11, Land Use. Project consistency with General Plan policies, CCAP, and other applicable regulations is discussed below.

Regional Air Quality Management Plans

YSAQMD, in coordination with other air districts in the SVAB (e.g., El Dorado Air Pollution Control District [APCD], Feather River Air Quality Management District [AQMD], Placer County APCD, and Sacramento Metropolitan AQMD) prepared and submitted the 1991 AQAP in compliance with the requirements set forth in the California Clean Air Act. The requirement of the California Clean Air Act for a first triennial progress report and revision of the 1991 AQAP was fulfilled with the preparation and adoption of the 1994 Ozone Attainment Plan (OAP). The 1994 Sacramento Regional CAP was developed cooperatively with all the districts in the SVAB. The CAP was adopted in 1994 in compliance with the 1990 Amendments to the Federal Clean Air Act.

An update to the CAP is currently in progress to address the new 8-hour ozone standard and the associated control strategies that would be required to meet the new standards. The air districts in the SVAB will hold public hearings in 2009 to consider adoption of the Sacramento Regional 8-Hour Ozone Attainment and Reasonable Further Progress Plan. This plan makes commitments to adopt and implement new reasonably available control measures.

Conformity with the AQAP is demonstrated through compliance with applicable YSAQMD rules and regulations which were adopted to achieve the goals of the AQAP. YSAQMD has included mineral process industries (such as aggregate mining operations) in emission inventories prepared in support of attainment strategies that were recommended in the AQAP.

While the YSAQMD is not required to prepare a particulate matter attainment plan, it was required to list particulate matter control measures it considers cost-effective and develop a schedule for their implementation by July 31, 2005. These measures are included as suggested feasible mitigation measures for controlling construction-related fugitive dust and reducing emissions from fuel combustion.

YSAQMD Rules and Regulations

All currently operating aggregate facilities within the planning area operate under permits issued by the YSAQMD. The YSAQMD rules and regulations determine the conditions under which permits are issued. The Applicant would be required to apply for a permit to operate from the YSAQMD. The permit would list specific operating conditions regarding maximum throughput, maximum emissions, and emissions control equipment. An extensive discussion of the YSAQMD rules and regulations relevant to aggregate processing facilities is provided in the OCMP EIR. In particular, mobile and process sources of fugitive dust would be regulated and controlled pursuant to the rules.

2030 Countywide General Plan (2009)

The County's 2030 Countywide General Plan (Yolo County 2009a) contains three policies relevant to the project:

Circulation Element

- **CI-4.4.** Support and encourage low emission or non-polluting forms of transportation.

The project proposes to use a conveyor system rather than vehicles to transport extracted sand and gravel deposits to the processing plant site. The project also proposes to use low emission vehicles where practical. Therefore, the project would be consistent with this policy.

Agriculture and Economic Development Element

- **ED-5.4.** Encourage businesses to exceed clean air standards, whenever possible.

The project would implement Mitigation Measures 4.4-2a and 4.4-2b to reduce impacts on air quality from both dust and combustion emissions, and would also use a conveyor to move materials, reducing the need for truck trips. Therefore, the project would be consistent with this policy.

Conservation and Open Space Element

- **CO-6.6.** Encourage implementation of Best Management Practices to reduce emissions and control dust during construction activities.

The project would implement Mitigation Measures 4.4-2a and 4.4-2b to reduce impacts on air quality from dust and combustion emissions. Therefore, the project would be consistent with this policy.

IMPACTS AND MITIGATION MEASURES

Standards of Significance

The five significance criteria for this analysis were developed from criteria presented in the CEQA Guidelines, Appendix G. The criterion not listed below was previously addressed in the Initial Study, which indicated the project would have a less-than-significant impact on air quality described in that criterion (see Impacts Found Less-than-Significant in Initial Study, below). The proposed project would result in a significant impact on air quality if it would:

- Conflict with or obstruct implementation of the applicable air quality plan.
- Violate any air quality standard or contribute substantially to an existing or projected air quality violation.
- 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 (including releasing emissions, which exceed quantitative thresholds for ozone precursors).
- Expose sensitive receptors to substantial pollutant concentrations.
- Substantially conflict with applicable plans, policies, and regulations where such conflict would result in an adverse physical change in the environment.

Methodology

Mobile source emissions of criteria pollutants are generated from mobile equipment exhaust (e.g., bulldozers, scrapers) during plant construction, aggregate removal, and processing and reclamation activities. Extracted aggregate materials are transported from the excavation to the rock plant via scrapers traveling on unpaved site roads.

On-site fugitive dust emissions are generated from aggregate and topsoil/overburden handling activities, wind erosion of disturbed areas, and plant traffic. Aggregate and topsoil/overburden handling activities include excavation, hauling, and dumping of the materials as well as periodic maintenance of roadways. Process fugitive dust is emitted from conveyor transfer points, screening operations, and crushing equipment.

Off-site emissions of criteria pollutants and fugitive dust are generated from vehicles (e.g., employee vehicles and haul trucks) traveling to and from the project site.

Since EPA has not yet officially proposed a $PM_{2.5}$ designation for the District, there is no threshold of significance proposed at this time (YSAQMD 2007). However, most mitigation measures designed to reduce PM_{10} emissions would also reduce $PM_{2.5}$ emissions.

Table 4.4-3 shows thresholds of significance used in this analysis for PM_{10}, ozone precursor, and carbon monoxide emissions.

Table 4.4-3 Thresholds of Significance for Criteria Pollutants of Concern

Pollutant	Threshold of Significance
Reactive Organic Gases	10 tons per year
Nitrogen Oxides	10 tons per year
PM_{10}	80 pounds per day
Carbon Monoxide	Violation of a state ambient air quality standard

Source: YSAQMD 2007, Yolo County 1996b

On-site stationary source emissions from the rock plant are generated from aggregate crushing, screening, and stockpiling. Both on- and off-site mobile source emissions are generated from mobile equipment and haul trucks. Rock plant emissions, including fugitive dust, and mobile source emissions were estimated based on methods and emission factors and emission estimation techniques (EETs) published in the EPA's Compilation of Air Pollutant Emission Factors, AP-42 (USEPA 2006), Title 40 Code of Federal Regulations Part 89, the Bay Area Air Quality Management District's CEQA Guidelines (1999), and the South Coast Air Quality Management District's (SCAQMD) CEQA Guidelines (2008).

Emissions from initial site and plant construction were assumed to be similar to operational emissions. Actual construction emissions may be less than operational emissions, so the use of operational emissions estimates represents a worst-case estimate.

Impacts Found Less than Significant in Initial Study

Create objectionable odors affecting a substantial number of people. The Initial Study (Appendix A) found that the creation of objectionable odors due to the project was a less-than-significant impact and would not require further analysis in the EIR. Existing mining projects in operation for more than ten years have not created objectionable odors since their inception.

Analysis of Potentially Significant Impacts

Impact 4.4-1:

The project could conflict with or obstruct implementation of the applicable air quality plan. (Less than Significant)

The project would introduce additional sources of criteria air pollutant emissions, in particular, PM_{10} and ozone precursors (NO_X and ROG). However, these emissions are generally consistent with the total tonnage analyzed in 1996 with the approval of the CCAP and therefore an anticipated outcome of planned mining for which land use approval and CEQA clearance has already been secured.

Although the YSAQMD is not currently required to adopt a particulate matter reduction plan, the OCSMO Section 10-4.414 requires the control of fugitive dust through management of stockpiled soils and regular watering of disturbed areas. The project would comply with this regulation.

Health risks from agriculture and mining emissions are regulated under YSAQMD Regulation 3, Toxics New Source Review and Regulation 9, State Designated Toxic

Sources. New mining operations in Yolo County would be subject to these rules and regulations which ensure health risks to sensitive receptors from these industries are minimized to a less-than-significant level. The project would comply with these regulations. Additionally, because the capacity requested is part of the currently permitted capacity under the OCMP, the projected increases in emissions associated with this amount of mining are included in regional projections that are the basis for the most recent relevant air quality plans including the YSAQMD OAP and the SVAB CAP. Therefore, the project would not conflict with the OAP or CAP.

Because emissions would not conflict with or obstruct the implementation of the OAP and CAP, impacts would be less than significant, and no mitigation measures would be required.

Mitigation Measure 4.4-1:

None required.

Impact 4.4-2:

The project could violate an air quality standard or contribute substantially to an existing or projected air quality violation. (Significant and Unavoidable)

Project construction and operation would result in emissions of ozone precursors and PM_{10} from mobile equipment, vehicles, and fugitive dust. The portion of the SVAB that is under YSAQMD jurisdiction is currently in nonattainment for the State and federal ozone and State PM_{10} standards. Increased ozone precursor and PM_{10} emissions would contribute to this existing violation and could delay the YSAQMD's eventual attainment of the State and federal standards.

Table 4.4-3 lists the project-level thresholds of significance established by the YSAQMD for PM_{10} and ozone precursors. As shown in Tables 4.4-4, 4.4-5, and 4.4-6, the projected increase in reactive organic gas emissions would not exceed the YSAQMD significance threshold of 10 tons per year. As shown in Table 4.4-7, the projected increase in carbon monoxide emissions would not be sufficient to cause a violation of the State standards for carbon monoxide and would therefore be less than significant. However, the projected increase in PM_{10} emissions would exceed the significance threshold of 80 pounds per day and contribute to existing exceedences of state and federal ambient PM_{10} standards. Additionally, the projected increase in nitrogen oxides emissions would exceed the significance threshold of 10 tons per year, although this would not cause an exceedence of state or federal ambient NO_2 standards, effectuality rendering the impact less than significant.

Table 4.4-4 Estimated On-site Operational Emissions

Project Emissions	On-site Equipment & Trucks		
	tons/yr	lb/day	lb/hr
Oxides of Nitrogen (as NO_2)	20.4	161.0	25.4
Hydrocarbons (ROC as CH_4)	2.2	17.6	2.8
Carbon Monoxide (CO)	12.2	96.3	15.2
Particulates (as PM_{10})	1.3	10.0	1.6
Sulfur Dioxide (SO_2)	0.0	0.1	0.0
Diesel Particulate Matter (DPM)	1.3	10.0	1.6
Fugitive Dust (as PM_{10})	7.9	80.9	10.4

Source: USEPA 2006, USEPA 2009a, SCAQMD 2008

Table 4.4-5 Estimated Off-site Operational Emissions

Project Emissions	Off-site Trucks		
	tons/yr	lb/day	lb/hr
Oxides of Nitrogen (as NO_2)	36.1	284.1	17.8
Hydrocarbons (ROC as CH_4)	2.9	23.0	1.4
Carbon Monoxide (CO)	11.6	91.4	5.7
Particulates (as PM_{10})	1.7	13.7	0.9
Sulfur Dioxide (SO_2)	0.0	0.3	0.0
Diesel Particulate Matter (DPM)	1.7	13.7	0.9
Fugitive Dust (as PM_{10})	2.8	21.7	1.4

Source: USEPA 2006, USEPA 2009a, SCAQMD 2008

Table 4.4-6 Estimated Total Operational Emissions

Project Emissions	Combined Total		
	tons/yr	lb/day	lb/hr
Oxides of Nitrogen (as NO_2)	**56.4**	445.1	43.2
Hydrocarbons (ROC as CH_4)	5.2	40.6	4.2
Carbon Monoxide (CO)	23.8	187.7	20.9
Particulates (as PM_{10})	3.0	**23.7**	2.4
Sulfur Dioxide (SO_2)	0.1	0.4	0.0
Diesel Particulate Matter (DPM)	3.0	23.7	2.4
Fugitive Dust (as PM_{10})	10.6	**102.6**	11.8

Notes: Values in **bold face** indicate threshold exceedences.

Source: USEPA 2006, USEPA 2009a, SCAQMD 2008

Table 4.4-7 Estimated Operational Ambient Air Quality Impacts

Criteria Pollutant	Averaging Period	Modeled	Background	Total	California Standard		Federal Standard	
		µg/m³	µg/m³	µg/m³	µg/m³	status	µg/m³	status
Nitrogen Dioxide (NO_2)	1-hour maximum	18.1	94	112	338	Under	---	Under
	Annual average	1.0	19	20	56	Under	100	Under
Sulfur Dioxide (SO_2)	1-hour maximum	0.0	59	59	655	Under	---	Under
	3-hour	0.0	53	53	---	Under	1309	Under
	24-hour	0.0	24	24	105	Under	367	Under
	Annual average	0.0	7	7	---	Under	79	Under
Carbon Monoxide (CO)	1-hour maximum	25.8	1,946	1,972	22,898	Under	40,071	Under
	8-hour	18.1	1,488	1,506	10,304	Under	10,304	Under
Particulates (as PM_{10})	24-hour	0.36	171.0	171.4	50	Exceed	150	Exceed
	Annual average	0.15	35.2	35.3	20	Exceed	---	Under
Particulates (as $PM_{2.5}$)	24-hour	0.35	69.0	69.4	---	Under	35	Exceed
	Annual average	0.15	10.4	10.5	12	Under	15	Under
Fugitive Dust (as PM_{10})	24-hour	32.59	171.0	203.6	50	Exceed	150	Exceed
	Annual average	13.61	35.2	48.8	20	Exceed	---	Under

Notes:

µg/m³ = micrograms per cubic meter

Source: USEPA 2006, USEPA 2009a, SCAQMD 2008, CARB 2009, BAAQMD 2008

The OCSMO requires the control of fugitive dust through management of stockpiled soils and regular watering of disturbed areas and requires that all internal combustion engine-driven equipment and vehicles be kept tuned according to the manufacturer's specifications, and that no vehicles or equipment be left idling for a period of longer than 10 minutes. However, even after implementation of these measures, the project could exceed the significance thresholds for PM_{10} and nitrogen oxides. More recent requirements (see measure below) from the YSAQMD would achieve greater mitigation; however, residual impacts would remain.

Mitigation Measure 4.4-2a:

The Applicant shall implement these measures throughout construction and operation (YSAQMD 2007, BAAQMD 1999, SCAQMD 2008):

- *Water all active sites and plant roads at least twice daily to maintain a high soil moisture ratio. Frequency should be based on the type of operation, soil, and wind exposure;*
- Cover all trucks hauling dirt, sand, or loose materials while maintaining at least 2 feet of freeboard
- *Apply non-toxic binders (e.g., latex acrylic copolymer) to exposed areas after cut and fill operations and seed area;*
- *Apply chemical soil stabilizers on inactive areas;*

- *Plant tree windbreaks on the windward perimeter of projects if adjacent to open land;*
- *Plant vegetative ground cover in disturbed areas as soon as possible;*
- *Cover inactive storage piles;*
- *Sweep streets if visible soil material is carried out from the site; and*
- *Treat accesses to a distance of 100 feet from the paved road with a 6 to 12-inch layer of wood chips or mulch or with a 6-inch layer of gravel.*

Tables 4.4-8, 4.4-9, and 4.4-10 show estimated unmitigated and mitigated fugitive dust emissions for mining operations, processing equipment, and on-site truck traffic based on EPA's Compilation of Air Pollutant Emission Factors, AP-42 (2006), the YSAQMD CEQA Handbook (2007), and the Bay Area Air Quality Management District's CEQA Guidelines (1999).

Table 4.4-8 Estimated Mining Fugitive Dust Emissions

	Uncontrolled		Controlled		Reduction
Activity	**lbs/day**	**lbs/yr**	**lbs/day**	**lbs/yr**	**percent**
Mining or Reclamation Operation	255	45,645	31	5,477	88%
Processing Operation	102	25,908	12	3,109	88%
Maintenance & Storage	26	5,406	3	649	88%
Totals	**383**	**76,959**	**46**	**9,235**	**88%**

Source: USEPA 2006, BAAQMD 1999, YSAQMD 2007

Table 4.4-9 Estimated Processing Fugitive Dust Emissions

	Uncontrolled		Controlled		Reduction
Activity	**lbs/day**	**lbs/yr**	**lbs/day**	**lbs/yr**	**percent**
Screening	48	8,671	4	732	92%
Coarse Tertiary Crushing	14	2,436	3	541	78%
Fines Crushing	84	15,036	7	1,203	92%
Conveyor Transfer Points (69)	425	76,082	17	3,112	96%
Totals	**571**	**102,225**	**31**	**5,588**	**95%**

Source: USEPA 2006

Table 4.4-10 Estimated Truck Traffic Fugitive Dust Emissions

Activity	Uncontrolled		Controlled		Reduction
	lbs/day	lbs/yr	lbs/day	lbs/yr	percent
On-site Only Trucks	31	7,925	4	951	88%
Off-site Trucks When Onsite	181	45,933	22	5,512	88%
Totals	**212**	**53,858**	**25**	**6,463**	**88%**

Source: USEPA 2006, YSAQMD 2007

Mitigation Measure 4.4-2b:

The Applicant shall implement the following standard measures during construction and operation to reduce emissions of equipment and vehicle exhaust (YSAQMD 2007, BAAQMD 1999, SCAQMD 2008):

- *The project specifications shall include 13 CCR Sections 2480 and 2485, which limit the idling of all diesel-fueled commercial vehicles (weighing over 10,000 pounds, both California- or non-California-based trucks) to five minutes at any location;*
- *Grid power shall be used instead of diesel generators when the following conditions are feasible:*
  - *Grid power is available,*
  - *Construction is within 100 feet of the grid power source,*
  - *Portable electrical cabling is feasible, and*
  - *The grid power source is the proper voltage, amperage and can be connected without effect to the entity being supplied by the grid power.*
- *A schedule of low-emissions tune-ups shall be developed and such tune-ups shall be performed on all equipment, particularly for haul and delivery trucks;*
- *Engines shall be retrofitted with diesel oxidation catalysts to remove emissions such as diesel particulate matter filters;*
- *Idling time of diesel-powered equipment shall be limited to two minutes, except when equipment is running in order to hold lifted loads or when the estimated idling time is less than three minutes; and*
- *Alternative-fuel-powered equipment (i.e. natural gas, biodiesel, and electric) shall be used when feasible.*

Implementation of Mitigation Measure 4.4-2a, along with processing controls (i.e., water sprays and dust collectors), could reduce emissions of PM_{10} as fugitive dust by approximately 90 percent, but this level would still be well above the significance threshold of 80 pounds per day and would, therefore, remain significant. Mitigation Measure 4.4-2b would reduce emissions of PM_{10} and nitrogen oxides from exhaust by an unknown proportion. No feasible mitigation measures are available that would likely reduce emissions of PM_{10} and nitrogen oxides to less-than-significant levels. Therefore, the project would have a significant and unavoidable impact on the local attainment status of State and federal PM_{10} and ozone standards.

Impact 4.4-3:

The project could 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. (Significant and Unavoidable)

Cumulative air quality impacts for full implementation of the CCAP, including the tonnage requested by this project, was analyzed in the 1996 CCAP EIR and found to be significant and unavoidable. The analysis performed for this EIR confirms that conclusion.

The SVAB is in nonattainment of State 1-hour and federal 8-hour ozone standards, State 24-hour and State annual average PM_{10} standards, and State and federal annual average $PM_{2.5}$ standards. The operation of heavy equipment and haul trucks during construction and operation of this project would generate combustion emissions and fugitive dust emissions, resulting in a significant impact by contributing to existing air quality violations, and creating a cumulatively considerable increase. Implementation of the control measures listed under Mitigation Measures 4.4-2a and 4.4-2b would minimize emissions of particulate matter, however, cumulative impacts would be significant and unavoidable.

Mitigation Measure 4.4-3:

Implementation of Mitigation Measures 4.4-2a and 4.4-2b.

Implementation of Mitigation Measures 4.4-2a and 4.4-2b would reduce impacts on the cumulatively considerable net increase in criteria pollutants. However, the impact would remain significant and unavoidable.

Impact 4.4-4:

The project could expose sensitive receptors to substantial pollutant concentrations. (Less than Significant)

The Initial Study determined that due to their distance from the project site, it is unlikely for sensitive receptors to be adversely affected by on-site activities, as discussed further below:

Mining and reclamation activities, along with associated trucking, would cause long-term emissions of NO_X, ROG, CO, SO_2, PM_{10}, and $PM_{2.5}$ from diesel-powered equipment, vehicles, and earthmoving (ground disturbance). The results of the screening analysis contained in Table 4.4-7 shows that no exceedence of ambient air quality standards in the project vicinity would result solely from on-site project activities. Notwithstanding project-generated impacts, maximum background levels of particulate matter (PM_{10}, $PM_{2.5}$) already exceed state or federal standards as applicable in the project vicinity.

As shown in Table 4.4-7, the projected increase in emissions of carbon monoxide would not result in a violation of State standards for carbon monoxide. The air quality analysis performed for the OCMP EIR determined that the approval and implementation of all proposed sand and gravel mining applications in the Cache Creek Basin would not cause a significant increase in carbon monoxide emissions,

and would not result in carbon monoxide hot spots near sensitive receptors. This impact would be less than significant, and no mitigation measures would be required.

Diesel particulate matter (DPM) contains substances that are suspected carcinogens, along with pulmonary irritants and hazardous compounds that may affect sensitive receptors such as young children, senior citizens, or those susceptible to respiratory disease. Where heavy equipment activity occurs in proximity to long-term sensitive receptors, there could be a potential for unhealthful exposure of those receptors to diesel exhaust, including residential receptors. The results of a conservative screening health risk assessment (HRA) are contained in the Air Quality Emissions Calculations (ENTRIX 2009a).

The screening HRA shows that the extreme upper-bound probability of contracting cancer from diesel particulate matter, for the maximally exposed individual over the 30-year life of the Project is about 7 in 1 million for the school and about 2.5 in 1 million for the daycare center which is less than the 10 in 1 million YSAQMD CEQA (2007) threshold and thus is less than significant. Since screening HRA assumptions are highly conservative, actual risks would be far less.

Mitigation Measure 4.4-4:

None required.

Impact 4.4-5:

The project could substantially conflict with applicable plans, policies and regulations where such conflict would result in an adverse physical change in the environment. (Less than Significant)

This project has been analyzed for consistency with applicable plans, policies, and regulations using the following framework:

- Consistency with SMARA – Addressed in Section 4.11, Land Use (particularly Tables 4.11-3 through 4.11-7).
- Consistency with other applicable state plans, policies and regulations – Addressed in each section of Chapter 4.0 of this EIR, as applicable to the subject matter.
- Consistency with the County General Plan – Addressed in each section of Chapter 4.0 of this EIR, as applicable to the subject matter.
- Consistency with the CCAP – Addressed in each section of Chapter 4.0 of this EIR, as applicable to the subject matter. The analysis examines consistency with both the OCMP and the CCRMP (including the CCIP) as applicable.
- Consistency with the County Zoning Ordinance (Title 8 of the County Code) – Addressed in Section 4.11, Land Use (particularly Tables 4.11-3 through 4.11-7).
- Consistency with the County ICMMO (Title 10, Chapter 3 of the County Code) – Addressed in Section 4.11, Land Use (particularly Tables 4.11-3 through 4.11-7).
- Consistency with the County OCSMO (Title 10, Chapter 4 of the County Code) – Addressed in Section 4.11, Land Use (particularly Tables 4.11-3 through 4.11-7).

- Consistency with the County SMRO (Title 10, Chapter 5 of the County Code) – Addressed in Section 4.11, Land Use (particularly Tables 4.11-3 through 4.11-7).

Assuming approval of the requested approvals, including identified mitigation measures and standard conditions of approval, the project is considered consistent with these plans, policies, and regulations pursuant to CEQA. Specifically regarding Air Quality, Mitigation Measures 4.4-2a and 4.4-2b would reduce impacts on air quality and ensure project consistency with the Clean Air Act and YSAQMD's 1991 AQAP plan. Implementation of these mitigation measures, along with the SWPPP, SPCC Plan, and a Business Plan would also ensure that the project would be consistent with General Plan policies (such as policies CON 15, LU 46, ED-5.4, and CO-6.6).

Mitigation Measure 4.4-5:

None required.

4.5 BIOLOGICAL RESOURCES

This section analyzes the project impacts on biological resources. The setting describes the existing conditions of the vegetation, wildlife habitats, wetlands, aquatic biology, wildlife species, and special-status species on the project site and vicinity. Project-specific impacts are identified and appropriate mitigation measures are recommended to reduce significant impacts to a less-than-significant level.

INTRODUCTION

This section reports the findings of studies conducted for Granite. A habitat assessment was conducted in May 2007 by TRC (TRC 2007a). The report included a biological inventory and a preliminary evaluation of potential impacts. This biological resource section was based on the inventory and assessment within the TRC Biological Assessment (TRC 2007a). A list of special-status plant and animal species was compiled for the biological resources study area (as defined below) based on the following sources: the California Department of Fish and Game (CDFG 2009a) California Natural Diversity Data Base (CNDDB) and U.S. Fish and Wildlife Service (USFWS) species lists for the USGS 7.5-minute quadrangles Esparto, Madison, Bird Valley, and Zamora (USFWS 2009). (The current USFWS species list was created on July 20, 2009 and will expire within 90 days. Therefore an official letter for these USFWS species will not be submitted until this EIR is finalized).

SETTING

Description of Regional Environment

The biological resources study area consists of six California Wildlife Habitat Relationship (CWHR) habitat types: Valley Foothill Riparian, Annual Grasslands, Riverine, Orchards, Cropland, and urban/ruderal/ornamental communities that could be affected during project construction and operations. The proposed project would use approximately 313± acres of a total 390-acre property located in Yolo County, California. The regional topography consists of low rolling hills and broad alluvial plains formed at the base of the eastern side of the California Coast Range. The predominant land use for the region is agriculture, and the extraction of sand and gravel to meet the regional demand for construction materials. The property is located in the southern portion of a relatively flat and wide alluvial valley known as Hungry Hollow. The alluvial valley is oriented northwest to southeast. Hungry Hollow is bounded on the east by Dunnigan Hills and to the west by the Capay Hills. Cache Creek transects the valley, flowing west to east.

Description of Local Environment

The project site consists mainly of agricultural production lands including row crops, English walnut (*Juglans regia*) orchards, and almond (*Prunus dulcis*) orchards. A portion of the property includes annual grassland that has been previously disturbed (graded), and the southern quarter of the property includes an access road to the existing gravel mining operation and the banks and bed of Cache Creek. The stream channel for Cache Creek traverses the southern portion of the property, and agricultural land extends beyond its boundaries toward the town of Esparto. Small areas of native communities such as Valley Foothill Riparian are found along the Cache Creek corridor.

Cache Creek also provides riverine habitat. Native riparian vegetation consists of a narrow band of herbaceous plants and willow scrub along the in-channel area. The property is adjacent to an existing Granite gravel mining operation.

A small farm complex exists at the center of the property consisting of a house, a barn, and associated smaller structures. There are numerous mature trees along the western and northern perimeters of the complex. A network of irrigation ditches crosses the property north of the gravel mining access road, and the West Adams Canal runs along the northern edge and northwestern corner of the property.

California Wildlife Habitats and Terrestrial Natural Communities

Based upon literature research and field surveys, six wildlife habitat types were identified within the project area: Valley Foothill Riparian, Riverine, Annual Grassland, Cropland,Deciduous Orchard, and Urban. These habitats correspond to Mayer and Laudenslayer's descriptions (1988).Four natural communities from *List of Terrestrial Natural Communities Recognized by the California Natural Diversity Database* (CDFG 2003) occur as components of three of these habitat types within the project area and are presented below. The other three habitat types are agricultural or urban and are not correlated with natural communities. The distributions of the habitat types within the project area are also discussed.

Valley Foothill Riparian

Valley Foothill Riparian habitat is typically found in valleys bordering alluvial fans, slightly dissected terraces, lower foothills, and coastal plains and are associated with low velocity flows, flood plains, and gentle topography. Valley foothill riparian habitat occurs in the Central Valley and lower foothills of the Cascade, Sierra Nevada, and Coast Ranges.

Valley Foothill Riparian habitat typically consists of an open to dense, broadleafed, winter deciduous, shrubby, streamside thicket dominated by a variety of several willow species. Dense stands usually have little understory or herbaceous component. More open stands have grassy understories, usually dominated by introduced species.

Dominant tree canopy species found in this habitat are cottonwoods (*Populus fremontii*), California sycamore (*Platanus racemosa*), and valley oak (*Quercus lobata*). Typical shrub layer plant species found include willows (*Salix* sp.), wild rose (*Rosa californica*), wild grape (*Vitus californica*), blue elderberry (*Sambucus mexicana*), and poison oak (*Toxicodendron diversilobum*). The herbaceous layer is composed of sedges, rushes, and grasses (Mayer and Laudenslayer 1988). Valley Foothill Riparian habitat in the project area is comprised primarily of one plant community listed in the *List of Terrestrial Natural Communities Recognized by the California Natural Diversity Database*: under the Low to High Elevation Riparian Scrub category: Great Valley Willow (CDFG 2003), although these stands also include a considerable admixture of mulefat. A few trees characteristic of the Great Valley Mixed Riparian Forest community occur in scattered stands at the project site.

Valley Foothill Riparian habitat provides food, shelter, nesting, migration, and dispersal corridors for an abundance of wildlife species (Mayer and Laudenslayer 1988).

A majority of the existing Valley Foothill Riparian habitat along Cache Creek within the project area has sparse stands of cottonwood with an open understory dominated by willow and other low shrubs and grasses including ripgut brome (*Bromus diandrus*), Mexican tea (*Chenopodium ambrosioides*), and hedge mustard (*Sisymbrium officinale)*. Valley Foothill Riparian habitat is

located along the margins of Cache Creek. A small patch of this habitat type, containing approximately five larger cottonwood trees, occurs along the south side of Cache Creek in an area that would not be disturbed by the project. These trees may provide suitable nesting or roosting sites for raptors. To this extent, the cottonwood component of Valley Foothill Riparian habitat has a high value to avian species, but constitutes a relatively small proportion of this habitat type within the project area. In general, Valley Foothill Riparian habitat has moderate habitat value for special-status species with the potential to occur in the project area. Most of the riparian vegetation at the project site consists of willow and mulefat (*Baccharis salicifolia*) scrub along the Cache Creek channel. Although the historical extent of Valley Foothill Riparian habitat along Cache Creek is not well-documented, extrapolation from estimates for the entire Sacramento Valley indicate that Cache Creek Valley Foothill Riparian habitat has been severely reduced (CCRMP, Yolo County 2002b).

Riverine

Riverine habitats occur in association with terrestrial habitats and are found contiguous to lacustrine (lakes) and fresh emergent wetlands. Riverine habitats are aquatic environments structured by intermittent or continually running water and exist in several structural classes: 1) open water (greater than 2 meters in depth), 2) submerged zone (between open water and the shore), and 3) shore (is seldom flooded and is less that 10 percent canopy cover) (Mayer and Laudenslayer 1988).

The structural complexity of riverine habitats provide food, resting areas, and escape cover for many bird and mammal species such as gulls, terns, raptors, heron, shorebirds, swallows, swifts, flycatchers, river otter, muskrat, and beaver (Mayer and Laudenslayer 1988).

Riverine habitat in the project area supports scattered stands of one plant community listed in the *List of Terrestrial Natural Communities Recognized by the California Natural Diversity Database*: under the Marsh category: Bulrush-Cattail Wetland. This plant community is characterized by plant species such as California bulrush (*Scirpus californicus*), tule (*Scirpus acutus*), small-fruited bulrush (*Scirpus microcarpus*), broad-leafed cattail (*Typha latifolia*), and southern cattail (*Typha domingensis*) (CDFG 2003).

Riverine habitat is located along the banks and in the bed of Cache Creek. This habitat consists predominantly of gravel bars and open water, with patches of riparian vegetation consisting of mule's fat and willow species found in-channel. Where seasonal water flow becomes ponded, marsh-like habitat may develop. One locale of ponded water in the project area supported a small strip of marsh-like habitat with tules (*Schoenoplectus acutus* var. *occidentalis*), cattail (*Typha spp.*), and other emergent species. At the time of the assessment, the flow in Cache Creek was low, covering only a small portion of the creek bed nearest the north bank.

Carcasses of two carp (*Cyprinus spp.*) were observed within the creek bed. One small, unidentified fish was observed swimming in the creek near the County Road 87 Bridge, and a number of swallows were seen foraging around the area. In addition, a northern harrier was observed foraging over the creek bed. Due to the barren nature of the riverine habitat and the highly disturbed nature of the flow regimes in Cache Creek within the 2007 assessment area, aquatic wildlife habitat is low. Although the Cache Creek settling basin now interrupts the connection of Cache Creek to the Yolo Bypass and the Sacramento River, steelhead and chinook salmon, did occur historically in Cache Creek (Moyle 2002). A chinook salmon was observed just downstream of the project area during a 2000 toxicity study (Moyle and Ayres 2000 as cited in TRC 2007a). The settling basin, located just upstream of where the creek enters the Yolo bypass, has been identified as a complete barrier to the migration of anadromous salmonids (CalFish 2009). The portion of the Sacramento River near

the mouth of Cache Creek has been identified as an important area for spawning and rearing delta smelt, but this species does not use the project area. Avian and terrestrial special-status species may utilize riverine habitat in the project area for foraging and as a water source. Thus, riverine habitat in the project area has a moderate value to special-status species that have potential to occur.

Annual Grassland

The Annual Grassland habitat is dominated by introduced annual herbs and grasses such as soft chess (*Bromus hordeaceous*), ripgut brome (*Bromus diandrus*), medusa head (*Taeniathrum caput medusae*), and Italian ryegrass (*Lolium multiflorum*), broadleaf filaree (*Erodium botrys*), and redstem filaree (*Erodium cicutarium*) (Mayer and Laudenslayer 1988).

Annual Grassland is used by wildlife species such as black-tailed rabbit (*Lepus californicus*), California ground squirrel (*Spermophilus beecheyi*), pocket gophers (*Thomomys* sp.), badgers (*Taxidea taxus*), and coyotes (*Canis latrans*) for foraging. Raptors such as the northern harrier (*Circus cyaneus*), turkey vulture (*Cathartes aura*), and prairie falcon (*Falco mexicanus*) also use these grasslands as an important foraging habitat. Other bird species such as burrowing owl (*Athene cunicularia*), short-eared owl (*Asio flammeus*), horned lark (*Eremophila alpestris*), and western meadowlark (*Sturnella neglecta*) are known to breed in annual grassland (Mayer and Laudenslayer 1988).

Annual Grassland habitat in the project area is comprised of one plant community listed in the *List of Terrestrial Natural Communities Recognized by the California Natural Diversity Database*, Non-native Grassland (CDFG 2003).

Annual Grassland covers a portion of the project area west of the walnut orchards and south of Fulton and Frank Lane. Grassland covers the slope between the gravel mining access road and the valley foothill riparian habitat north of Cache Creek. Grassland provides suitable habitat for a number of species including burrowing mammals such as ground squirrel (*Spermophilus beecheyi*) and suitable foraging habitat for a number of species. Two large gopher snakes (*Pituophis catenifer*) were observed basking in small mammal burrows along the slope of the gravel mining access road nearest Cache Creek in annual grassland habitat, and one was observed dead on the road adjacent to nonnative grassland. Stands of cottonwood trees were interspersed along the margins of the annual grassland where water sources from irrigation and Cache Creek were persistent. Several black-tailed jackrabbits (*Lepus californicus*) were observed in the annual grassland habitat adjacent to the Granite Capay facility access road. One Swainson's hawk was observed along the southern bank of Cache Creek, and a number of other avian species were observed flying over the area including, cliff swallow (*Hirundo pyrrhonota*), turkey vulture (*Cathartes aura*), California quail (*Calipepla californica*), mourning dove (*Zenaida macroura*), belted kingfisher (*Ceryle alcyon*), red-winged blackbird (*Agelaius phoeniceus*), and northern harrier.

Because Annual Grassland constitutes a relatively small proportion of the project area, it provides only moderate habitat value for special-status species with the potential to occur in that habitat in the project area.

Cropland

Croplands are typically found on flat to gently rolling terrain and occur in association with orchard, vineyard, pasture, residential park, riparian, chaparral, wetland, and desert habitats. Common planted crops are cotton, rice, lettuce, alfalfa, asparagus, artichoke, and strawberries. Many wildlife

species have adapted to cropland habitats. Species such as deer, elk, antelope, and wild pigs have been known to feed on crop plants. When croplands are flooded for weed control, the habitat provides freshwater wetlands for waterfowl such as shorebirds, wading birds, and gulls (Mayer and Laudenslayer 1988).

Most of the Croplands in the project area are row crops and orchards (Mayer and Laudenslayer 1988). During the 2007 assessment, onions were the only identified row crop. Other fields had newly-sprouted vegetable crops or were not yet planted.

In the project area, a northern harrier was observed foraging and a number of species including mallard *(Anas platyrhynchos*), western kingbird (*Tyrannus verticalis*), and killdeer (*Charadrius vociferous*) were observed in or adjacent to these fields. However, the highly disturbed condition of row crops makes them unlikely to provide special-status habitat beyond occasional foraging or incidental occurrence. Thus, this habitat type has a low value for special-status species with the potential to occur in the project area.

Deciduous Orchard

Deciduous Orchard habitat typically provides open, single-species tree dominated habitat and are often associated with other agricultural types such as croplands, vineyards, and pasture. Tree species such as nuts (walnuts, pistachios, and almonds), and soft fruits (apples, cherries, plums, pomegranate, figs, dates, and prunes) are commonly planted in deciduous orchards (Mayer and Laudenslayer 1988).

Deciduous Orchard habitat provides foraging and nesting habitat for some wildlife species that have adapted to the changed landscape. Wildlife such as deer, rabbits, squirrels, northern flicker, American crow, house finch, plain titmouse, and scrub jays are known to feed on the leaves and fruits of crop plants (Mayer and Laudenslayer 1988).

Deciduous Orchards in the project area consist of English walnuts and almonds. English walnut orchards are located just south of Fulton and Frank Lane on the eastern edge of the project area and on a thin strip of land along the western edge of the project area. An almond orchard is located in the northwest comer of the project area. Approximately five walnut trees and ten shrubs occur near the southeast corner of the southern orchard along the edge of the Granite haul road. Also, one pine tree exists across from the barn and some ornamental vegetation along Fulton and Frank Lane. The soils around these orchards are regularly irrigated and fertilized, and pesticides are applied near the trunks of the trees. Though vegetation under the trees is sparse, some shorter grasses grow where the soil is undisturbed.

Deciduous Orchards in the project area provide marginal foraging habitat for a number of avian species, the use of any insecticides in this area would likely deplete insects as avian food sources. No nests were observed in orchard habitat during the assessment. The Deciduous Orchards are not likely to provide nesting habitat for special-status species due to regular irrigation and maintenance activities in this area. Therefore, this habitat type has low value to avian and other special-status species with the potential to occur in the project area.

Urban/Ruderal/Ornamental

Landscaped areas, parks, lawns, roadsides, vacant lots, and fallow fields and other disturbed grassy areas and ruderal habitats are found within the urban landscape (Mayer and Laudenslayer 1988). Ruderal vegetation is generally dominated by nonnative weedy species in significantly

disturbed areas. The roads in the project area are bordered by ruderal vegetation where disturbance is constant (including tilling and mowing). Ruderal vegetation is also present at three smaller areas along the western edge of the project area, where farm equipment and brush have been stored.

Ornamental native and nonnative plant species, including toyon (*Heteromeles arbutifolia*), oleander (*Nerium oleander*), valley oak (*Quercus lobata*), cork oak (*Quercus suber*), eucalyptus (*Eucalyptus globulus*), sycamore (*Platanus racemosa*), juniper (*Juniperus californica*), redwood (*Sequoia* spp.), and pine (*Pinus* spp.) have been planted along Fulton and Frank Lane and near the developed areas around the farm complex. Nonnative grasses make up a majority of the rest of the plant species observed north of the gravel mining access road.

Ruderal and ornamental areas in the project area may provide suitable foraging habitat for avian and other wildlife species, and larger ornamental shrubs or trees may provide marginal nesting for avian species. However, because of the frequent disturbance of this type of habitat, ruderal/ornamental habitat has a moderate-to-low value to special-status species with the potential to occur within the project area.

Special-Status Species

Table 4.5-1 presents an analysis of distribution, known occurrences, and habitat requirements for 1 special-status plant species and 23 special-status wildlife species that have been recorded in or near the project area, including 1 California Native Plant Society (CNPS) list 1B plant species, 6 California species of concern, and 2 state-listed as threatened that have potential to occur in the project area. Figure 4.5-1 illustrates the CNNDB observations within a 5-mile radius of the project area. Based on data compiled from CNDDB, USFWS species list, and other literature resources, 8 special-status wildlife species potentially occur in the project area (CDFG 2009b, USFWS 2009). A brief description of 1 special-status plant, 2 California threatened bird species, and 6 California species of special concern with the potential to occur in the project area are described below.

Table 4.5-1 Special-status Plant and Wildlife Species with the Potential to Occur in the Project Area

	Status	Habitat	Potential to Occur
PLANTS			
Heckard's pepper-grass (*Lepidium latipes var. heckardii*)	CNPS 1B	Occurs in valley grasslands and vernal pools	Although there are annual grasslands in the project area, suitable habitat was not found in during 2007 survey. There are no vernal pools in the project area. This species does not occur.
INVERTEBRATES			
Blennosperma vernal pool andrenid bee (*Andrena blennospermatis*)	CSC	Nest in uplands around vernal pools, collects pollen only from flowers of blennosperma	There are no vernal pools in the project area. This species does not occur.
Valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*)	FT	Occurs only in the central valley of California, in association with blue elderberry (*Sambucus mexicana*).	This beetle's primary food source and host plant is the elderberry (*Sambucus* sp.). No elderberry plants were found in the project area. This species does not occur.
Vernal pool fairy shrimp (*Branchienecta lynchi*)	FT	Occupies a variety of different vernal pool habitats, from small, clear sanstone rock pool to large turbid alkaline, grassland valley floor pools. Tends to occur in smaller pools in grass or mud bottomed swales or basalt flow depressions pools in unplowed grasslands	This species is only found in vernal pools and have never been found in riverine or permanent bodies of water (USFWS 2005).There are no vernal pools in the project area, This species does not occur.
Vernal pool tadpole shrimp (*Lepidurus packardi*)	FE	Inhabits vernal pools containing clear to highly turbid water	There are no vernal pools in the project area. This species does not occur.
California freshwater shrimp (*Syncaris pacifica*)	FE	Inhabits a broad range of stream and water conditions characteristic of small, perennial, and coastal streams. Have been found only in low-elevation and low- gradient streams with a depth between 12 and 36 inches in Marin, Sonoma, and Napa counties north of San Francisco Bay. Stream must contain exposed live roots of trees such as alder and willow; undercut banks greater than six inches, and overhanging woody debris or stream vegetation such as stinging nettle, grasses or vine maple.	Cache Creek is a low-elevation and low-gradient waterway; however, the project area is outside the species range. Cache Creek does not provide areas of undercut overhanging woody debris, and live roots that support this species. This species does not occur.
FISH			
Delta smelt (*Hypomesus transpacificus*)	FT	This species is able to tolerate a wide salinity range and is native to Sacramento-San Joaquin estuary. Delta smelt live in schools and primarily feed on plank tonic crustaceans, small insect larvae, and mysid shrimp (Moyle 2002). This species, lives primarily along the freshwater edge of the saltwater-freshwater interface of the Sacramento-San Joaquin River Delta. Prior to spawning, Delta smelt migrate upstream from the brackish-water habitat to river channels and tidally influenced backwater sloughs to spawn.	Designated critical habitat does not include the project area. Suitable habitat does not exist in the project area. Access to Cache Creek is now extremely limited and requires utilization of a large network of irrigation canals and ditches (TRC 2007a).

Table 4.5-1 Special-status Plant and Wildlife Species with the Potential to Occur in the Project Area

	Status	Habitat	Potential to Occur
Central Valley steelhead (*Oncorhynchus mykiss*)	FT	Steelhead can be found in the Central Valley from Russian River, south to Soquel Creek and to but not including Pajaro River. Also San Francisco and San Pablo Bay basins. Steelhead typically spawn in clean gravel within tributaries to mainstem river systems, Steelheads prefer temperatures ranging from 59 to 64 degrees Fahrenheit, but can withstand temperatures between 75 and 80 degrees Fahrenheit for short periods if they have been acclimated. Temperatures beyond this range are lethal.	Designated critical habitat does not include the project area. Access to Cache Creek waterway is now extremely limited and requires utilization of a large network of irrigation canals and ditches (TRC 2007a). Stream temperatures are also too warm for juvenile trout to rear in. Suitable habitat does not exist in the project area.
Central Valley spring run chinook salmon (*Oncorhynchus tshawytshcha*)	FT	Central Valley spring-run Chinook salmon migrate to the Sacramento River from March to September with a peak spawning period between late August and October (Moyle 2002). Juvenile salmon emerge between November and March, and are resident in streams for a period of 3 to 15 months before migrating to downstream habitats (Moyle 2002).	Designated critical habitat does not include the project area, and this run did not use the project area historically. Central Valley spring-run chinook may use habitat near the mouth of the Creek during emigration when the Yolo Bypass is flooded.
Winter-run chinook salmon, Sacramento River (*Onchorynchus tshawytscha*)	FE	Juvenile Chinook may spend from 3 months to 2 years in freshwater before migrating to estuarine areas as smolts and then into the ocean to feed and mature. They prefer streams that are deeper and larger than those used by other Pacific salmon species.	Designated critical habitat does not include the project area, and this run did not use the project area historically. Winter-run Sacramento River chinook may use habitat near the mouth of the Creek during emigration when the Yolo Bypass is flooded.
AMPHIBIANS			
California tiger salamander	FT,CSC	Requires underground refuge, especially ground squirrel burrow and vernal pools or other seasonal water sources for breeding.	Designated critical habitat does not include the project area. Suitable habitat for breeding does not exist in the project area. Not likely to occur. Nearest reported occurrence near Dunnigan.
California red-legged frog	FT,CSC	Requires open water, protected nesting substrate and foraging area with insect source within a few km of colony.	Designated critical habitat does not include the project area. Suitable habitat is marginal in the project area. This species does not occur, nearest reported occurrence 10 miles from project area (CDFG 2009a).
REPTILES			
Giant garter snake	ST,FT	Prefers freshwater Marsh and low gradient streams has adapted to drainage canals and irrigation ditches	Absence of marshland vegetation along the creek corridor and suitable nesting habitat absent; long distance to suitable habitat (Yolo bypass). Giant garter snake does not occur in project area.
Northwestern pond turtle (*Actinemys marmorata marmorata*)	CSC	Permanent or nearly permanent water in a wide variety of habitats. Nest may be found up to 0.5 km from water.	Cache Creek provides a permanent water source for this species and upland habitats provide potential nesting habitat. No observations have been recorded in the CNDDB in the project area. Moderate potential to occur.

Table 4.5-1 Special-status Plant and Wildlife Species with the Potential to Occur in the Project Area

	Status	Habitat	Potential to Occur
BIRDS			
Tricolored blackbird (*Agelaius tricolor*)	CSC	A highly colonial nester. Requires open water, protected nesting substrate and foraging area with insect source within a few km of colony.	This species is a colonial nester and requires a large enough nesting area to support a minimum colony of 50 pairs. The riparian corridor in the project area is generally a narrow band where it is unlikely that this species will breed. The grasslands and agricultural areas provide foraging habitat if any nesting areas are nearby. There is a moderate potential for this species to occur.
Burrowing owl (*Athene cunicularia*)	CSC	Utilizes open, dry annual or perennial grasslands, deserts and scrub characterized by low growing vegetation; requires burrowing mammal for subterranean nests.	Suitable burrows for nesting not observed during 2007 site surveys. A few small burrows were observed adjacent to Cache Creek, in low-growing vegetation areas. Low potential to occur.
Swainson's hawk (*Buteo swainsoni*)	ST	Requires foraging areas such as grasslands or alfalfa or grain fields supporting rodent populations adjacent to nesting areas. Breeds in grasslands with scattered trees, juniper-sage flats, riparian areas, savannahs and agricultural land.	Likely to occur in project area. Moderate foraging habitat and limited roosting/nesting habitat
Mountain plover (*charadrius montanus*)	CSC	Utilizes short grasslands, freshly plowed fields, newly sprouting grain fields occasionally sod farms. Prefers grazed areas and flat topography with burrowing rodents. Breeds near fresh water, preferably in emergent wetlands with tall dense cattails or tules, but also in thickets of willows, blackberry, and wild rose.	Cropland and annual grasslands on the site provide foraging habitat. This species does not breed in California. One CNNDB record one mile away from site. Moderate potential to occur.
Black-crowned night heron (*nyticorax mycticorax*)	CSC	Various wetland habitats, including salt, brackish, and freshwater marshes, swamps, streams, lakes, and agricultural fields; colonial nester, usually in trees, occasionally in tule patches.	Suitable habitat does not exist in the project area. This species does not occur.
Bank swallow (*Riparia riparia*)	ST	Requires vertical banks/cliff with fine-textured/sandy soils near streams, rivers, lakes, or ocean to dig nesting hole; colonial nester, usually in trees, occasionally in tule patches.	Vertical cliffs or soft banks of Cache Creek may provide suitable nesting substrate. Suitable foraging habitat exists over the Creek CNNDB records indicate presence within 10 miles of the project area. High potential for foraging, but no suitable nesting habitat in project area to occur.
Northern Harrier (*Circus cyaneus*)	CSC	Forages over meadows, agricultural lands, and rangelands. Perches on ground or low fence posts. Nests on ground in fields or along the edges of marshes.	Suitable nesting and foraging habitat exists in the project area. Observed foraging in cropland during 2007 TRC field survey. Also observed in annual grasslands (TRC 2007a). High Potential to occur
Northern spotted owl (*strix occidentlis caurina*)	FT	Old growth forest or mixed stand of old-growth and mature trees. High multistory canopy dominated by big trees, many trees with cavities or broken tops, woody debris, and space under canopy.	Suitable habitat does not exist in the project area. Not likely to occur.

Table 4.5-1 Special-status Plant and Wildlife Species with the Potential to Occur in the Project Area

	Status	Habitat	Potential to Occur
Western yellow-billed cuckoo (*Coccyzua americanus occidentalis*)	FCS	Nests in riparian forests along broad, lower floodplains of larger river systems. Requires broad, well-developed, low-elevation riparian woodlands of primarily mature cottonwoods and willows.	Project area does not contain a substantial amount of broad, well-developed woodland habitat as a result it is not likely to occur.
MAMMALS			
Western red bat (*Lasiurus blossevillii*)	CSC	Roosts primarily in trees, less often in shrubs. Roost sites often are in edge habitats adjacent to streams, fields, or urban areas. Preferred roost sites are protected from above, open below, and located above dark ground-cover. Feeds over a wide variety of habitats including grasslands, shrub lands, open woodlands and forests, and croplands.	Man-made structures in the project area provide potential nighttime roosting habitat. Low potential to occur.

CSC= California Species of Special concern

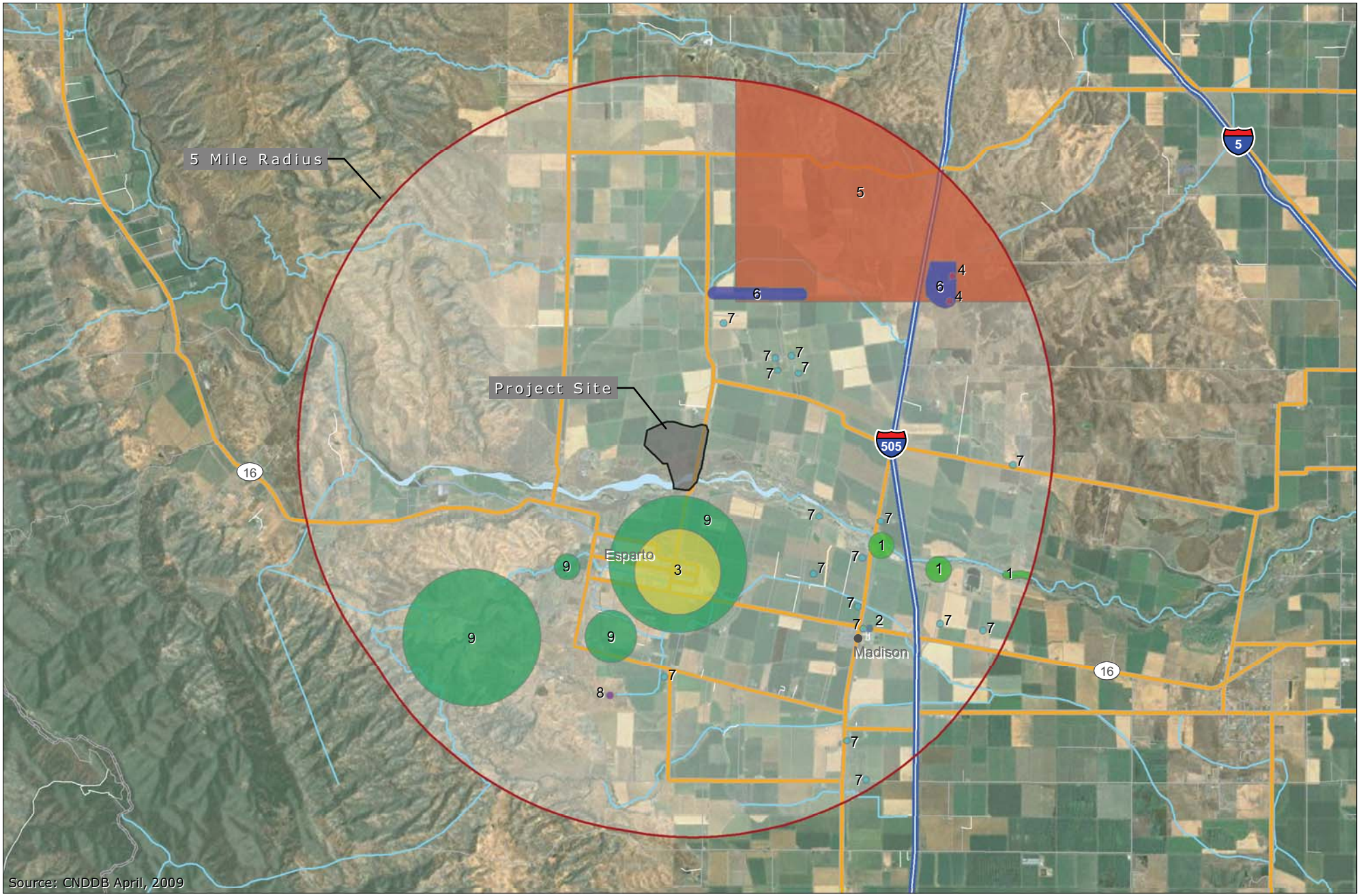
FCS= Federal Candidate Species

FE= Federally listed as Endangered

FT= Federally listed as Threatened

ST= State listed as Threatened

CNPS 1B = California Native Plant Society List 1B plants are rare throughout their range with the majority of them endemic to California. All of the plants constituting List 1B meet the definitions of Section 1901, Chapter 10 (Native Plant Protection Act) or Sections 2062 and 2067 (California Endangered Species Act) of the California Department of Fish and Game Code and are eligible for state listing. It is mandatory that they be fully considered during preparation of environmental documents relating to CEQA.



MAP LOCATION

CALIFORNIA

LEGEND

- 1, BANK SWALLOW
- 2, BLACK-CROWNED NIGHT HERON
- 3, BLENNOSPERMA VERNAL POOL ANDRENID BEE
- 4, BURROWING OWL
- 5, GIANT GARTER SNAKE
- 6, MOUNTAIN PLOVER
- 7, SWAINSON'S HAWK
- 8, VALLEY ELDERBERRY LONGHORN BEETLE
- 9, WESTERN RED BAT
- PROJECT SITE

N

0 1.25 2.5

MILES

FIGURE 4.5-1

DRAFT EIR

Granite Esparto Mining and Reclamation Project

CNDDB KNOWN OCCURRENCES OF SPECIAL STATUS SPECIES

ENTRIX | Environmental and Natural Resource Management Consultants

Plants

Heckard's Pepper-Grass (Lepidium latipes var. heckardii)

The Heckard's pepper-grass is categorized by the CNPS as a listed 1B species (CNPS 2009). This species can be found in the counties of Yolo, Glen, Solano, Colusa, and Merced (CNPS 2009, Calflora 2009, CDFG 2009a). This member of the mustard family is found in valley and foothill grasslands, alkaline flats and grasslands, and sometimes along vernal pool edges between sea level and 656 feet in elevation (CNPS 2009, Calflora 2009, CDFG 2009a). Heckard's pepper-grass is an annual herb that flowers from March to May (CNPS 2009). According to LFR, Inc. (2007), mildly and moderately alkaline soils are found within the project area. The Valley Foothill Riparian and Annual Grassland habitats found in the project area could provide potential habitat for the Heckard's pepper-grass. However, suitable habitat for this species was not found during a 2007 plant survey conducted by TRC and this species has not been reported from the project area (CDFG 2009a).

Reptiles

Northwestern Pond Turtle (Actinemys marmorata marmorata)

Northwestern pond turtle is a California species of special concern (CDFG 2009b). This turtle is present in much of California, west of the Sierra-Cascade crest in ponds, lakes, streams, and other permanent freshwater bodies of water below 5,250 feet in elevation. This species is uncommon in high gradient streams most likely due to low water temperatures, high current velocity, and low food resources, which may limit their local distribution (Holland 1994).

Mating usually occurs in late April or early May and oviposition can occur as early as late April and as late as early August, but most eggs are deposited during May and June, depending on local conditions. Females leave the aquatic environment and seek upland areas to lay their eggs, constructing a nest at least 10 to 12 centimeters deep to deposit the eggs. These nests may be found up to 0.3 mile away from the aquatic habitats (CDFG 2009a, Holland 1994). Aquatic habitats with adequate vegetative cover and exposed basking sites containing logs, rocks, and banks are heavily utilized. Western pond turtles are omnivorous generalists and opportunistic predators, eating small insects, aquatic invertebrates, fish, frogs, snakes, birds, and mammals (Zeiner et al. 1988).

The northwestern pond turtle is not reported from the project area from CNDDB records, but suitable habitat, including a permanent water source and adjacent upland areas for nesting, does exist along Cache Creek (TRC 2007). Thus, the northwestern pond turtle has moderate potential to occur in the project area.

Birds

Tricolored Blackbird (Agelaius tricolor)

The tricolored blackbird is a California species of special concern (CDFG 2009b). This blackbird is native to California. Most of the breeding population can be found throughout the Central Valley and at Toledo Pit in Riverside County, although small nesting colonies have been found locally in Oregon, Washington, Nevada, and coastal Baja, California. Major wintering concentrations are located in and around Sacramento-San Joaquin River Delta and coastal areas, including Monterey and Marin counties (Beedy 2008).

The tricolored blackbird is a colonial species that nests above water or ground in freshwater marsh vegetation such as cattails, tules, and blackberry thickets. This blackbird may also nest in the canopies of willows (Beedy 2008). The tricolored blackbird requirements for breeding sites are accessibility to open water, a protected nesting substrate, and a foraging area with insect prey within a few miles of the colony (CDFG 2009a). Foraging habitat for this species in all seasons includes pastures, agricultural fields, and dry seasonal pools with occasional foraging ground in riparian scrub, marsh boarders, and grassland habitats. Tricolored blackbirds typically leave their wintering areas in late March and early April for breeding locations in Sacramento County and throughout the San Joaquin Valley (Beedy and Hamilton 1997, Beedy 2008).

The emergent vegetation and willows found in the Valley Foothill Riparian habitat along Cache Creek and along irrigation canals in the project area may provide nesting habitat for the tricolored blackbird. However, potential nesting habitat found in the project area is narrow and sparse and probably does not provide adequate protection to support a breeding population. One CNDDB record documented the tricolored blackbird in Cache Creek on the right bank, about 8 miles east or the project area, west of County Road 94B, just northwest of Woodlandwatts Airport (CDFG 2009a) One CNDDB record documented tricolored blackbirds using a relatively small area that may be no wider than the emergent vegetation observed during the habitat assessment (TRC 2007a). The Cropland, Orchard, and Annual Grassland habitats in the project area provide foraging habitat for this species. Therefore, the species has limited potential for occurrence in the area.

Burrowing Owl (Athene cunicuiaria)

The burrowing owl is a California species of special concern (CDFG 2009b). Burrowing owls range throughout most of the interior western United States, southern Canada, the Central Valley of California, Southern California, throughout Mexico into Central America, and along the western half of Florida. This owl is a year-round resident in the Central Valley, San Francisco Bay region, Carrizo Plain, and Imperial Valley in the State of California (Gervais et al. 2008).

The burrowing owl is sedentary in nature and primarily a grassland species, but has adapted to landscapes highly altered by man. Basic habitat requirements for the burrowing owl are open, dry, gently rolling to flat grasslands, scrublands, road and railway rights-of-way, open urban habitats (i.e. airfields, open canals, ditches, drains, and golf courses), and agricultural lands (Gervais et al. 2008). This owl nests and roosts in animal burrows commonly excavated by the ground squirrel, but may also utilize burrows dug by a badger, coyote, or fox. Breeding season for this owl occurs from March to August, but can begin as early as February through December. The burrowing owl is known to forage close to their burrows on insects, small rodents, birds, amphibian, and reptiles; however, insects dominate their diet. (Gervais et al. 2008; Zeiner et al. 1990).

One occupied burrowing owl nesting burrow was observed on the adjacent mining operations to the west during surveys conducted in 1995 (Zentner and Zentner 1995 as cited in TRC (2007a). Grasslands in the study area had limited burrowing owl nesting potential, as suitable burrows were scarce at the time of 2007 TRC survey. Burrowing mammals such as ground squirrels were not observed during the assessment, nor were many suitable burrows. Due to the minimal number of mammal burrows found in the project area, there is only a low potential for burrowing owls to occur.

Swainson's Hawk (Buteo swainson)

The Swainson's hawk is listed as threatened in California (CDFG 2009c). Its breeding range includes the interior western United States, northern-central Mexico, northeastern Alaska and northwestern and south-central Canada, and the Central Valley of California; it winters primarily in

South America (CDFG 1993). The Central Valley population extends from Tehama County to Tulare and Kings Counties (ESTEP 2008). Currently, in Yolo County, the Swainson's hawk is distributed throughout low elevation agricultural regions east of the Interior Coast Range. The species is associated with agricultural cover type; and therefore, the distribution of the species generally follows the pattern of hay, grain, and row crops (YNHP 2009a).

The Swainson's hawk inhabits primarily grasslands, prairies, shrub-steppes, and agricultural landscapes such as dry and irrigated row crops containing scattered large trees or small groves, alfalfa and hay fields, pastures, and rangelands (YNHP 2009a, CDFG 2009d). Foraging habitat consists of open grasslands, grain crops, hay fields, and alfalfa fields (supporting rodent populations) adjacent to nesting opportunities. Primary food source for this hawk is the meadow vole but also includes rodents such as the deer mouse, pocket gopher, and the house mouse (ESTEP 2008). Nesting habitat consists of open areas with stands of few, dense-topped trees in juniper-sage flats, open riparian areas, and oak savannas. This hawk is known to nest in native trees such as valley oak (*Quercus lobata*), cottonwood (*Populus fremontia*), walnut (*Juglans californica*), and willow (*Salix* spp.) and occasionally in nonnative trees, such as eucalyptus (*Eucalyptus* spp.). Swainson's hawks typically nest in stands with only a few trees in the above-mentioned habitats, as well as within agricultural areas (ESTEP 2008). Hawks can become relatively habituated to human presence and activity. They readily occupy habitat within agricultural and rural residential areas, usually along roadsides where suitable nest trees are located (ESTEP 2008). Breeding occurs late March to late August, with peak activity late May through July (CDFG 2009d).

Suitable nesting habitat occurs in the tall eucalyptus trees and redwoods in the developed area near the house and barn and to a few stands of cottonwood near Cache Creek, though adjacent land provides numerous nesting opportunities for the Swainson's hawk. A minimal amount of foraging habitat exists in the project area in grassland areas and over agricultural fields. During the May 2007 survey, conducted by TRC, one Swainson's hawk was observed within the project area perched in a dead tree along the south bank of Cache Creek. In addition, during a site visit in March 2009 a Swainson's hawk was observed being harassed by crows in a grassland area, potentially utilized for foraging, adjacent to eucalyptus trees bordering the developed areas around the barn. Thus, the Swainson's hawk is considered to have moderate to high potential to nest and forage in the project area and high potential for incidental occurrence as a migrant to and from adjacent nesting and foraging sites.

Northern Harrier

The northern harrier is a California species of special concern (CDFG 2009b). This bird occurs year round and can be found in northwestern California, counties of Sonoma, Napa, Humboldt, Mendocino; in northeastern California, counties of Modoc, Shasta, and Klamath; in the Central Valley; in Sacramento and Colusa counties; along the central and southern coast; and in the southern deserts of California (Davis and Niemela 2008).

The northern harrier breeds and forages in habitats such as freshwater marshes, brackish and saltwater marshes, wet meadows, weedy borders of lakes, rivers and streams, annual and perennial grasslands, weed fields, pastures, and croplands (Davis and Niemela 2008). This hawk nests on the ground in dense, tall, and shrubby vegetation usually at the edge of a marsh. The nest is built out of a large mound of sticks in wet areas and a smaller cup of grasses on dry sites. Most of the nests are found in emergent wetlands or along rivers or lakes; but it may also nest in grasslands, grain fields, or on sage brush flats that are several miles from water (CDFG 2009a). Harriers usually perch on the ground but will use fence posts or other low perches and occasionally

trees (Johnsgard 1990 as cited in TRC 2007a). In the winter, communal ground roosts of a few to hundreds of birds can be found. Breeding season occurs from March through August (Davis and Niemela 2008).

Primary food source for the northern harrier are a variety of small to medium sized rodents, especially voles and passerines such as blackbirds and sparrows (Davis and Niemela 2008). Wintering or migrant northern harriers were observed foraging on the adjacent mining operations to the west during surveys conducted in 1995 (Zentner and Zentner 1995 as cited in TRC 2007a).

In 2007 during the TRC field survey, two northern harriers were observed in the project area and suitable foraging and nesting habitats exist in the project area. Thus, the species has a high potential to occur in the project area.

Mountain Plover (Charadrius montanus)

The mountain plover is a California species of special concern (CDFG 2009b). The plover breeds in the interior states of Montana, Wyoming, Colorado, New Mexico, and from the Texas Panhandle east to Nebraska and west to Oklahoma. This plover does not breed in California; however, it does winter in central and southern California and southern Arizona southward into Mexico. Primary wintering areas in California are in the Central and Imperial valleys from the months of September to mid-March with peak numbers during December through February (Hunting and Edson 2008).

The mountain plover is one of the few shorebirds that live in dry regions away from water, preferring short-grass prairies and dry, lowland areas that are flat and nearly devoid of vegetation. Wintering plovers were found to most frequently utilize fallow, grazed, or burned sites with average vegetation heights of less than 6 centimeters (Hunting and Edson 2008). However, mountain plovers are also known to forage on man-made landscapes such as sod farms, freshly plowed fields, and newly sprouted grain fields (CDFG 2009a). This plover feeds primarily on beetles, grasshoppers, crickets, and flies (Davis and Edson 2008).

The annual grasslands and agricultural fields in the project area may provide suitable wintering habitat for potentially occurring mountain plovers. One CNDDB record of the plover was found approximately 2 miles north of the project area (CDFG 2009a). The species is considered to have moderate potential to winter in the area.

Bank Swallow (Riparia riparia)

The bank swallow is listed as threatened in California (CDFG 2009c). It is a locally common to uncommon migrant resident in northern and central California. In the summer, this swallow is restricted to riparian, lacustrine, and coastal areas with vertical banks, bluffs, and cliffs with fine-textured or sandy soils, into which it excavates nesting holes (CDFG 2009e). Currently, the bank swallow can be found in Siskiyou, Shasta, and Lassen counties and along the Sacramento River from Shasta County south to Yolo County (YNHP 2009b, CDFG 2009e).

The bank swallow inhabits riparian, lacustrine, grassland, wetlands, meadows, and croplands primarily for foraging (YNHP 2009b). This swallow feeds primarily on flying terrestrial and aquatic insects such as mayflies, flies, bees, and beetles (CDFG 2009e, CDFG 1992). Important habitat characteristics include soil moisture and texture, orientation of the bank face, verticality of the bank face, and proximity of the colony to foraging areas (CDFG 1992). This swallow requires fine-textured or sandy banks or cliffs to excavate horizontal tunnels and burrows to nest in. The bank swallow almost always nests near water, and where nests are lined with grasses and other plant

material and feathers (CDFG 2009e). Breeding areas are widely dispersed throughout northern and central California in major lowland valleys and coastal areas where alluvial soils exist. The major breeding population is confined to the Sacramento and Feather rivers and major tributaries north of their confluence (CDFG 1992). Throughout California, colonies are mostly located amidst lowland vegetation types including riparian forests dominated by willows (*Salix spp.*) and Fremont cottonwood (*Populus fremontii*). Many colonies along the Sacramento and Feather rivers occur near cultivated crops, including deciduous orchards, irrigated row crops and dry-land grain crops. Colonies in northeastern California occur under irrigated pasture, riparian forests, and desert shrub habitats. Bank swallows arrive in Central California in late March to mid-April to mate. Nesting activities are completed by mid-July and nests are abandoned (CDFG 1992, YNHP 2009b).

Riverine and Valley Foothill Riparian habitats along Cache Creek provide potential nesting substrate for the bank swallow. Agricultural fields and waterways provide suitable foraging opportunities. Numerous CNDDB records of the species exist along Cache Creek (CDFG 2009a). The species is considered to have high potential for occurrence in the project area for foraging. Because the soil forming the banks of Cache Creek in the project area is gravelly (NRCS 2007), and steep faults do not occur along Cache Creek within the project area, the bank swallow is unlikely to nest in the existing habitat.

Western Red Bat (Lasiurus blossevillii)

The western red bat is a California species of special concern (CDFG 2009b).The red bat is locally common throughout Central Valley California, along the Sacramento and San Joaquin rivers, and also occurs along the central and southern coasts (Pierson et al. 2006).

The western red bat is strongly associated with riparian habitats, particularly large stands of cottonwoods or sycamores (Pierson et al. 2006). Roosting habitat includes forests and woodlands from sea level up through mixed conifer forests. The bat roosts primarily in trees and shrubs. Roost sites often are in edge habitats adjacent to streams, fields, orchards, or urban areas. Preferred roost sites are protected from above; lacking lower perches that would allow visibility from predators, open below; allowing bat to drop downward for flight, and located above dark, ground cover; to minimize solar reflection (WBWG 2005).

The red bat feeds over a wide variety of habitats including grasslands, shrublands, open woodlands and forests, and croplands. They consume a variety of insects. The red bats primary food source includes moths, crickets, beetles, and cicadas and captures and locates prey via echolocation (Pierson et al. 2006). This species makes north-south migrations in spring and fall that may be hundreds of miles. In one study, densities of the Western red bat in the Central Valley are at their peak during July and August, declining in the fall with overall bat activity lowest in September (Pierson et al. 2006). Red bats mate in late summer or early fall. Females become pregnant in spring and have a pregnancy of 80-90 days (WBWG 2005).

Habitat requirements in Yolo County may include open, free water for drinking and foraging, undisturbed foliage roost sites that provide protection from predators, and structurally diverse vegetation that support a diversity of insect prey for foraging habitat. Water features are a vital habitat component because bats often drink immediately after emergence and water is an important source and concentration site for insects (YNHP 2009c).

According to the CNDDB, this bat was last observed in 1955 in orchards near Esparto (CDFG 2009a). Therefore, the potential for this species to occur within the project area is low. It has not been observed for many years.

REGULATORY SETTING

Federal

Endangered Species Act of 1973

The federal Endangered Species Act (16 United States Code [USC] Section 1531 et seq.; 50 Code of Federal Regulations [CFR] Parts 17 and 222) includes provisions for protection and management of species that are federally listed as threatened or endangered and designated critical habitat for these species. Section 7 mandates that the USFWS is the administering agency for terrestrial and avian species and resident fish. National Marine Fisheries Service (NMFS) is the administering agency for anadromous fish. The Applicant would be required to consultation with USFWS and NMFS to ensure the proposed project actions do not jeopardize the continued existence of a listed species or destroy or adversely modify critical habitat for listed species.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (16 USC Sections 703-711; 50 CFR Subchapter B) includes provisions to protect migratory birds, including basic prohibitions against any taking not authorized by federal regulation. The administering agency for this act is the USFWS.

Rivers and Harbors Act

The Rivers and Harbors Act (Section 10; 33 USC Section 201 et seq.) protects navigable waters of the United States. The administering agency for this act is the U.S. Army of Corps of Engineers (USACE).

Clean Water Act of 1977

The Clean Water Act (CWA) (33 USC Sections 1251-1376; 30 CFR Section 330.5[a] 26) provides for the protection of wetlands. The administering agency for this act is the USACE.

As outlined in the delineation report (TRC 2007b) the project area includes 47 acres (43.3 acres of riverine habitat and 3.7 acres of valley foothill riparian) within Cache Creek and adjacent riparian habitat. The USACE and Regional Water Quality Control Board (RWQCB) “waters of the U.S.” include the 43.3 acres of riverine habitat within Cache Creek. Of this, a total of 0.1 acre consists of USACE jurisdictional wetlands. However, after further analysis of the wetland delineation, by ENTRIX biologists, some of the vegetated waters of the State were not included as federal jurisdictional wetlands, and therefore the acreage may increase from 0.1 acre. The sample site, labeled datapoint 5, is located in a riverwash, and by definition riverwash is partially hydric (UC Davis 2009). The remaining 43.2 acres would be considered USACE jurisdictional non-wetland waters. The wetlands appear to have developed in depressions in the creek bed created by scour and subsequent ponding of water. Table 4.5-2 provides a summary of jurisdictional waters and wetlands in the project area. The acreages of jurisdictional waters and wetlands are the total for the 390 total land surveyed (i.e., two full parcels).

Table 4.5-2 Summary of Jurisdictional Waters and Wetlands on the Property

Waters of the State (acres)	Waters of the U.S. Non-Wetland (acres)	Wetlands (acres)
47	43.2	0.1 (may increase)

Executive Order 11990—Protection of Wetlands (May 24, 1977)

Executive Order 11990 provides for the protection of wetlands. The administering agency for this order is the USACE.

State

California Endangered Species Act of 1984

The California Endangered Species Act (California Fish and Game Code [CFGC] Sections 2050—2098) includes provisions for the protection and management of species listed as endangered or threatened or designated as candidates for such listing. The act includes a requirement for consultation "to ensure that any action authorized by a state lead agency is not likely to jeopardize the continued existence of any endangered or threatened species or results in the destruction or adverse modification of habitat essential to the continued existence of the species," (Section 2090). Plants of California declared to be endangered, threatened, or rare are listed at 14 California Code of Regulations Section 670.2. Animals of California declared to be endangered, threatened, or rare are listed at 14 California Code of Regulations Section 670.5. The administering agency for this act is the CDFG. The CDFG's goal and responsibility is to maintain viable populations of all native species.

Native Plant Protection Act of 1977

The Native Plant Protection Act (CFGC Section 1900 et seq.) lists State-designated rare and endangered plants and provides specific protection measures for identified populations. The administering agency for this act is the CDFG.

Natural Community Conservation Planning Act

The Natural Community Conservation Planning Act allows for the identification and provision of measures necessary to conserve and manage natural biological diversity within the plan area while allowing compatible use of the land. The purpose of natural community conservation planning is to sustain and restore those species and their habitat identified by CDFG that are necessary to maintain the continued viability of biological communities impacted by human changes to the landscape. A number of Natural Community Conservation Plans (NCCPs), which function as a Habitat Conservation Plan (HCP) and more, have been established in various areas of the State.

California Species Preservation Act of 1970

The California Species Preservation Act (CFGC Sections 900-903) includes provisions for the protection and enhancement of the birds, mammals, fish, amphibians, and reptiles of California. The administering agency for this act is the CDFG.

California Fish and Game Code Section 1600 et seq.

Section 1600 et seq., Streambed Alteration, mandates that "it is unlawful for any person to substantively divert or obstruct the natural flow or substantially change the bed, channel, or banks of any river, stream, or lake designated by the department, or use any material from the streambeds, without first notifying the department of such activity. Streambed alteration must be permitted by CDFG through a Streambed Alteration Agreement. CDFG defines a streambed as a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life and lakes as natural lakes and human-made reservoirs." CDFG jurisdiction includes ephemeral, intermittent, and perennial watercourses and can extend to habitats adjacent to watercourses.

California Fish and Game Code Sections 1800–1802

Sections 1800—1802 mandate that the "department has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants, and habitat necessary for biologically sustainable populations of those species. The department, as trustee for fish and wildlife resources, shall consult with lead and responsible agencies and shall provide, as available, the requisite biological expertise to review and comment upon environmental documents and impacts arising from project activities, as those terms are used in the California Environmental Quality Act (CEQA)." The administering agency for these code sections is the CDFG.

California Fish and Game Code Section 3503

Section 3503 prohibits the taking or possession of any bird nest or eggs, except as otherwise provided by the code or any regulation made pursuant to the code. The administering agency is the CDFG.

California Fish and Game Code Sections 3511 and 5050

Sections 3511 and 5050 prohibit the taking or possessing of birds, reptiles, or amphibians listed as "fully protected." The administering agency is the CDFG.

Surface Mining and Reclamation Act of 1975

Acceptable practices and performance standards have been developed as part of Surface Mining and Reclamation Act (SMARA) while providing protection to wildlife and the successful revegetation of mined lands.

- **Section 2712 (b).** The production and conservation of minerals are encouraged, while giving consideration to values relating to recreation, watershed, wildlife, range and forage, and aesthetic enjoyment.

There are an additional 12 standards in the SMARA that provide principles for the protection and restoration of wildlife habitats they are included in detail in Section 4.6 of the 1996 CCRMP EIR. For more detail, see Table 4.11-6, in Section 4.11, Land Use.

Local

Project consistency with county regulations is discussed in Section 4.11, Land Use. Project consistency with General Plan policies and other applicable regulations is discussed below.

2030 Countywide General Plan (2009)

The County's 2030 Countywide General Plan (Yolo County 2009b) contains ten policies relevant to the project:

Land Use and Community Character Element

- **CC-4.32.** Emphasize the use of regionally native drought tolerant plants for landscaping where appropriate.

The project would use native drought tolerant plants for landscaping the berms as described in the Habitat Restoration and Landscape Visual Screening Plan in Appendix C. Therefore, the project would be consistent with this policy.

Circulation Element

- **CI-4.5.** Roads and road-related structures (bridges, culverts, retaining walls, abutments, etc.) located in or near watercourses shall be placed, designed, built, and landscaped so as to minimize the impact to riparian corridors, including reducing erosion during and after construction, accommodating flood flows, and minimizing grading on slopes greater than 20 percent.

As described in Chapter 3 under the Streambank Stabilization Plan (SSP), the stabilization would include grading of the existing bank to a uniform slope, providing protection to the toe (i.e., base) of the slope, and revegetation of the bank and toe with a mixture of non-invasive annual grassland species for the first one or two years, followed by a native grassland seed mix. Therefore, the project would be consistent with this policy.

Conservation and Open Space Element

- **CO-1.22.** Emphasize the use of native grasses, shrubs and trees as the primary focus of landscaping and restoration work within resource parks and other open spaces.

The project would use native trees and grasses for landscaping the berms as described in the Habitat Restoration and Landscape Visual Screening Plan (Appendix C). Therefore, the project would be consistent with this policy.

- **CO-2.9.** Protect riparian corridors to maintain and balance wildlife values.

The project's construction and operation plans include protection for the riparian corridors. As part of the proposed project-level Habitat Restoration and Landscape Visual Screening Plan (Appendix C), the project includes creation of habitats such as open water, wetlands, and riparian habitat for use by various wildlife species. As such, the project would be consistent with General Plan policies that stress the preservation and enhancement of sensitive biological resources. Therefore, the project would be consistent with this policy.

- **CO-2.10.** Encourage the restoration of native habitat.

The project would use native trees and grasses for landscaping the berms. All other restoration work would be open water or farmland. In addition, the project would restore habitat within Cache Creek prior to construction. Therefore, the project would be consistent with this policy.

- **CO-2.14.** Ensure no net loss of oak woodlands, alkali sinks, rare soils, vernal pools or geological substrates that support rare endemic species. The limited loss of blue oak woodland and grasslands may be acceptable, where the fragmentation of large forests exceeding 10 acres is avoided and losses are mitigated to the extent feasible.

According to biological and geological technical studies, there are no oak woodlands, alkali sinks, rare soils, vernal pools or geological substrates are located within the project site. Therefore, the project would be consistent with this policy.

- **CO-2.15.** Encourage the use of mosquito abatement methods that are compatible with protecting fish and wildlife, including native insect pollinators.

No mosquito abatement methods have been proposed for use on this project. The Sacramento-Yolo Mosquito & Vector Control District may decide that abatement methods are needed at a later date.

- **CO-2.30.** Promote native perennial grass habitat restoration and controlled fire management in grazing lands to reduce invasive species cover and enhance rangeland forage.

The restoration plan includes 38 acres to be restored as dry pasture. Native perennial grasses would be used for the restoration as described in the Habitat Restoration and Landscape Visual Screening Plan (Appendix C). Therefore, the project would be consistent with this policy.

- **CO-2.32.** Protect wetland ecosystems by minimizing erosion and pollution from grading, especially during grading and construction projects.

Project construction includes the grading and construction of a berm along the southern edge of the project site that would minimize erosion and pollution into Cache Creek. Therefore, the project would be consistent with this policy.

- **CO-3.1.** Encourage the production and conservation of mineral resources, balanced by the consideration of important social values, including recreation, water, wildlife, agriculture, aesthetics, flood control, and other environmental factors.

This EIR analyzes and mitigates for the environmental impacts, including water, wildlife, agriculture, aesthetics, and other environmental factors associated with the project as discussed in the Impacts and Mitigation subsection. Therefore, the project would be consistent with this policy.

Off-Channel Mining Plan

The County's OCMP contains the following actions relevant to the project:

Chapter 6: Biological Resources Element

- Action 6.4-2. Provide for the development of shallow areas along reclaimed off-channel excavations that extend below the groundwater level, to create wetland and riparian habitat.

The Habitat Restoration and Landscape Visual Screening Plan (Appendix C) indicates the applicant's proposal to create vegetated wetlands and other natural habitat area along the shoreline edge of the reclaimed lake, which will create a transition to the lake itself which extends below the groundwater level.

- **Action 6.4-3.** Require that all proposed off-channel surface mining operations that will result in the short-term loss of row crop agricultural lands and/or grasslands, obtain a 2081 Permit from the California Department of Fish and Game. The 2081 Permit will provide mitigation for the temporary effects of mining on Swainson's hawk habitat.

Impact 4.3-1 in Section 4.3, Agriculture, addresses temporary and permanent loss of agricultural resources. Impact 4.5-1 in this Section addresses impacts to Swainson's hawk foraging and nesting habitat.

- **Action 6.4-4.** Promote the eradication of invasive species, such as the giant reed and tamarisk, in areas where they inhibit the growth and development of native riparian vegetation, especially in the area upstream of the Capay Bridge (County Road 85).

The Habitat Restoration and Landscape Visual Screening Plan (Appendix C) includes provisions that address weed (invasive species) control. The restoration design includes restoring a basin at the site with marsh and riparian wetlands. The design for this basin includes the elevations needed to provide adequate hydrology to support these habitats. This Plan does not provide details on the planting to be done for the Test 3 Line Maintenance Area. The Applicant proposes to apply for a separate Flood Hazard Development Permit for that area. However, the riparian restoration proposed for the mining area restoration is similar to restoration that would be implemented along the channel. Therefore, the project would be consistent with this action.

- **Action 6.4-5.** Include provisions to enhance habitat for special-status species in restoration components of reclamation plans, where feasible.

The Habitat Restoration and Landscape Visual Screening Plan (Appendix C) includes provisions that address habitat enhancement for special-status species (wildlife). The restoration design includes restoring a basin at the site with marsh and riparian wetlands. The design for this basin includes the elevations needed to provide adequate hydrology to support these habitats. This Plan does not provide details on the planting to be done for the Test 3 Line Maintenance Area. The Applicant proposes to apply for a separate Flood Hazard Development Permit for that area. However, the riparian restoration proposed for the mining area restoration is similar to restoration that would be implemented along the channel. Therefore, the project would be consistent with this action.

- **Action 6.4-7.** Restore riparian habitat throughout the planning area, wherever appropriate. However, revegetative efforts should be primarily focused on implementing recommendations described in the Technical Studies and the subsequent Restoration Recommendations incorporated into the CCRMP.

The Habitat Restoration and Landscape Visual Screening Plan (Appendix C) includes provisions that address restoration of riparian habitat in the project area. The restoration design includes restoring a basin at the site with marsh and riparian wetlands. The design for this basin includes the elevations needed to provide adequate hydrology to support these habitats. This Plan does not provide details on the planting to be done for the Test 3 Line Maintenance Area. The Applicant proposes to apply for a separate Flood Hazard Development Permit for that area. However, the riparian restoration proposed for the mining area restoration is similar to restoration that would be implemented along the channel. Therefore, the project would be consistent with this action.

- **Action 6.4-8.** Include vegetated buffers between restored habitat areas and adjoining farmland, in order to minimize the potential for riparian areas to serve as harbors for predators and insect pests. Said buffers will also reduce the noise, dust, and spraying generated by agricultural operations.

The Habitat Restoration and Landscape Visual Screening Plan (Appendix C) includes provisions that address vegetated buffers between riparian habitat areas and adjoining farmland, as required in the OCMP. The restoration design includes restoring a basin at the site with marsh and riparian wetlands. The design for this basin includes the elevations needed to provide adequate hydrology to support these habitats. This Plan does not provide details on the planting to be done for the Test 3 Line Maintenance Area. The Applicant proposes to apply for a separate Flood Hazard Development Permit for that area. However, the riparian restoration proposed for the mining area restoration is similar to restoration that would be implemented along the channel. Therefore, the project would be consistent with this action.

Cache Creek Resources Management Plan

The County's CCRMP contains the following performance standards relevant to the project:

Chapter 4: Biological Resources Element

- **Performance Standard 4.5-2.** No excavation shall take place within twenty-five (25) feet of any mature trees to be retained within the channel.

The project proposes no excavation within 25 feet of a mature tree to be retained in the channel. Therefore, the project would be consistent with this performance standard. The proposed fill area may require removal of trees in order to implement the CCIP/Test 3 requirements.

- **Performance Standard 4.5-3.** Oaks and drought-tolerant shrubs should be planted on streambank slopes due to the lack of water on the high elevations. Oaks and shrubs should be especially encouraged on slopes facing north or east.

The Habitat Restoration and Landscape Visual Screening Plan (Appendix C) includes provisions for planting oaks and drought-tolerant shrubs on slopes. This Plan also includes specific details on seeding and planting, including sizes of planting holes and provisions for the use of willow cuttings. Therefore, the project would be consistent with this performance standard.

- **Performance Standard 4.5-4.** Shallow terraces may be created along the banks of the low-flow channel from I-505 to the Capay Bridge, with cottonwood and willow pole cuttings planted on the benches. One alternative would involve digging short trenches diagonally to the low-flow channel (angled downstream), with prerooted willow and cottonwood cuttings planted on the upstream edge of the trench. Another would be to create in-channel riparian plots along this reach to trap bed materials to aid in creating the shallow terraces. These measures would allow for the development of a ribbon of vegetation to establish along the low-flow channel in this area, thereby helping to connect the riparian corridor.

The Habitat Restoration and Landscape Visual Screening Plan (Appendix C) includes provisions for planting oaks and drought-tolerant shrubs on slopes, seeding and/or planting immediately after final grading. Therefore, the project would be consistent with this performance standard.

- **Performance Standard 4.5-5.** Planting shall be conducted immediately after grading, before invasive vegetation has become established. If undesirable vegetation does become established, it should be removed by mechanical means and approved herbicides, such as glyphosphate, under the supervision of a licensed applicator.

The Habitat Restoration and Landscape Visual Screening Plan (Appendix C) includes provisions for seeding and/or planting immediately after final grading. Therefore, the project would be consistent with this performance standard.

- **Performance Standard 4.5-6.** Dense vegetation shall be emphasized along the stream bank to create a distribution of velocities within the channel, with the highest velocities occurring within the low-flow channel. To ensure adequate water supply for new plantings, secure irrigation systems shall be provided for revegetation projects within the planning area.

The Habitat Restoration and Landscape Visual Screening Plan (Appendix C) includes provisions for creating a distribution of velocities within the channel, with the highest velocities occurring within the low-flow channel. Therefore, the project would be consistent with this performance standard.

- **Performance Standard 4.5-8.** Fertilizer shall not generally be used because its application favors non-native vegetation. Where appropriate, however, trees and shrubs may be planted with a slow-release fertilizer.

The Habitat Restoration and Landscape Visual Screening Plan (Appendix C) includes provisions for limited use of slow-release fertilizer. Therefore, the project would be consistent with this performance standard.

- **Performance Standard 4.5-9.** All plant materials should be collected in the vicinity of the project site in order to maintain the genetic stock and provide the most site-adapted ecotypes. If seeding of native herbaceous species is proposed, seeds should be collected, cleaned, tested for viability, and stored appropriately by a qualified native seed supplier. Cottonwood cuttings shall be collected and contract-grown at a nursery with staff experienced in the propagation of native plants. Alternatively, cottonwood cuttings can be collected from vegetation in the project vicinity and stockpiled for planting within twenty-four (24) hours of collection. Willow cuttings can be collected from vegetation in the project vicinity and stockpiled for planting within 24 hours of collection. Other woody riparian species should be collected and contract-grown from local seed by a qualified native plant nursery.

The Habitat Restoration and Landscape Visual Screening Plan (Appendix C) includes provisions for native plant material and seed from local sources and local nurseries that grow plants from local sources. Therefore, the project would be consistent with these performance standards.

- **Performance Standard 4.5-10.** Planting should be initiated in the fall after the first soaking rains. Container plants should be planted in holes at least twice as deep and wide as the plant container. The rootball should be thoroughly dampened before planting and the planting holes deeply irrigated prior to planting. After planting, the holes should be backfilled with native substrate material (with no mulch added) and thoroughly tamped to remove air pockets. Willow cuttings may be planted in clusters in planting holes prepared and backfilled in a similar manner. Trees, shrubs, and willow cutting clusters should be located in randomly spaced, naturally clumped patterns. Herbaceous seed mix (if used) should be hydroseeded (without hydromulch) or broadcast over planting area, then covered with blown rice straw meeting State "weed-free" standards at one ton per acre. Soil stabilizer or tackifier, such as Ecology Controls M-Binder,

should be included at 150 pounds per acre. Hydromulching is not recommended because of a history of poor results with native seedings.

The Habitat Restoration and Landscape Visual Screening Plan (Appendix C) includes specific details on seeding and planting, including sizes of planting holes and provisions for the use of willow cuttings. No hydro-mulching is proposed, in accordance with the CCRMP. This Plan also includes provisions for wetland plantings primarily using species listed in the CCRMP and either using CCRMP densities or somewhat lower densities to avoid dense stand of aquatic vegetation in shallow areas that might harbor mosquitoes. Therefore, the project would be consistent with this performance standard.

- **Performance Standard 4.5-12.** The site should be closely monitored for competing non-native vegetation. Non-native species can be sprayed or removed by hand as necessary to attain the success criteria, as defined in each site-specific plan.

The Habitat Restoration and Landscape Visual Screening Plan (Appendix C) includes provisions for monitoring for non-native competition. Therefore, the project would be consistent with this performance standard.

- **Performance Standard 4.5-13.** The following guidelines shall be followed when developing wetland habitat areas:

  (a) Limit dense stands of aquatic vegetation in shallow areas to lower mosquito harborage and enhance wave action. This will also serve as substrate for mosquito predators.

  (b) The banks of areas that retain water after June 1 (the beginning of the optimal mosquito breeding season) shall be steep enough to prevent isolated pooling as the water level recedes, to allow for wave action and to provide access by mosquito predators. Shorelines shall be configured so as not to isolate small channels or shallow ponding areas from the main body of water, to provide continuos access by predators, especially mosquito fish.

  (c) Seasonal marshes shall be designed to have at least four months of soil saturation or shallow inundation. Water depths shall not exceed two (2) feet of water.

  (d) Marsh species shall be planted every six (6) feet, using plugs salvaged from marshes in the immediate vicinity or obtained from a nursery. Transplanting shall take place within twelve (12) hours after salvage and the root masses shall be kept continuously inundated from the time of transplanting.

  (e) Wetland areas shall cover a minimum of one (1) acre. Side slopes shall be no steeper than 3:1 (horizontal:vertical). Small islands and complex shorelines shall be provided to create a diverse environment. Wetland designs shall include provisions for the wetlands to be partially drained periodically, in order to allow for the reseeding of aquatic plants and to promote the decay of built up organic debris.

  (f) Pit bottoms should be recontoured to create areas for waterfowl nesting and depressions to provide a more permanent water feature. Islands should generally be located on the upwind side of the water body to minimize exposure to the prevailing winds. Island slops above the water level should be no steeper than 2:1 (horizontal:vertical). Emergent vegetation shall be placed around the edges of islands to reduce wave-related erosion. Shrubs shall be widely spaced. Trees and tall shrubs shall not be planted on the islands, since predators perch in them to prey on waterfowl.

(g) Appropriate species and densities for marsh restoration may include the following:

Species (common name)	Density (plugs per acre)
Creeping spikerush	200
Baltic rush	100
Tule	100
Bulrush	100
Three-square	10
Beaked sedge	5
Scouring rush	5
Bottonbush	5

The Habitat Restoration and Landscape Visual Screening Plan (Appendix C) includes provisions for planting oaks and drought-tolerant shrubs on slopes, seeding and/or planting immediately after final grading, weed control, irrigation, limited use of slow-release fertilizer, and provisions for native plant material and seed from local sources and local nurseries that grow plants from local sources. This Plan also includes specific details on seeding and planting, including sizes of planting holes and provisions for the use of willow cuttings. No hydro-mulching is proposed, in accordance with the CCRMP. This Plan also includes provisions for wetland plantings primarily using species listed in the CCRMP and either using CCRMP densities or somewhat lower densities to avoid dense stand of aquatic vegetation in shallow areas that might harbor mosquitoes. Therefore, the project would be consistent with this performance standard.

- **Performance Standard 4.5-14.** The following guidelines shall be followed when developing riparian woodland habitat areas:

  (a) Riparian woodland shall be established only where there are coarse slopes containing soil types such as cobbly loam, gravelly loam, or other loamy textures. Where slopes contain significant clay layers, open woodland s or grasslands shall be restored instead.

  (b) Trees and shrubs shall be planted in clusters to create alternate patterns of open and enclosed spaces.

  (c) Appropriate species and densities for riparian woodland restoration may include the following:

Species (common name)	Density (number or pounds/acre)
Wild rose	36
Valley oak	33
Fremont cottonwood	26
Black willow	23
Red willow	23
Arroyo willow	23
Sandbar willow	23
Goodings willow	23
Native blackberry	19
Box elder	18
Wild grape	16
Dogwood	16
Oregon ash	16

Species (common name)	Density (number or pounds/acre)
Western sycamore	16
Blue elderberry	12
Mugwort	10
Mule fat	6
Creeping wildreye	16

The Habitat Restoration and Landscape Visual Screening Plan (Appendix C) includes provisions for planting oaks and drought-tolerant shrubs on slopes, seeding and/or planting immediately after final grading, weed control, irrigation, limited use of slow-release fertilizer, and provisions for native plant material and seed from local sources and local nurseries that grow plants from local sources. This Plan also includes specific details on seeding and planting, including sizes of planting holes and provisions for the use of willow cuttings. No hydro-mulching is proposed, in accordance with the CCRMP. This Plan also includes provisions for wetland plantings primarily using species listed in the CCRMP and either using CCRMP densities or somewhat lower densities to avoid dense stand of aquatic vegetation in shallow areas that might harbor mosquitoes. Therefore, the project would be consistent with the performance standard.

- **Performance Standard 4.5-16.** The following guidelines shall be followed when creating habitat areas within previously mined areas outside of the active channel:

  (a) Basins that have floors close to the groundwater level should be restored to seasonal marsh and riparian wetlands. Those that are permeable, dominated by sand and gravel, should promote woodland habitat.

  (b) Pit floors shall have sufficient topsoil and overburden to support the proposed habitat. Overburden and soil may be obtained from the diversion of agricultural tailwater, aggregate processing wash fines, of deposition by the creek. Areas to be planted shall be appropriately prepared prior to planting. If necessary, soils may be tested after preparation has occurred in order to determine the need for soil amendments.

  (c) Pits should then be planted and irrigated until the plants have established. Agricultural tailwater is encouraged as an irrigation source. It would provide a valuable source of water for revegetation projects, and would also provide bio-filtering for the sediment and residue pesticides contained within the tailwater.

  (d) Areas that will not be planted may be graded to create steep, barren slopes to provide habitat for the bank swallow.

  (e) Except in important recharge areas, levees may be removed, breached at the downstream end, or a culvert installed at the downstream end to allow for dynamic interaction with the variable water level in the creek. Natural flooding will provide additional water, increase the diversity of tree species through colonization, and allow for the accumulation of organic nutrients and sediment.

  (f) Habitat plans shall take into account the range of expected water level fluctuations and shall adjust the siting and design of the pit accordingly.

  (g) In areas where fluctuating groundwater levels may affect revegetation plots at wet pit sites, consult with the TAC hydrogeologist and biologist to develop a viable, site-specific planting area.

The Habitat Restoration and Landscape Visual Screening Plan (Appendix C) includes provisions for planting oaks and drought-tolerant shrubs on slopes, seeding and/or planting immediately after final

grading, weed control, irrigation, limited use of slow-release fertilizer, and provisions for native plant material and seed from local sources and local nurseries that grow plants from local sources. This Plan also includes specific details on seeding and planting, including sizes of planting holes and provisions for the use of willow cuttings. No hydro-mulching is proposed, in accordance with the CCRMP. This Plan also includes provisions for wetland plantings primarily using species listed in the CCRMP and either using CCRMP densities or somewhat lower densities to avoid dense stand of aquatic vegetation in shallow areas that might harbor mosquitoes. Therefore, the project would be consistent with the performance standard.

- **Performance Standard 4.5-17.** Topsoil and vegetation removed from the streambed shall be salvaged for use in restoration planting within the channel.

The Habitat Restoration and Landscape Visual Screening Plan (Appendix C) includes provisions for planting oaks and drought-tolerant shrubs on slopes, seeding and/or planting immediately after final grading, weed control, irrigation, limited use of slow-release fertilizer, and provisions for native plant material and seed from local sources and local nurseries that grow plants from local sources. This Plan also includes specific details on seeding and planting, including sizes of planting holes and provisions for the use of willow cuttings. No hydro-mulching is proposed, in accordance with the CCRMP. This Plan also includes provisions for wetland plantings primarily using species listed in the CCRMP and either using CCRMP densities or somewhat lower densities to avoid dense stand of aquatic vegetation in shallow areas that might harbor mosquitoes. Therefore, the project would be consistent with thie performance standard.

- **Performance Standard 4.5-20.** The in-channel area located west of the Capay Bridge is the highest priority for tamarisk elimination. Weed control, using the most up-to-date technology, shall begin within the first year after ground disturbance in order to prevent tamarisk from outcompeting native vegetation. A combination of mulching and spraying is preferred. Chemicals should be applied to freshly cut stumps and must cover the entire cambium layer. Cut plants should be removed from the channel and either disposed of or burned. Cutting and chemical treatment is most effective during from July through "first frost" (November), when the plant enters dormancy. Application should be repeated to control shoots growing from root systems. All chemical spraying must be done by a certified herbicide applicator. All cut plants should either be disposed of or burned. Monitoring and mapping of the tamarisk removal shall be coordinated with the Yolo County Weed Management Area efforts.

  In marshy areas, when chemical treatments are prohibited, tamarisk may be uprooted with a backhoe or tractor. This is best performed when the plants are flowering and more visible. When the soil is moist, saplings may also be removed by hand with relative ease.

The Habitat Restoration and Landscape Visual Screening Plan (Appendix C) includes provisions for planting oaks and drought-tolerant shrubs on slopes, seeding and/or planting immediately after final grading, weed control, irrigation, limited use of slow-release fertilizer, and provisions for native plant material and seed from local sources and local nurseries that grow plants from local sources. This Plan also includes specific details on seeding and planting, including sizes of planting holes and provisions for the use of willow cuttings. No hydro-mulching is proposed, in accordance with the CCRMP. This Plan also includes provisions for wetland plantings primarily using species listed in the CCRMP and either using CCRMP densities or somewhat lower densities to avoid dense stand of aquatic vegetation in shallow areas that might harbor mosquitoes. Therefore, the project would be consistent with the performance standard.

- **Performance Standard 4.5-21.** Giant reed shall be removed from areas of high flow velocity, using the most up-to-date technology, especially within the channel area located west of the Capay Bridge. The most effective control is the chemical application of Roundup (away from water) and Aqua Master (near water) during March and April. Optimum results are achieved with total spray coverage. Alternatively, reed may be sprayed with follow up removal of the dead plants. All cut plants should be either disposed of or burned. Applications should be repeated to treat shoots that resprout when re-growth is approximately 4 feet tall and 60% of the original stem density. All chemical spraying must be done by a certified herbicide applicator. Monitoring and mapping of the giant reed removal shall be coordinated with the Yolo County Weed Management Area efforts.

The Habitat Restoration and Landscape Visual Screening Plan (Appendix C) includes provisions for planting oaks and drought-tolerant shrubs on slopes, seeding and/or planting immediately after final grading, weed control, irrigation, limited use of slow-release fertilizer, and provisions for native plant material and seed from local sources and local nurseries that grow plants from local sources. This Plan also includes specific details on seeding and planting, including sizes of planting holes and provisions for the use of willow cuttings. No hydro-mulching is proposed, in accordance with the CCRMP. This Plan also includes provisions for wetland plantings primarily using species listed in the CCRMP and either using CCRMP densities or somewhat lower densities to avoid dense stand of aquatic vegetation in shallow areas that might harbor mosquitoes. Therefore, the project would be consistent with the performance standard.

- **Performance Standard 4.5-22.** Where riparian reforestation is proposed in streambed areas located outside of the low-flow channel, cottonwood and willow cuttings should be placed within existing swales and other naturally-occurring low-elevation areas in order to provide them with sufficient water to survive the summer months.

The Habitat Restoration and Landscape Visual Screening Plan (Appendix C) also includes provisions for planting oaks and drought-tolerant shrubs on slopes, seeding and/or planting immediately after final grading, weed control, irrigation, limited use of slow-release fertilizer, and provisions for native plant material and seed from local sources and local nurseries that grow plants from local sources. This Plan also includes specific details on seeding and planting, including sizes of planting holes and provisions for the use of willow cuttings. No hydro-mulching is proposed, in accordance with the CCRMP. This Plan also includes provisions for wetland plantings primarily using species listed in the CCRMP and either using CCRMP densities or somewhat lower densities to avoid dense stand of aquatic vegetation in shallow areas that might harbor mosquitoes. Therefore, the project would be consistent with this performance standard.

IMPACTS AND MITIGATION MEASURES

Standards of Significance

The significance criteria for this analysis were developed from criteria presented in the CEQA Guidelines Appendix G, CEQA Guidelines Section 15065(a)(1), and the 2030 Countywide General Plan Final EIR (Yolo County 2009a). The criteria from Appendix G not listed below were previously addressed in the Initial Study, which indicated the proposed project would have a less-than-significant impacts on the biological resources described in those three criteria (see Impacts Found Less-than-Significant in Initial Study, below). Other significance criteria from the General Plan were not included because they are not relevant. The proposed project would result in a significant impact on biological resources if it would:

- 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 CDFG 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 CDFG or USFWS.
- Substantial adverse effect on federally protected wetlands.
- 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 an endangered, rare, or threatened species.
- Substantially conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?
- Substantially conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

Methodology

Existing resource information and documented field surveys of the project area were used to develop the description of the environmental setting provided above. Special-status wildlife and plant species and habitats (also described in the environmental setting) were evaluated in conjunction with the construction and operation activities associated with the project to determine potential impacts relative to the significance criteria and to develop mitigation measures.

Impacts Found Less than Significant in Initial Study

Have a substantial adverse effect, either directly or through habitat modifications, on sensitive plant species. Sensitive plant species are not anticipated to be present in the project area because suitable habitat is not present for those species.

Potential to substantially interfere with migration corridors or nursery sites. The 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 because the project would not interrupt any habitat movement corridors. Cache Creek is considered a wildlife corridor. Pursuant to the Cache Creek Area Plan (CCAP), the project includes fill work on the north bank of the creek in order to achieve the Test 3 contours for stream stabilization. Compliance with the CCAP, County code, existing regulatory permits pursuant to the CCRMP, and requirements of the U.S. Army Corps of Engineers are considered full mitigation.

Potential to have substantial adverse effects on riparian or other sensitive habitat. No oak woodland habitat is present at the project site. The provisions of the Yolo County Oak Woodland Conservation and Enhancement Plan (Yolo County 2007a) would not be applicable. The project would result in the removal of several small trees Fremont cottonwood, willow, and one small valley oak within the creek channel in order to implement the CCIP Test 3 creek stabilization. Up to

3.7 acres of riparian habitat, including willow scrub, would be affected by this implementation. Impacts from the SSP are discussed in Impact 4.5-2.

Potential to conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan. The Yolo County HCP remains in draft form and is not an adopted document. No other adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan applies to the project area. Therefore this significance criterion is not applicable.

Analysis of Potentially Significant Impacts

Potential direct and indirect impacts on biological resources were evaluated to determine the permanent and temporary effects of project construction and operations. This section describes the potential impacts of construction activities on the habitats, wetlands, and special-status species during construction and operation of the aggregate mining operations.

Impact 4.5-1:

Project activities could adversely affect sensitive wildlife species. (Significant but Mitigable)

The proposed project has the potential to adversely affect wildlife candidate, sensitive, or special-status species. Project activities that could have a substantial direct or indirect effect on sensitive wildlife resources include clearing, removal of topsoil, mining, vehicle operation, and material hauling.

Reconnaissance-level surveys and literature review indicate that special-status terrestrial species occur on the project site. These species include Swainson's hawk, state-listed as a threatened species. In addition, potentially suitable habitat exists for other special-status species such as the bank swallow, state listed as threatened and the following California Species of Concern: western pond turtle, tricolored blackbird, burrowing owl, northern harrier, and mountain plover. Construction, operations, and maintenance activities could result in direct and indirect impacts on individuals of these special-status species and their habitat. Direct impacts could include mortality from collisions with equipment. Indirect effects could cause a species to abandon a territory, foraging area, courtship, nest, or preferred habitat. Indirect effects may also include causing a substantial change in the availability of prey, reducing available foraging or nesting habitat, substantially changing the usability of a required habitat or impeding migration.

NORTHWESTERN POND TURTLE

Northwestern pond turtle is present in ponds, lakes, streams, and other permanent freshwater bodies in much of California. Because their nests are located in upland areas away from the aquatic habitats, construction near the banks of Cache Creek could affect individual turtles or nests. Eggs may be laid any time between March and August. The northwestern pond turtle can potentially be found anywhere within the 43.3 acres of riverine habitat and 3.7 acres of potential upland valley foothill riparian habitat present in the project area. Potential nesting sites for pond turtle could be affected due to construction in the vicinity of Cache Creek. However, similar nesting habitat is present in the vicinity of the project. Direct impacts to turtles could

occur during the implementation of the Test 3 Bank Stabilization Plan. This could result in significant impacts and mitigation measures would be required.

TRICOLORED BLACKBIRD AND MOUNTAIN PLOVER

For tricolored blackbird and mountain plover, impacts of the proposed project would be less than significant based on the distribution of the species, the area of construction, and other factors (e.g. timing of road repairs or vineyard development may avoid the critical breeding period for these species). For example, as described in Table 4.5-1, the mountain plover prefers short grasslands, freshly plowed fields, newly sprouting grain fields, and sod farms.

SWAINSON'S HAWK

Swainson's hawk was observed onsite during site reconnaissance surveys in 2007 and 2009. Woodlands and agricultural lands in the area may provide roosting, nesting, and foraging habitat. Suitable foraging habitat currently includes open grassland or lightly-grazed dryland pasture, alfalfa and other hay crops, fallow fields, and combinations of hay, grain, and row crops such as tomato and beets. Records maintained by the CNDDB indicate several active nests and numerous sightings in the area.

Trees in the project area provide potential nesting habitat. Project construction could affect Swainson's hawk through removal of potential nesting habitat.

Most of the agricultural fields within the project area meet the two basic criteria used by the CDFG in determining presence of potential foraging habitat for Swainson's hawk (CDFG 1993). These criteria include location within a 10-mile radius of an active nest site and suitable foraging habitat type. All of the OCMP area falls within a 10-mile radius of known nesting territories, considering the CNDDB occurrence records and other nest locations reported in the planning area. The CDFG considers all agricultural and pasture land within an active nesting territory not devoted to unsuitable crop types (i.e., vineyards, mature orchards, and cotton) to be potential foraging habitat, including plowed or fallow lands and fields under crop rotation which are currently planted with a crop where prey are inaccessible. The project site currently supports row crops of wheat, tomatoes, and bell pepper as well as almond and walnut orchards.

Project construction could affect Swainson's hawk through removal and conversion of foraging habitat. As stated in the OCMP EIR "Conversion of agricultural and grassland cover types would result in a further reduction of Swainson's hawk foraging habitat." Therefore, the planned conversion of potential Swainson's hawk habitat would result in a significant habitat loss requiring mitigation.

BANK SWALLOWS

The project could affect lowland vegetation types including patches of riparian vegetation dominated by willows (*Salix spp.*) and Fremont cottonwood (*Populus fremontii*) that can be used by bank swallows for foraging. As described above, bank swallows frequently forage in cultivated areas in the Sacramento Valley, including deciduous orchards, irrigated row crops and dry-land grain crops.

Because river bank habitat along Cache Creek, outside of the project area, provides potential nesting substrate for bank swallow and adjacent fields and waterways provide suitable foraging opportunities, project components planned adjacent to Cache Creek could result in significant impacts on bank swallow by creating potential nesting habitat within the stored topsoil or stockpiles. Bank swallows may attempt to establish colonies on stockpiles with vertical slopes, especially slopes that are 10 feet or greater in size.

Mitigation 4.5-1a:

NORTHWESTERN POND TURTLE

No earlier than 30 days before ground disturbance begins, surveys for the northwestern pond turtle shall be conducted. If northwestern pond turtles are observed in the area, attempts shall be made by a CDFG approved biologist to capture (trap/net) and relocate the turtles. Northwestern pond turtles are usually relocated to a nearby downstream reach of a stream.

If an active nest is discovered during operations, then the Applicant shall consult with CDFG to determine what mitigation measures shall be applied (i.e., buffer zones or alterations to the construction schedule to avoid the area until nesting is complete).

Implementation of this mitigation measure would reduce this impact to a less-than-significant level.

Mitigation 4.5-1b:

NESTING MIGRATORY BIRDS, NON-LISTED RAPTORS, AND BURROWING OWLS

To avoid and minimize impacts on nesting birds, the Applicant shall not remove trees, shrubs, or herbaceous vegetation during the nesting season (February 1 to August 31). This vegetation shall only be removed from September 1 through January 31, to the extent feasible.

If the Applicant initiates construction between February 1 to August 31, surveys shall commence 30 days prior to any activities in potential nesting areas within the project. A biological monitor shall conduct preconstruction surveys and monitor construction sites with nesting habitat continuously for bird nesting activities and inspect animal burrows for burrowing owl nests beginning in late February, prior to site clearing and grading. All ground areas shall be surveyed prior to any construction activities and initial grading. Raptor nesting surveys shall include examination of all trees and shrubs within 500 feet of the construction corridor. All trees, predominantly near the farm complex, that will be removed shall be surveyed prior to removal.

For burrowing owl, surveys shall be conducted according to the protocols in the guidelines developed by the Burrowing Owl Consortium (SCPBRG 2009).

Occupied burrows shall not be disturbed during the nesting season (February 1 through August 3 1) unless a qualified biologist approved by CDFG verifies through noninvasive methods that either: 1) the birds have not begun egg-laying and incubation; or 2) that juveniles from the occupied burrows are foraging independently and are capable of independent survival.

To offset the loss of foraging and burrow habitat on the project site, if any, a minimum of 6.5 acres of foraging habitat (calculated on a 100 m {approx. 300 ft.} foraging radius around the burrow) per pair or unpaired resident bird, shall be acquired and permanently protected. The protected lands shall be adjacent to occupied burrowing owl habitat and at a location acceptable to CDFG. Protection of additional habitat acreage per pair or unpaired resident bird may be applicable in some instances

When destruction of occupied burrows is unavoidable, existing unsuitable burrows shall be enhanced (enlarged or cleared of debris) or new burrows created (by installing artificial burrows) at a ratio of 2:1 on the protected lands site.

If owls must be moved away from the disturbance area, passive relocation techniques shall be used rather than trapping. At least one or more weeks shall be necessary to accomplish this and allow the owls to acclimate to alternate burrows.

The Applicant shall provide funding for long-term management and monitoring of the protected lands. The monitoring plan shall include success criteria, remedial measures, and an annual report to the County and to CDFG.

Any active nests of non-listed raptors found in or adjacent to disturbance areas shall be fenced with a 300-foot radius buffer around the nest site. This 300-foot buffer may be reduced if a qualified raptor biologist determines that the nesting raptors are acclimated to the project and related disturbance, and otherwise will not be adversely affected by construction activities. At a minimum, the non-disturbance buffer shall be a radius of 100 feet around the nest site. If the nest site is on an adjacent property or property that cannot be accessed, the portion of the buffer that occurs within the project corridor shall be fenced. When construction buffers are reduced in size, the raptor biologist shall monitor distress levels of the nesting birds while the birds nest and construction persists. If it is determined that construction could result in reproductive failure, construction shall be postponed in the immediate area until young have fledged. In cases where construction activities cannot be postponed, the project biologist shall coordinate with CDFG and USFWS, and at a minimum, the 300-foot buffer shall be implemented.

Implementation of this mitigation measure would reduce this impact to a less-than-significant level.

Mitigation 4.5-1c:

SWAINSON'S HAWK FORAGING

The Applicant shall either 1) pay a Swainson's hawk mitigation fee for the area disturbed by development, which is currently estimated at $8,660/acre or 2) implement another project specific mitigation plan which is deemed appropriate to the California Department of Fish and Game. As of January 9, 2006, projects that exceed 40 acres in area are no longer eligible to pay the fee, but are required to dedicate suitable conservation easements as determined by the Yolo HCP/NCCP Joint Powers Agency (JPA) and the California Department of Fish and Game. In the event that the final HCP/NCCP is adopted before development occurs, the developer shall participate in the Final HCP/NCCP to mitigate for the loss of Swainson's hawk habitat.

The Memorandum of Understanding (MOU) between CDFG and Yolo County states that the Applicant shall mitigate directly because the project is over 40 acres (Wong, pers. comm.

2009). The Applicant shall provide 1 acre of Swainson's hawk foraging habitat for every 1 acre of foraging habitat that is lost to the project. The Applicant may transfer fee simple title or a conservation easement over Swainson's hawk foraging habitat, along with appropriate enhancement and management funds, in lieu of paying the acreage based mitigation fee.

Even with implementation of this mitigation measure, potential impacts on Swainson's hawk from the loss of foraging habitat would remain significant and unavoidable.

SWAINSON'S HAWK NESTING

The timing and methodology for conducting Swainson's hawk surveys shall follow CDFG protocols (CDFG 2000).

Any active Swainson's hawk nests found within 0.5 mile of the project site shall be fenced with a 300-foot radius buffer around the nest site. This 300-foot buffer may be reduced if a qualified raptor biologist determines that the nesting raptors are acclimated to people and disturbance, and otherwise shall not be adversely affected by construction activities. At a minimum, the non-disturbance buffer shall be a radius of 100 feet around the nest site. If the nest site is on an adjacent property or property that cannot be accessed, the portion of the buffer that occurs within the project corridor shall be fenced. When construction buffers are reduced in size, the raptor biologist shall monitor distress levels of the nesting birds while the birds nest and construction persists. If it is determined that construction could result in failed reproductive success, construction disturbance shall be postponed in the immediate area until young have fledged. In cases where construction activities cannot be postponed (for safety or significant schedule conflicts) the project biologist shall coordinate with CDFG and USFWS, and at a minimum, the 300-foot buffer shall be implemented.

Mitigation 4.5-1d:

BANK SWALLOW

The Applicant shall conduct preconstruction surveys for the bank swallow during breeding season from March 1 to July 31. If it is determined that swallows are nesting in areas where construction could result in injury or failed reproductive success, construction disturbance shall be postponed in the immediate area until young have fledged. In cases where construction activities cannot be postponed (for safety or significant schedule conflicts) the project biologist shall coordinate with CDFG and USFWS.

To prevent inadvertent take of bank swallow which may utilize stockpiles, vertical slopes shall not be allowed to exceed 10 feet and shall be regularly inspected during the nesting season.

> *Section 10-4.433 (Soil Stockpiles) of the OCSMO states:*
>
> *Topsoil, subsoil, and subgrade materials in stockpiles shall not exceed 40 feet in height, with slopes no steeper than 2:1 (horizontal:vertical). Stockpiles, other than aggregate stockpiles, shall be seeded with a vegetative cover to prevent erosion and leaching. The use of topsoil for purposes other than reclamation shall not be allowed without the prior approval of the Director.*

Slopes on stockpiled soils shall be graded to a 2:1 slope for long-term storage to prevent use by bank swallows. At no time during the active breeding season (May 1 through July 31)

shall slopes on stockpiles exceed a slope of 1:1, even on a temporary basis. Stockpiles shall be graded to a minimum 1:1 slope at the end of each workday where stockpiles have been disturbed during the active breeding season.

Stockpiles shall be inspected weekly during nesting season to verify that no bank swallows have begun nesting activities in the slope areas.

Implementation of this mitigation measure would reduce impacts on bank swallows to less than significant.

Impact 4.5-2:

Project construction could have a significant impact on riparian vegetation and habitat. (Significant but Mitigable)

The project would affect 3.7 acres of Valley Foothill Riparian habitat along the north bank of Cache Creek during implementation of the proposed SSP. Valley Foothill Riparian habitats that could be affected consist primarily of willow-mulefat scrub in a narrow fringe along the Cache Creek channel, but also include small stands of cottonwood and larger willows. The Applicant is required to adhere to Title 10 ordinances during construction, operations, and restoration of mined areas and associated activities. Specifically Section 10-3.415 (Revegetation) of the ICMMO applies to the in-channel work that would consist of implementing a segment of the County's Test 3 line. This regulation specifies that:

(a) Approved projects requiring excavation of channel banks and removal of riparian vegetation shall be revegetated consistent with Performance Standards 4.5-1 through 4.5-23 of the CCRMP, and with the CCAP, upon the completion of excavation activities.

(b) Vegetated buffers should be placed between restored habitat areas and adjoining farmland, in order to minimize the potential for riparian areas to serve as reservoirs for agricultural pests. Said buffers will also reduce the effects of noise, dust, and spraying generated by agricultural operations on wildlife and riparian vegetation.

(c) Species and water features included in habitat areas should be designed to discourage the proliferation of agricultural pests and weeds that would impair local crops.

(d) Species shall be selected to encourage the biological control of agricultural and native habitat pests and weeds.

(e) Trees that are suitable for wildlife perching near agricultural fields dedicated to row crop production should be incorporated into habitat design, in order to provide foraging habitat for Swainson's Hawks and other birds of prey.

(f) As an alternative to on-site revegetation where such cannot be feasibly and successfully implemented, habitat restoration or creation at a suitable off-site location and/or non-native removal and other habitat enhancement at a suitable off-site location will be required.

The proposed Reclamation Plan and the accompanying Habitat Restoration and Visual Screening Plan (HRVSP) are designed to address Performance Standards 4.5-1 through 4.5-23 of the CCRMP and the CCAP and the items above from the ICMMO, although the HRVSP does not specify the use of stabilizers or tackifiers during seeding (Performance Standard 4.5-10). Elements of the HRVSP also include

1) vegetated buffers of native upland trees, shrubs, and grasses between the restored riparian habitat areas and adjoining farmland, 2) the use of native species that will, if established, discourage the proliferation of agricultural pests and weeds, and 3) planting trees that are suitable for wildlife perching. The HRVSP provides for irrigation, monitoring, and maintenance of the various types of vegetation that would be restored.

Mitigation 4.5-2:

The Applicant shall implement the Reclamation Plan and the riparian habitat restoration measures in the accompanying HRVSP.

Implementation of this mitigation measure would reduce this impact to less than significant.

Impact 4.5-3:

Potential to have a substantial adverse effect on federally protected wetlands. (Significant but Mitigable)

The delineation report (TRC 2007b) identified a total of 0.1 acre of USACE jurisdictional wetlands within the project study area (south of Cache Creek, in the eastern corner of the project study area). These wetlands are not within of the portion of the project site that would be impacted by proposed activities. The delineation was conducted using the 1987 Corps Wetland Delineation Manual alone without employing the 2008 *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region*. After further analysis of the wetland delineation by ENTRIX biologists, it appears that one area (datapoint 5) of the vegetated waters of the State was not identified as federal jurisdictional wetlands, although it would be under 2008 standards, and therefore the acreage may increase above 0.1 acre. Since this area is in the floodplain adjacent to the active channel, it is likely to change annually and would not likely be impacted by the project. Nevertheless, a wetland delineation utilizing current USACE guidelines would need to be conducted for the project.

Mitigation 4.5-3:

The Applicant shall amend the wetland delineation utilizing current USACE guidelines prior to start of construction. If no wetlands are delineated within the area of construction activities, no further mitigation is required. If wetlands are delineated within the area of construction activities, the Applicant shall develop a wetland mitigation plan for approval by permitting agencies, to create, restore, or enhance wetlands of similar function at a 1 to 1 ratio.

Implementation of this mitigation measure would reduce this impact to less than significant.

Impact 4.5-4:

Potential to conflict with local policies or ordinances protecting biological resources. (Less than Significant)

This project has been analyzed for consistency with applicable plans, policies, and regulations using the following framework:

- Consistency with SMARA – Addressed in Section 4.11, Land Use (particularly Tables 4.11-3 through 4.11-7).
- Consistency with other applicable state plans, policies and regulations – Addressed in each section of Chapter 4.0 of this EIR, as applicable to the subject matter.
- Consistency with the County General Plan – Addressed in each section of Chapter 4.0 of this EIR, as applicable to the subject matter.
- Consistency with the CCAP – Addressed in each section of Chapter 4.0 of this EIR, as applicable to the subject matter. The analysis examines consistency with both the OCMP and the CCRMP (including the CCIP) as applicable.
- Consistency with the County Zoning Ordinance (Title 8 of the County Code) – Addressed in Section 4.11, Land Use (particularly Tables 4.11-3 through 4.11-7).
- Consistency with the County ICMMO (Title 10, Chapter 3 of the County Code) – Addressed in Section 4.11, Land Use (particularly Tables 4.11-3 through 4.11-7).
- Consistency with the County OCSMO (Title 10, Chapter 4 of the County Code) – Addressed in Section 4.11, Land Use (particularly Tables 4.11-3 through 4.11-7).
- Consistency with the County SMRO (Title 10, Chapter 5 of the County Code) – Addressed in Section 4.11, Land Use (particularly Tables 4.11-3 through 4.11-7).

Assuming implementation of the revised Habitat Restoration and Landscape Visual Screening Plan (Appendix C) and approval of the requested approvals, including identified mitigation measures and standard conditions of approval, the project is considered consistent with these plans, policies, and regulations pursuant to CEQA.

Mitigation 4.5-4:

None required.

4.6 CLIMATE CHANGE

This section analyzes the impacts of the project on greenhouse gas emissions, and discusses the potential effects of global climate change on the project. The setting describes the existing conditions of the project site and vicinity. Project-specific impacts are identified and appropriate mitigation measures are recommended to reduce significant impacts to a less-than-significant level.

ENVIRONMENTAL SETTING

Geographic and Climate Setting

Yolo County is located in the SVAB. The SVAB is bounded by the North Coast Ranges on the west and Northern Sierra Nevada Mountains on the east. The intervening terrain is relatively flat. Hot dry summers and mild rainy winters characterize the Mediterranean climate of the SVAB. During the year, the temperature may range from 20 to 115 degrees Fahrenheit (°F) with summer highs usually in the 90s and winter lows occasionally below freezing. Average annual rainfall is about 20 inches, with about 75 percent of the rain occurring during the rainy season generally from November through March. The prevailing winds are moderate in strength and vary from moist clean breezes from the south to dry land flows from the north. In general, the prevailing wind in the Sacramento Valley is from the southwest due to marine breezes flowing through the Carquinez Strait. The Carquinez Strait is the major corridor for air moving into the Sacramento Valley from the west. Incoming airflow strength varies daily with a pronounced diurnal cycle. Influx strength is weakest in the morning and increases in the afternoon and evening hours (Delta breeze).

Climate Change

“Climate change” is defined by the United Nations Framework Convention on Climate Change as “a change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods” (USEPA 2009b). The major example of human activity resulting in climate change is emissions of greenhouse gases from combustion of fossil fuels. Natural processes also result in changes in global climate. Changes in the earth’s orbit and the sun’s intensity affect the amount of sunlight received on the earth's surface. Volcanic activity produces both particulate matter, which can result in cooling, and carbon dioxide, a greenhouse gas that can result in warming. According to the Intergovernmental Panel on Climate Change (IPCC), the global average surface temperature of the earth increased by about 0.6 degrees Celsius (°C) or 1.1°F during the 20th Century (IPCC 2007). Despite the contributions of natural processes to changes in the earth’s climate, the IPCC has concluded that “In light of new evidence and taking into account the remaining uncertainties, most of the observed warming over the last 50 years is likely to have been due to the increase in greenhouse gas concentrations” emitted by the combustion of fossil fuels (USEPA 2009b).

Greenhouse Gases

Gases that trap heat in the atmosphere are called greenhouse gases. Common greenhouse gases include water vapor, carbon dioxide, methane, nitrous oxide, chlorofluorocarbons, hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride, and ozone. Greenhouse gases are emitted by both natural processes and human activities. The accumulation of greenhouse gas in the

atmosphere can increase the earth's temperature over time. Greenhouse gas emissions from human activities, such as fossil-fueled generation of electricity and vehicle use, have elevated the concentration of these gases in the atmosphere, resulting in global warming (Association of Environmental Professionals 2007). The principal greenhouse gases that enter the atmosphere due to human activities are as follows:

- Carbon dioxide (CO_2) enters the atmosphere through the burning of fossil fuels (oil, natural gas, and coal), solid waste, trees, and wood products, and also as a result of other chemical reactions (e.g., manufacture of cement). Carbon dioxide is removed from the atmosphere (or "sequestered") when it is absorbed by plants as part of the biological carbon cycle. Carbon dioxide is the major component of greenhouse gas emissions from diesel construction equipment.
- Methane (CH_4) is emitted during the production and transport of coal, natural gas, and oil. Methane emissions also result from livestock and other agricultural practices and by the decay of organic waste in municipal solid waste landfills. Methane is a very minor component of greenhouse gas emissions from diesel construction equipment.
- Nitrous oxide (N_2O) is emitted during agricultural and industrial activities, as well as during combustion of fossil fuels and solid waste. Nitrous oxide comprises a small fraction of nitrogen oxide emissions from combustion sources, which are mainly nitric oxide and nitrogen dioxide. Nitrogen oxides are a very minor component of greenhouse gas emissions from diesel construction equipment.
- Fluorinated gases, hydroflourocarbons, perfluorocarbons, and sulfur hexafluoride are synthetic, powerful greenhouse gases that are emitted from a variety of industrial processes. Fluorinated gases are often used as substitutes for ozone-depleting substances (i.e., chlorofluorocarbons, hydrochlorofluorocarbons, and halons). These gases typically are emitted in smaller quantities, but because they are potent greenhouse gases, they are sometimes referred to as High Global Warming Potential gases.

The greenhouse gas of most concern is carbon dioxide because it is released by the burning of fossil fuels (coal, oil, and gas), it can last in the atmosphere for centuries, and it contributes more to climate change than any other greenhouse gas. In 2004, carbon dioxide accounted for 85 percent of the greenhouse gas emissions produced in the United States, and electrical generation accounted for 40 percent of those carbon dioxide emissions. In 2004, approximately 2.5 billion tons of carbon dioxide was produced in the United States from electrical generation. Therefore, approximately 6.3 billion short tons of carbon dioxide were emitted in the United States in 2004 from all sources.

Because carbon dioxide is the most common greenhouse gas resulting from human activity, it is the reference gas to which other greenhouse gases are compared. "Global warming potential" is a measure of how much a given mass of greenhouse gas is estimated to contribute to global warming. It is a relative scale that compares the gas in question to that of the same mass of carbon dioxide (which is defined as a global warming potential of 1) based on its persistence in the atmosphere and ability to trap heat, methane has a global warming potential 21 times that of an equal mass of carbon dioxide. Nitrous oxide has a global warming potential of 310 (USEPA 2009b).[1] Using the global warming potential of each greenhouse gas, total emissions can be converted into carbon dioxide-equivalent measures.

[1] The global warming potentials used in this document are for a 100-year time horizon (USEPA 2009b).

Greenhouse Gas Sources and Inventories

State of California

According to CARB emission inventory estimates, California emitted approximately 480 million metric tons of carbon dioxide equivalents (CO_2eq) emissions in 2004 (CARB 2007a). The California EPA Climate Action Team stated in its March 2006 report that the composition of gross climate change pollutant emissions in California in 2002 (expressed in terms of CO_2eq) was as follows:

- Carbon dioxide (CO_2) accounted for 83.3 percent,
- Methane (CH_4) accounted for 6.4 percent,
- Nitrous oxide (N_2O) accounted for 6.8 percent, and
- Fluorinated gases (HFCs, PFC, and SF_6) accounted for 3.5 percent.

The CARB estimates that transportation is the source of approximately 38 percent of the state's GHG emissions in 2004, followed by electricity generation (both in-state and out-of-state) at 23 percent, and industrial sources at 20 percent. The remaining sources of GHG emissions are residential and commercial activities at 9 percent, agriculture at 6 percent, high global warming potential gases accounting for 3 percent, and recycling and waste at 1 percent.

Project Site

As described in Section 4.11, Land Use, existing activity at the project site is limited to agriculture. A single farm residence and associated structures are located in the central portion of the project site, and there are no other structures present. This residence and associated structures would be demolished prior to project construction. The portion of the project site north of Cache Creek is currently used for agriculture. The area north of Fulton and Frank Lane is currently in row crop production. South of the road, open space/grassland is located in the west while the east supports orchard crops. The area of the project site along and south of Cache Creek is either creek channel, banks, or open space/grassland. A portion of the project site was previously used for aggregate processing.

The existing agricultural uses contribute greenhouse gas emissions primarily from the use of diesel-powered farm equipment, which would cease following the commencement of project construction.

REGULATORY SETTING

Federal

In Massachusetts v. Environmental Protection Agency (Docket No. 05–1120), which was decided in April 2007, the U.S. Supreme Court ruled that carbon dioxide and other greenhouse gases are pollutants under the federal Clean Air Act, which the USEPA must regulate if it determines they pose an endangerment to public health or welfare. To date, the EPA has not made such a finding or developed a regulatory program for greenhouse gas emissions. In June 2008, the EPA issued an Advanced Notice of Proposed Rulemaking: Regulating Greenhouse Gas Emissions under the Clean Air Act (Docket No. EPA-HQ-OAR-2008-0318).

Although there are no federal regulations at this time limiting carbon dioxide and methane emissions, emissions of nitrous oxide are indirectly regulated through limitation of NO_X emissions as

a criteria pollutant under the national ambient air quality standards described in Section 4.4, Air Quality. The EPA and other federal agencies have established voluntary programs with state and local agencies and businesses intended to increase energy conservation and thus reduce greenhouse gas emissions.

In addition, The EPA has released a Draft Greenhouse Gas Reporting Rule. This rule requires mandatory reporting of GHG emissions from large sources (facilities that emit 25,000 metric tons or more per year of GHG emissions) in the United States. The proposed rule would collect accurate and comprehensive emissions data to inform future policy decisions.

State

Senate Bills 1078 and 10

California SB 1078 was signed into legislation in 2002 and required California load serving entities (LSEs) to procure 20 percent of their retail customer load with renewable energy by the year 2017. Four years later (2006), SB 10 accelerated the 20 percent renewable deadline to 2010.

Executive Order S-20-04

On July 27, 2004, Governor Arnold Schwarzenegger signed Executive Order S-20-04 committing the state to aggressive action to reduce state-owned building electricity usage by retrofitting, building and operating the most energy and resource efficient buildings by taking all cost-effective measures described in the Green Building Action Plan with the goal of reducing grid-based energy purchases by 20 percent by 2015. The Order also directed the California Public Utilities Commission (PUC) to support a campaign to improve commercial building energy efficiency in order to help achieve the 20 percent goal and to develop a benchmarking methodology.

Executive Order S-3-05

On June 1, 2005, Governor Arnold Schwarzenegger signed Executive Order S-3-05 (Order) which established greenhouse gas emission reduction targets: by 2010, reduce GHG emissions to 2000 levels; by 2020, reduce GHG emissions to 1990 levels; by 2050, reduce GHG emissions to 80 percent below 1990 levels.

Global Warming Solutions Act (AB 32)

The Global Warming Solutions Act of 2006 (Assembly Bill [AB] 32) codifies California's goal of reducing statewide emissions of greenhouse gases to 1990 levels by 2020. This reduction will be accomplished through an enforceable statewide cap on greenhouse gas emissions that will be phased in starting in 2012 to achieve maximum technologically feasible and cost-effective greenhouse gas emission reductions. In order to effectively implement the cap, AB 32 directs the CARB to develop appropriate regulations and establish a mandatory reporting system to track and monitor levels of GHG emissions. At present, there is no established state or local regulatory or guidance mechanism for determining whether a project advances or hinders California's greenhouse gas reduction goals, and standards of significance for greenhouse gas impacts have been promulgated in CARB's preliminary draft staff proposal, Recommended Approaches for Setting Interim Significance Thresholds for Greenhouse Gases under the California Environmental Quality Act, but have not been finalized or adopted (California Air Pollution Control Officers Association [CAPCOA] 2008, CARB 2008).

Senate Bill 97

In 2007, the California legislature passed a “companion” bill to AB 32 to amend the CEQA statute to specifically establish that greenhouse gas emissions and their impacts are appropriate subjects for CEQA analysis. The law does not address the evaluation and determination of significance, but directs the state's Office of Planning and Research (OPR) to develop draft CEQA guidelines “for the mitigation of greenhouse gas emissions or the effects of greenhouse gas emissions” by July 1, 2009 and directs the state Resources Agency to certify and adopt the CEQA guidelines by January 1, 2010.

In June 2007, CARB approved a list of 37 early action measures, including three discrete early action measures (Low Carbon Fuel Standard, Restrictions on High Global Warming Potential Refrigerants, and Landfill Methane Capture), which are required to be adopted as regulations and made effective no later than January 1, 2010 (CARB 2007b). The CARB adopted additional early action measures in October 2007 that tripled the number of discrete early action measures. These measures relate to truck efficiency, port electrification, reduction of perfluorocarbons from the semiconductor industry, reduction of propellants in consumer products, proper tire inflation, and sulfur hexafluoride (SF_6) reductions from the non-electricity sector. The combination of early action measures is estimated to reduce statewide GHG emissions by nearly 16 MMT (CARB 2007c).

In June 2008, the OPR presented preliminary draft amendments to the CEQA Guidelines that were prepared in collaboration with CARB to address impacts from greenhouse gases (OPR 2008).

Working with CARB during the remainder of 2008, the OPR drafted amendments to the CEQA Guidelines for GHG emissions as required by SB 97. In January 2009, OPR held two workshops in Los Angeles and Sacramento to present the preliminary draft amendments and obtain input from the public. The workshops included a presentation by OPR and the Resources Agency staff, an overview of the preliminary draft CEQA Guideline amendments, and the process for adopting the regulations by 2010. On April 13, 2009, OPR submitted to the Secretary for Natural Resources its proposed amendments to the state CEQA Guidelines. The proposed CEQA Guideline amendments would provide guidance to public agencies regarding the analysis and mitigation of the effects of GHG emissions in draft CEQA documents. At the time of this writing, the Natural Resources Agency is preparing to conduct formal rulemaking, prior to certifying and adopting the amendments, as required by SB 97 (Chapter 185, 2007).

Senate Bill 1368

California SB 1368 adds sections 8340 and 8341 to the Public Utilities Code (effective January 1, 2007) with the intent “to prevent long-term investments in power plants with greenhouse gas emissions in excess of those produced by a combined-cycle natural gas power plant” with the aim of “reducing emissions of greenhouse gases from the state's electricity consumption, not just the state's electricity production.” The bill provides a mechanism for reducing the greenhouse gas emissions of electricity providers, both in-state and out-of-state, thereby assisting CARB in meeting its mandate under AB 32, the Global Warming Solutions Act of 2006.

SB 1368 prohibits California utilities (i.e., load serving entities, LSE) from entering into long-term (5 years or longer) power contracts with generators unless base load generation (i.e., 60 percent annual capacity factor or greater) complies with stringent greenhouse gas emission standards. In 2007 the California PUC established an output-based emission performance standard (EPS) for investor-owned utilities’ base load generation. The EPS requires that base load generation greenhouse gas emission rates in units of pounds per net megawatt-hour (lb/net MW-hr CO2

equivalent) cannot exceed that of a new base load combined-cycle natural gas-fired plant. The 2007 interim EPS was 1,100 lb/net MW-hr of CO2 equivalents (PUC Decision No. 07-01-039).

Senate Bill 375

California SB 375, signed into law on October 1, 2008, is intended to enhance CARB's ability to reach AB 32 goals by directing CARB to develop regional GHG emissions reduction targets to be achieved within the automobile and light truck sectors for 2020 and 2035. CARB will work with California's 18 metropolitan planning organizations (MPOs) to align their regional transportation, housing, and land use plans and prepare a "Sustainable Communities Strategy" (SCS) to reduce the number of vehicle miles traveled in their respective regions and demonstrate the region's ability to attain its greenhouse gas reduction targets.

Additionally, SB 375 provides incentives for creating attractive, walkable, and sustainable communities and revitalizing existing communities. The bill exempts home builders from certain CEQA requirements if they build projects consistent with the new sustainable community strategies. It will also encourage the development of more alternative transportation options, to promote healthy lifestyles and reduce traffic congestion.

Executive Order S-13-08

On November 14, 2008, Governor Arnold Schwarzenegger signed Executive Order S-20-04 directing the California Resources Agency, in cooperation with the Department of Water Resources (DWR), the California Energy Commission (CEC), California's coastal management agencies, and the Ocean Protection Council (OPC), to request that the National Academy of Sciences (NAS) convene an independent panel to complete the first California Sea Level Rise Assessment Report by December 1, 2010. As part of this effort, the Resources Agency is to create an independent sea level rise science and policy committee made up of state, national and international experts and to hold public workshops to gather policy-relevant information.

Local

Project consistency with county regulations is discussed in Section 4.11, Land Use. Project consistency with General Plan policies and other applicable regulations is discussed below.

YSAQMD Handbook

The Handbook for Assessing and Mitigating Air Quality Impacts of the YSAQMD contains recommendations for evaluation of greenhouse gas emissions (YSAQMD 2007). While there are no specific thresholds associated with greenhouse gases, the Handbook recommends including at least a qualitative discussion of greenhouse gases in air quality analyses for sizable projects. According to YSAQMD, the Lead Agency can require mitigation measures through alteration of its building codes or permit requirements; e.g., it might require solar heating capabilities for all new development, or require that carbon sequestration credits be purchased for developments exceeding a certain size.

Cool Counties

In September 2007, the Board of Supervisors unanimously adopted a resolution declaring that Yolo County was joining with 13 other counties in the United States to participate in the Cool Counties

Climate Stabilization Declaration. This commits Yolo County to seek to reduce greenhouse gas emissions from County operations by 80 percent by the year 2050.

California Climate Action Registry

Yolo County has formally applied to join the California Climate Action Registry, a program of the State of California that is "aimed at developing and managing a common greenhouse gas emissions reporting system" that will form the basis for future regulatory and voluntary efforts to assess, verify, and credit reductions in these emissions. This program requires the county to establish baseline energy use against which future actions and policies to reduce usage can be measured for effectiveness. The baseline audit has been independently verified, and Yolo County will establish annual reports to document energy usage.

2030 Countywide General Plan (2009)

The County is committed to the reduction of greenhouse gases and has sought to balance this goal with other community values. In addition to a section on climate change within the Conservation and Open Space element, policies and actions that address climate change appear throughout the entire General Plan. The following is a list of relevant General Plan goals, policies and actions related to global climate change. The following list includes only policies explicitly discussing or affecting climate change. However, over 300 policies that are part of the General Plan would have a beneficial effect on greenhouse gas emissions.

- **CO-8.2.** Use the development review process to achieve measurable reductions in greenhouse gas emissions.

The impact analysis and identified mitigation measures implement this policy.

- **CO-8.4.** Encourage all businesses to take the following actions, where feasible: replace high mileage fleet vehicles with hybrid and/or alternative fuel vehicles; increase the energy efficiency of facilities; transition toward the use of renewable energy instead of non-renewable energy sources; adopt purchasing practices that promote emissions reductions and reusable materials; and increase recycling.

The project would use electric conveyor systems to reduce the need for fuel-powered vehicles. Therefore, the project would be consistent with this policy.

- **CO-8.7.** Integrate climate change planning and program implementation into County decision making.

The impact analysis and identified mitigation measures implement this policy.

Cache Creek Area Plan (CCAP)

The CCAP establishes monetary and regulatory incentives to encourage recycling of aggregate products. It also encourages the use of conveyor systems to eliminate truck trips associated with transport of materials for processing.

IMPACTS AND MITIGATION MEASURES

Standards of Significance

The recommended approach for GHG analysis included in OPR's June 2008 release is to 1) identify and quantify GHG emissions, 2) assess the significance of the impact on climate change, and 3) if significant, identify alternatives and/or mitigation measures to reduce the impact below significance (OPR 2008). At present, neither the CEQA statute nor Guidelines prescribe thresholds of significance or a particular methodology for performing an impact analysis; as with most environmental topics, significance criteria are left to the judgment and discretion of the lead agency.

Action CO-A115 of the 2030 Countywide General Plan requires preparation of a Greenhouse Gas (GHG) Emissions Reduction Plan (ERP) and/or Climate Air Plan (CAP) for the County within the first two years after adoption of the General Plan. In the interim, until the GHG ERP/CAP plan is in effect, Action CO-115.1 establishes the following significance thresholds and mitigation requirements for project analysis:

- Projects consistent with the General Plan and otherwise exempt under CEQA – Assumed to be de minimis.
- Projects consistent with the General Plan and subject to CEQA – net zero threshold to be achieved by the applicant as follows:
  - Apply practical and reasonable design components and operational protocols to reduce project GHG emissions to the lowest feasible levels;
  - Use verifiable offsets to achieve remaining GHG reductions. To the greatest feasible extent, offsets shall be: locally based, project relevant, and consistent with other long term goals of the County.

The "net zero" thresholds identified under the second bullet would apply to this project. Accordingly, for purposes of this analysis, the project would result in significant adverse climate change impacts if it would:

- Result in net new increases in GHGs.
- Substantially conflict with applicable plans, policies and regulations of other agencies adopted for the purpose of avoiding or mitigating an environmental effect.
- Result in significant adverse physical impacts as a result of future effects of climate change on the operation of the project.

Methodology

Emissions from initial site and plant construction were assumed to be similar to operational emissions since the same general types of equipments would be used. Actual construction emissions may be less than operational emissions, so the use of operational emissions estimates represents a worst-case estimate (annual basis). Emissions from operations (ongoing mining and

reclamation) were calculated using EPA, Climate Registry, and CARB (SCAQMD[2]) emission factors for greenhouse gases.

Impacts Found Less than Significant in Initial Study

The Initial Study did not identify any less-than-significant impacts related to climate change and greenhouse gases.

Analysis of Potentially Significant Impacts

Impact 4.6-1:

The project would result in new net increases in GHG emissions. (Potentially Significant and Unavoidable)

The existing agricultural use of the site generates GHG emissions primarily from farming equipment and chemical use, and secondarily from agricultural techniques such as tilling, etc. The existing orchards on the site act to sequester GHGs which is beneficial in terms of climate change. Replacement of the existing agricultural use with the proposed mining operation will result in removal of the orchards which would result in increased GHG emissions from the site, elimination of existing agricultural operations which would result in decreased GHG emissions from the site, and replacement of those uses with the proposed mining activities which would result in net new GHG emissions for the 30-year period of the requested permit. As reclamation occurs, the equipment used for reclaiming the land will emit GHGs. After the mining period has ended and reclamation is complete, the proposed reclaimed lake will generally have no GHG emissions, the proposed reclaimed agriculture will have emissions similar to the row crops raised there now, and the proposed habitat areas (particularly shallow wetland areas) may have new emissions associated with carbon load. In all, the "lifecycle" of GHG emissions from the existing use to the final reclaimed use is complicated but can be summarized (compared to existing conditions) as going to net higher levels during the 30-year mining period followed by net lower conditions permanently thereafter. The following analysis quantifies GHG emissions associated with existing and proposed land uses.

CONSTRUCTION

Project construction would generate direct greenhouse gas emissions from diesel-powered construction equipment (including generators) and vehicle traffic, including trucks and workers' personal vehicles. Greenhouse gases emitted during the combustion of diesel fuel in off-road construction equipment and on-road vehicles would consist mainly of carbon dioxide, along with small amounts of methane and nitrous oxide during the construction period.

As discussed in Section 4.4 Air Quality, emissions from initial site and plant construction were assumed to be similar to operational emissions since the same general types of equipments would be used. Actual construction emissions would be

[2] The South Coast Air Quality Management District (SCAQMD) publishes applicable CARB emission factors in its CEQA Guidelines (2008).

less than operational emissions, so the use of operational emissions estimates represents a worst-case estimate (annual basis).

Mitigation Measure 4.4-2b in Section 4.4 Air Quality, requires the implementation of measures to reduce equipment and vehicle exhaust emissions, which include greenhouse gases.

OPERATION

Using EPA, Climate Registry, and CARB (SCAQMD[3]) emission factors for greenhouse gases, Tables 4.6-1 and 4.6-2 present estimated overall direct, indirect, and agricultural offset greenhouse gas emissions from project operation comprising offroad equipment, onroad vehicles, off-site (grid) electric power generation, and agricultural operations in units of short tons and metric tonnes per year. Note that loss of cropland represents a mixed impact where carbon sequestration capacity is lost (negative impact) while emissions from equipment and chemical use are eliminated (positive impact).

As shown in Tables 4.6-1 and 4.6-2, project operation would cause to be emitted approximately 6,600 metric tonnes of carbon dioxide-equivalent greenhouse gases per year from combustion of motor fuels (diesel, gasoline) in equipment and vehicles, offsite electric power generation, and loss of cropland sequestration capacity.

Cropland net carbon sequestration capacity comprises three components 1) onsite GHG emissions from combustion of fuel in farm equipment, including chemical application machinery (negative); 2) offsite GHG emissions from production of agricultural chemicals (negative); and 3) carbon dioxide uptake by growing crops (positive). For this assessment, actual (historic) fuel use was obtained from affected farming operations and published factors were used to estimate the chemical production components and crop uptake. From the cited references, rows crops uptake about 0.392 tons of carbon dioxide per acre per year (tons CO_2 /acre-year) while tree crops uptake about 0.766 tons CO_2 /acre-yr.[4] Agricultural chemical production causes to be emitted about 0.007 tons CO_2 /acre-yr for fertilizer and pesticide production combined (USEPA 2006, USEPA 2009b, SCAQMD 2008, TCR 2008, PU 2003).

[3] The South Coast Air Quality Management District (SCAQMD) publishes applicable CARB emission factors in its CEQA Guidelines (2008).

[4] Weeds notwithstanding, fallow is assumed to be zero CO_2 uptake.

Table 4.6-1 Estimated Net Project GHG Emissions

Project Emissions	Combined Total	
	tons/yr	tonnes/yr
Carbon Dioxide (GHG – CO_2)	7,223	6,553
Nitrous Oxide (GHG – N_2O)	0.18	0.16
Methane (GHG – CH_4)	0.27	0.24
Carbon Dioxide Equivalents (CO_2 eqv)	7,284	6,608

Notes:
Ag = Agricultural
Net Project = Direct OP + Indirect OP - Ag Fuel - Ag Chem + Ag Uptake
Loss of Ag fuel and chemicals is beneficial (no emissions = GHG decrease)
Loss of Ag land is detrimental (no uptake = GHG increase)
Ag uptake (sequestration) is CO_2 only
Sources: USEPA 2006, USEPA 2009b, SCAQMD 2008, TCR 2008, PU 2003

Table 4.6-2 Estimated Project GHG Balance by Category

Project Emissions	Combined Total	
	tons/yr	tonnes/yr
Direct Operations (CO_2 eqv)	6,141	5,571
Indirect Operations (CO_2 eqv)	1,258	1,142
Agricultural Fuel Combustion (CO_2 eqv)	(248)	(225)
Agricultural Chemicals Production (CO_2 eqv)	(1)	(1)
Agricultural Crop Sequestration (CO_2 eqv)	134	121
Project Balance (CO_2 eqv)	7,284	6,608

Notes:
Ag = Agricultural
Net Project = Direct OP + Indirect OP - Ag Fuel – Ag Chem + Ag Uptake
Loss of Ag fuel and chemicals is beneficial (no emissions = GHG decrease)
Loss of Ag land is detrimental (no uptake = GHG increase)
Ag uptake (sequestration) is CO_2 only
Sources: USEPA 2006, USEPA 2009b, SCAQMD 2008, TCR 2008, PU 2003

Other indirect emission sources such as water usage and solid waste are not included in this analysis since they would be small in comparison to totals presented above, however, such indirect emissions would incrementally add to the total greenhouse gas emissions for the project. Such emissions would be a small net increase of greenhouse gas emissions, both onsite and offsite, as they would be greater than those resulting from current site uses.

Mitigation measures are required to reduce this impact.

Mitigation Measure 4.6-1:

The Applicant shall submit a plan for approval by the County that supports the County's net zero emissions goal as follows: 1) identify practical and reasonable changes to project

design and operations that reduce project GHG emissions down to the lowest feasible levels; 2) for remaining GHG emissions, identify verifiable offsets that are (to the greatest feasible extent): locally based, project relevant, and consistent with other long term goals of the County. With implementation of this mitigation measure, potential project impacts on climate change would be reduced to the greatest feasible extent.

Implementation of this mitigation measure could reduce this impact to a less-than-significant level if project emissions can be feasibly reduced to net zero levels. If such reductions are not feasible, this impact would remain significant and unavoidable over the life of the project.

Impact 4.6-2:

The project has the potential to conflict with an applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases. (Significant and Unavoidable)

This project has been analyzed for consistency with applicable plans, policies, and regulations using the following framework:

- Consistency with SMARA – Addressed in Section 4.11, Land Use (particularly Tables 4.11-3 through 4.11-7).
- Consistency with other applicable state plans, policies and regulations – Addressed in each section of Chapter 4.0 of this EIR, as applicable to the subject matter.
- Consistency with the County General Plan – Addressed in each section of Chapter 4.0 of this EIR, as applicable to the subject matter.
- Consistency with the CCAP – Addressed in each section of Chapter 4.0 of this EIR, as applicable to the subject matter. The analysis examines consistency with both the OCMP and the CCRMP (including the CCIP) as applicable.
- Consistency with the County Zoning Ordinance (Title 8 of the County Code) – Addressed in Section 4.11, Land Use (particularly Tables 4.11-3 through 4.11-7).
- Consistency with the County ICMMO (Title 10, Chapter 3 of the County Code) – Addressed in Section 4.11, Land Use (particularly Tables 4.11-3 through 4.11-7).
- Consistency with the County OCSMO (Title 10, Chapter 4 of the County Code) – Addressed in Section 4.11, Land Use (particularly Tables 4.11-3 through 4.11-7).
- Consistency with the County SMRO (Title 10, Chapter 5 of the County Code) – Addressed in Section 4.11, Land Use (particularly Tables 4.11-3 through 4.11-7).

The project would contribute incrementally to regional increases in greenhouse gas emissions. The 2030 Countywide General Plan for Yolo County contains over 300 policies and actions designed to reduce impacts related to climate change in the County. AB 32 establishes statewide greenhouse gas emission reduction targets, described above. The total annual direct carbon dioxide-equivalent emissions increase would be approximately 5,600 metric tonnes per year. This quantity may contribute incrementally to overall totals, in potential conflict with the goals of AB 32 to reduce greenhouse gas emissions to 1990 levels by 2020. Pursuant to the County's policy to maintain net zero increases in GHG emissions through project design modifications, operational protocols, and off-sets, Mitigation Measure 4.6-1 may successfully reduce this impact to less than significant. However if net zero

emission levels can not be feasibly achieved then this impact would remain significant and unavoidable.

Mitigation Measure 4.6-2:

Implement Mitigation Measure 4.6-1.

Implementation of this mitigation measure could reduce this impact to a less-than-significant level if project emissions can be feasibly reduced to net zero levels. If such reductions are not feasible, this impact would remain significant and unavoidable over the life of the project.

Impact 4.6-3:

The project may experience significant adverse physical effects from future effects of Global Climate Change. (Significant but Mitigable)

The potential effects as a result of climate change could include the following:

- Increased GHG Emissions – exacerbation of air quality issues, and an increase in the incidence of infections, disease, asthma, and other health-related problems.
- Reduced Snow/Ice Pack – reduction in quality and supply of water, food dependent on water to grow, hydroelectric power, and winter recreation opportunities.
- Increased Temperatures – decreased supply of agricultural products and increased instance of pests and pathogens, increase in frequency of and destruction from wildfires, migration of plant and animal species to cooler habitats upslope, and decrease in the health and productivity of forests.
- Rising Sea Levels – flooding and subsequent displacement of coastal businesses and residences, reduction in or the destruction of beaches, and damage to marine ecosystems and the natural environment.

Mitigation measures have been identified that seek to reduce project GHG emissions to a less-than-significant level. With regard to reduced snow/ice pack, it is not anticipated that the project would directly obtain its water from the Sierra Nevada snow pack. The project would meet Basin Plan water quality objectives; thereby increasing efficiency and reducing the use of water (see Section 4.10 Hydrology and Water Quality).

With regard to increased temperatures, the project site is located in an agricultural area and may be susceptible to wildfires as a result of climate change. Wildfire risk is determined by a combination of factors including precipitation, winds, temperature, and landscape and vegetation conditions. An increase in temperatures and longer dry periods between rainfalls may increase the threat of wildfires in the project area. Local temperatures could increase over time as a result of global climate change, with or without development as envisioned by the Yolo County 2030 Countywide General Plan (2009b). As discussed in Section 4.9 Hazards, the project site is located outside the zone mapped by CAL FIRE for moderate to extreme wildfire hazard. The project area is designated as “non-fuel” which is for areas, such as agricultural areas, that have limited fuel materials for wildfires. Based on the lack of fuel, the risk of wildfire is low. The increased operation of combustion engines and increased work force during project implementation would increase potential sources

of fire ignition. However, surface vegetation would be removed during mining, offsetting the potential threat for wildfires.

With regard to rising sea levels, the project is inland and protected from the Pacific Ocean by mountain ranges. Only with sudden and catastrophic snow melt from the Sierra Nevada would the Cache Creek bed be expected to fill, which would not occur with climate change impacts alone. Therefore, it is not expected that the project's facilities would be in danger from a threat from rising sea waters. According to records maintained by the Federal Emergency Management Agency (FEMA), the portion of the project closest to and within the Cache Creek channel lies within the 100-year floodplain, i.e. an area subject to flooding in a storm event that has a one percent chance of occurring in any given year (according to averages based upon recorded measurements). It is expected that climate change would result in changing weather and hydrology, such as increased intensity of storms and rising sea levels that could affect flooding patterns, which would result in the reassessment of FEMA flood plains to include a wider area around the creek. It is also possible that sea level rise could reduce the effectiveness of levees within the County (reducing the levee height by raising the base level of the adjacent water body), also increasing the risk of flooding. However, several steps are underway to protect the project area from potential future changes. Levees along Cache Creek are currently being evaluated to determine whether they meet either the 100-year or 200-year flood standard. Several policies and actions of the General Plan would minimize direct flood-related impacts associated with new development. By 2012, the California Department of Water Resources will develop a Central Valley Flood Protection Plan that includes actions to improve integrated flood management and consider the expected impacts of climate change.

In order to consider the potential effects of climate change on the hydrology of Cache Creek a sensitivity analysis was performed on rainfall using the hydraulic model. Although climate change is not discussed in the Cunningham report (2007), their modeling results (for the 10, 100, and 500 year storms) do provide some information to address the affects of larger flows. According to the Cunningham report, the discharge rate for a 200 year storm would be 8 percent larger than the 100 year storm. Given this larger event, the depths of flow and velocity are expected to increase by 4 percent and 2 percent, respectively. In summary, a large more flashy storm, on the order of the 200 year event, would result in 6 inches of flow on the floodplain (>100 year flow) and the velocities would not increase beyond the safety factors (1.5) typically built into the rock toe protection methodologies. Therefore, climate change is not expected to significantly increase the potential for Cache Creek to capture the proposed mining pit.

The General Plan EIR (Yolo County 2009b) includes policies (listed in Appendix D of the EIR) to minimize the impact of global climate change. However, the impacts of global climate change (water supply, effects of flooding, etc.) would be statewide in scope and cannot be fully mitigated by policies and actions included in the General Plan. Implementation of those policies and actions would minimize the severity of the impacts on the County related to global climate change.

Mitigation Measure 4.6-3:

Implement Mitigation Measure 4.6-1.

Implementation of this mitigation measure would reduce this impact to a less-than-significant level.

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4.7 CULTURAL RESOURCES

INTRODUCTION

This section analyzes potential impacts on known or suspected cultural resources caused by project activities. The setting describes the existing conditions of the project site and vicinity. Project-specific impacts are identified and appropriate mitigation measures are recommended to reduce significant impacts to a less-than-significant level.

CONCEPTS AND TERMINOLOGY

The following definitions are common terms used to discuss the regulatory requirements and treatment of cultural resources:

- Cultural resources is a term used to describe several different types of properties: prehistoric and historical archaeological sites; architectural properties such as buildings, bridges, and infrastructure; resources of importance to Native Americans; and human remains. Human remains include those interred both within and outside of formal cemeteries.
- Historic properties is a term defined by the National Historic Preservation Act (NHPA) as any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion on, the National Register of Historic Places (NRHP), including artifacts, records, and material remains related to such a property.
- Historical resource is a CEQA term that includes buildings, sites, structures, objects, or districts; each of which may have historical, prehistoric, architectural, archaeological, cultural, or scientific importance and is eligible for listing or is listed in the California Register of Historical Resources (CRHR).
- Paleontological resource is a term defined as including fossilized remains of vertebrate and invertebrate organisms, fossil tracks and trackways, and plant fossils. A unique paleontological site would include a known area of fossil bearing rock strata.

SETTING

Prehistoric Environment

The earliest archaeological investigations in central California were conducted at sites in the Sacramento-San Joaquin Delta region by avocational archaeologists. The first published accounts of this work documented investigations in the Stockton and Lodi vicinities (Schenck and Dawson 1929). These initial reports were primarily descriptive, and were followed by more systematic investigations in the 1930s by Sacramento Junior College (e.g., excavations at CA-SAC-127, SAC-126, and SAC-107). Archaeologists from the University of California, Berkeley, were also excavating sites in the lower Sacramento Valley and Delta regions at this time. The UC Berkeley investigations were some of the first studies to compare assemblages at different sites across the regions and identify different patterns of assemblage composition at the various sites

they studied. This work provided the foundation for the subsequent development of chronological frameworks for central California prehistory.

The 1930s-era research identified distinct temporal periods in central California prehistory and provided the basis for a chronological sequence of archaeological cultures for the region (Lillard and Purves 1936; Lillard et al. 1939). Lillard et al. (1939), however, assumed that the cultural periods in the sequence were direct antecedents of each other and that cultures from the Delta region spread to other areas of central California. Beardsley (1948, 1954) later documented similarities in artifact assemblages between sites in the Delta and San Francisco Bay regions, and refined the earlier cultural succession model to produce what became known as the Central California Taxonomic System (CCTS). The CCTS proposed a linear and uniform chronological sequence of cultural succession and was divided into temporal-cultural units that included: components, which represent discrete occupational episodes at a site; facies, which represent a series of closely related components; provinces, which are composed of related facies; and horizons, which are broad cultural units composed of a series of temporally and geographically discrete components. Three horizons (Early, Middle and Late) were identified for the archaeological cultures in central California.

The CCTS and other early archaeological research concentrated on material culture (e.g., burial practices) and the development of chronologies based on differences in the composition of assemblages. Issues related to subsistence, settlement strategies, social organization, and trade received minimal or no attention. The CCTS was designed to provide a means of ordering archaeological cultures in central California; but the model, particularly the creation of widespread sequences of cultural succession, was immediately questioned in a series of papers by Gerow (1954, 1974a, 1974b; Gerow with Force 1968). Potential problems with the CCTS were highlighted by radiocarbon data showing that some Early and Middle Horizon sites were at least partially contemporaneous and not part of a wide spread developmental sequence.

Issues with the CCTS led Frederickson (1973, 1974) to propose a new taxonomic system for central California. He addressed the inadequacies of the CCTS by recognizing specific adaptive modes or patterns (i.e., specific economic and/or technological characteristics that are restricted in space, but do not imply a temporal sequence). Fredrickson (1973) defined five patterns (i.e., Windmiller, Berkeley, Borax Lake, Augustine, and Houx) for the North Coast Ranges, the San Francisco Bay and the lower Sacramento Valley, and assigned them to six periods: Paleo-Indian (10,000 to 6,000 BC); Lower, Middle, and Upper Archaic (6,000 BC to AD 500); and Upper and Lower Emergent (AD 500 to 1800). The most relevant patterns to the archaeology of the project area are the Windmiller, Berkeley, and Augustine Patterns. The Windmiller Pattern or Early Horizon extended from 3,000 to 1,000 BC, the Berkeley Pattern or Middle Horizon from 1,000 BC to AD 500, and the Augustine Pattern or Late Horizon from AD 500 to the historic period.

The Early Horizon in central California is characterized by the Windmiller Pattern, which appears to have been centered in the Cosumnes District of the Delta region. Windmiller lithic assemblages include relatively large stemmed projectile points primarily made of chert and slate, suggesting the use of dart, spear thrower or atlatl, and spear technologies. Fishing implements in Windmiller artifact assemblages include trident bone spear tips and two types of bone hooks (Bennyhoff 1950; Ragir 1972). A milling technology is not usually well represented in Windmiller artifact assemblages, but does include mano and metate grinding implements. The generally higher proportion of projectile points to grinding implements in Windmiller artifact assemblages suggests an emphasis on hunting rather than the processing of plant resources. The identification of both terrestrial and aquatic faunal remains at many Windmiller sites also indicates a broad based hunting strategy that includes a wide variety of resources.

Windmiller mortuary patterns are characterized by burial of the dead in both intra-village grave plots and in non-midden cemeteries beyond habitation areas, a ventral extension of the body orientated toward the west and occasionally a dorsal extension of the body orientated toward the west, and the inclusion of abundant grave goods. The presence of artifacts made of exotic materials such as obsidian, shell, and quartz in Windmiller assemblages suggests that by 4,000 BC an extensive trade network existed in central California (cf. Fredrickson 1973).

The Middle Horizon is characterized by the Berkeley Pattern. Berkeley Pattern lithic assemblages suggest the continued use of dart and atlatl technologies, and primarily consist of non-stemmed projectile point forms. Obsidian, however, appears to be the favored material for the manufacture of projectile points. A baked clay industry begins to fluoresce at this time, which includes spool-shaped net weights for either fishing or fowling (Kielusiak 1982; Ragir 1972). Bident bone spears also were in use during this period for acquiring fish resources (Bennyhoff 1950). Milling technology is generally well represented in Berkeley Pattern artifact assemblages and primarily includes minimally shaped cobble mortars and cobble pestles; but also the mano and metate. A generally higher proportion of grinding implements to projectile points in Berkeley Pattern artifact assemblages suggests an emphasis on the processing of plant resources, especially acorns, rather than hunting.

Berkeley Pattern mortuary patterns are characterized by burial of the dead within habitation areas of a site; a flexed position of the body with variable orientations; sprinkling powdered red ochre over burials (Lillard et al. 1939:78); minimal amounts of grave goods, which generally include utilitarian or ornamental objects, but also may include objects (e.g., quartz crystals, charmstones, and bone whistles) that are similar to the contents of “shaman's kits” as described in the ethnographic record (Hughes 1994:44); and the inclusion of bird and animal bone, occasionally articulated portions of skeletons, with the dead. The number of sites and the depth of deposits at Berkeley Pattern sites suggest a larger population in comparison with the earlier Windmiller Pattern. The Berkeley Pattern and the Middle Horizon appear to reflect a gradual change in technology and economic emphasis due to population expansion and possibly assimilation of different cultural groups.

The Late Horizon, highlighted by the Augustine Pattern, is characterized by a change in technology and subsistence strategies. Bow and arrow technology is introduced, as evidenced by an increase in the number of small projectile points in Augustine Pattern lithic assemblages. Mortar and pestle implements continue to be used, with acorns becoming the dominant staple. Fish harpoons appear in Phase I of the Late Horizon, but their use is abandoned by early Phase II. Trade also expands and intensifies at this time, with the acquisition of both finished goods and raw materials from the foothills and coast. Indeed, this time period is marked by an intensification of exchange and subsistence activities and an increase in sociopolitical complexity and social stratification, as suggested by the use of clamshell disk beads as a medium of exchange.

Augustine Pattern mortuary patterns are characterized by either cremation or burial of the dead within habitation areas of a site, pre-interment grave pit burning, a flexed position of the body with variable orientations, and a differential distribution of grave goods with more items being associated with cremations compared to subsurface burial. Cremations may have been reserved for relatively wealthy and prestigious individuals.

Relatively recent archaeological investigations in Solano and Yolo counties highlight the occupation of the area during the Middle and Late Horizons. Some of these investigations include excavations at CA-SOL-363 (Rosenthal and White 1994), CA-SOL-315 (Wiberg 1992), CA-SOL-355/H (Wiberg 1993), CA-YOL-69 (Wiberg 2004), CA-YOL-110, and sites on the UC Davis campus (e.g., CA-SOL-397 and CA-YOL-134). Rosenthal and White (1994) excavated CA-SOL-363 in Dixon to

facilitate construction of a housing development. Their excavations documented 39 burials and 15 features associated with a Berkeley Pattern, Middle Horizon occupation of the site. Wiberg (1992, 1993, 2004) investigated sites CA-SOL-69 in Yolo County and CA-YOL-315 and –355/H in Solano County. His investigations identified occupations at these sites dating from 3,000 BC to AD 500. Excavations at CA-SOL-69 (which is located near Cache Creek) in 2004 by Wiberg, recovered numerous burials and identified a Late Period, Augustine Pattern occupation at the site. Similarly, P. Johnson excavated site CA-YOL-110 (which is located along Cache Creek near Brooks) in 1968, and recovered numerous burials and a large number of artifacts associated with a Late Period, Augustine Pattern occupation at the site. Unfortunately, a report documenting the results of the excavation has not been completed. Other archaeological investigations on the UC Davis campus have also identified Late Period, Augustine Pattern occupations along Putah Creek.

In summary, archaeological investigations in the lower Sacramento River and general project area have expanded our knowledge of its prehistoric inhabitants. Our current archaeological knowledge of the area is far from complete, but it is clear that the project area has a long history of use and occupation by Native American groups.

Ethnography

The project is within Patwin ethnographic territory. Primary sources on Patwin include the ethnographic accounts of Kroeber (1925, 1932), Powers (1877), McKern (1922, 1923), and the testimony of Princess Isidora, wife of Chief Solano (Sanchez 1930)[1]. There are also other secondary publications and overviews of Patwin (cf., Cook 1976; Johnson 1978).

Patwin are the southernmost members of a group of Native American cultures that include the Wintu, Nomlaki, and Patwin; all of whom share a related set of languages. Wintun[2] (i.e., the Native American members of the Rumsey Rancheria identify themselves as the Rumsey Band of Wintun Indians) are members of California Penutian linguistic stock, and they occupied the southwest portion of the Sacramento Valley, from the lower hills of the eastern North Coast Ranges to the Sacramento River, and from Princeton south to San Pablo and Suisun Bays. Wintun are comprised of numerous different tribal groups with separate dialects. Regardless, Wintun culture appears to be relatively similar between the groups; and Kroeber (1932:255) states that the geographic variation across Wintun[3] territory only produced “minor cultural divergences of custom within the overall uniformity of the group.”

Hill Wintun occupied the lower, eastern slopes of the southern North Coast Range and River Wintun occupied the west side of the lower Sacramento River below the mouth of the Feather River and the lower reaches of Cache Creek and Putah Creek in the Sacramento Valley. Kroeber (1932:262) identifies a number of Hill Wintun villages along Cache Creek. Indeed, the village of Kopā′ (Kope) is located near Brooks and the villages of Moso and Kisi are located to the east and west, respectively, of Kopā′. All three of these villages may have been tribal centers.

[1] These sources document historic Patwin culture and do not reflect the modern social or political structure of the Rumsey Band of Wintun Indians.
[2] Wintun will be used to identify Native American groups in the area as an alternative to Patwin to honor the tribal designation of the Rumsey Band of Wintun Indians.
[3] Kroeber identified the groups as Patwin.

Information specifically addressing Wintun political and social organization is relatively scant. Kroeber (1932) considered existing data regarding Wintun social and political organization to be "unsatisfactory." Regardless, there is sufficient ethnographic data to provide a description of Wintun culture. Wintun were organized into tribelets, which were usually composed of a principal village and a few satellite settlements. Tribelets were small, autonomous, and sometimes bounded by the limits of a small drainage. Each tribelet had a head chief, and each village had a chief who administered its economic and ceremonial activities. The position of chief was usually inherited through the male line, but village elders occasionally chose some chiefs. The chief possessed political, ceremonial, and economic powers and enjoyed high prestige (McKern 1922:246). He was the "commissioner" of crops, determined annual harvesting times, allocated lands to family groups, organized resource expeditions (e.g., hunting and wood gathering), and served as the primary distributor of resources (McKern 1922).

McKern (1922: 238-240) discussed Wintun[4] social structure in terms of three systems: the patrilineal family, the family social group, and the household unit. The patrilineal family and descent were important features of Wintun social life; and the authority bestowed on the headman of each patriarchal family was undisputed, except in matters of tribal authority. Inheritance was determined by paternal descent; and possessions passed between generations included not only property and personal effects, but also non-tangible items such as personal names and ritualistic knowledge (e.g., medicine, healing) (Johnson 1978; McKern 1922). The family social group is a larger unit that includes the husbands of female patrilineal family members, and is unified by the authority of the family headman. Matrilocal residence was customary among the Wintun; and husbands routinely remained with their wife's families, at least until they acquired enough wealth to establish an independent household.

Another aspect of Wintun social structure identified by McKern (1922:247-254) is the "functional family." McKern identified that certain Wintun families possessed an esoteric ritual or medicine, which was owned and inherited by the family rather than the individual and guaranteed success for the family in certain endeavors. McKern (1922:247) identified four categories of functional families according to their "specialty." The four categories of functional families are: ceremonial, trade, shamanistic, and official. Members of each particular functional family were qualified to participate in certain ceremonies or tasks. For example, members of: ceremonial families were qualified to participate in specific ceremonies; trade families were specialists in economic and subsistence tasks (e.g., manufacture of baskets and/or the trapping of ducks or salmon); shamanistic families were qualified to prepare medicines and influence the supernatural; and officiating families had a single member who was identified as a ceremonial song leader, dance fire-tender, or dance drummer. The purpose of the functional families seems to be to recognize the importance of training and supernatural assistance in all social and economic activities and also to insure success in these activities (McKern 1922: 258).

Wintun subsistence relied on hunting, fishing, and gathering a wide variety of plant resources that were located within their territory. Acorns were a major part of their diet and were obtained from hill and mountain oaks communally owned by the tribelet (Johnson 1978:355). Other easily gathered resources included blackberries, elderberries, wild grapes, new tule shoots, roots and bulbs, honey, salt (acquired from burning salt grass), and tobacco (Kroeber 1932:280). Ethnographic records indicate that large game (e.g., deer, tule elk, antelope) was captured using nets or were shot using bows and arrows (Johnson 1978:355). Kroeber (1932:279) reports that two men would hold a wide meshed net while other hunters would drive deer into it, and waterfowl (e.g., ducks, geese,

[4] McKern identified the groups as Patwin.

mudhens, quail) were also captured using nets. In addition, Wintun may also have eaten bear (Kroeber: 1932), but Johnson (1978) disputes this statement. Fish were also a prime resource for many groups, and certain fishing sites were privately owned (Kroeber 1932: 277 278; McKern 1922: 248). Fish (e.g., salmon, sturgeon, perch, chub, sucker, hardhead, pike, and trout) and other riverine resources (e.g., turtles and mussels) were caught with bone fishhooks, nets, seines, and weirs. Food resources were generally stored in bins and granaries, which were made of sticks set into the ground and roofed with tules. Regardless of the broad based character of Wintun subsistence practices, they did have taboos regarding the use of certain resources (e.g., lampreys, frogs, snakes, dogs, coyotes, badgers, skunks, grasshoppers, angleworms, caterpillars, reptiles, some predator animals, and certain birds of prey) (Johnson 1978:355; Kroeber 1932:277).

Wintun manufactured a variety of utilitarian and ceremonial/luxury items including baskets, stone tools, mortars and pestles, shell beads, and clothing. Coiled and/or twined baskets of willow and/or split tule were used for various purposes including food collection, preparation, serving and storage, baby carriers, and as grave goods interred with the dead (Johnson 1978:356). A variety of tools (e.g., projectile points, bifaces, drills, scrapers, and knives) were manufactured from obsidian, chert and basalt for utilitarian (e.g., skinning, butchering), and ceremonial (e.g., burial accompaniment) purposes. Mortars of oak and stone and pestles were used to process both plant and animal resources (Johnson 1978: 357). Shell beads were also manufactured for personal adornment and as a medium of exchange. Clothing was generally minimal, with men usually not wearing any clothing and women wearing skirts or aprons of tule or shredded bark (Johnson 1978:358; Sanchez 1930:39). Women also wore highly prized belts of bird feathers wrapped around the waist and "strings of beads (abalorios) wrapped around the body from the breast up as far as the neck" (Sanchez 1930:52). Other clothing included fur blankets (e.g., rabbit pelts) and leather robes, which were sewn together using bone needles and strings of wild hemp. Wintun also built tule balsa boats to facilitate river travel and acquisition of fish resources (Johnson 1978:357).

Wintun traded for various commodities and subsistence resources using clamshell disc beads as a medium of exchange (Hughes 1994:66; Kehoe 1981:381). Wintun obtained finished shell beads from their Pomo neighbors. The worth of disc beads was determined by the length of the string of beads rather than by the quality of individual beads. Wintun obtained obsidian from sources in the southern North Coast Ranges, primarily Napa Valley, and traded it to their neighbors (Johnson 1978:352). Johnson (1978:352) suggests, however, that not all external relationships were friendly, particularly with the Napa Valley region, and that conflicts with Napa Valley groups probably affected the acquisition of obsidian.

Kroeber (1925:364) referred to Wintun territory as a center for several religious sects among groups of central California Native Americans. These sects were generally based on the organization of male secret societies and are characterized by Kuksu or "big-head" dances. Kuksu emphasized curing and shamanistic functions, and its ceremonies generally consisted of impersonating spirits who journeyed from their home to a village, blessed the village, and then returned home (Kroeber 1925:367; Johnson 1978:352; Kehoe 1981:382). In addition, Wintun were unique among California Native Americans in that they participated in two other initiatory societies: the Hesi and Wai saltu (Kroeber 1932:312). The Hesi was a general dancing society that began with the ceremonial training of boys and was described by Patwin as "gentle" rather than "dangerous" (Kroeber 1932:329). The Hesi had the largest membership and the greatest variety of spirit performers. The Wai saltu society, similar to the Kuksu, was more limited in membership and was described by Wintun as "powerful" and "dangerous" (Kroeber 1932:315).

Mortuary customs of the ethnographic Wintun involved elaborate mourning ceremonies and burials in tightly flexed positions that included an individual's personal possessions. Kroeber

(1925:359-361) observed that the Wintun buried their dead in “little graveyards not more than 100 yards from the houses of the living, and often in the village” to prevent grave robbery. Johnson (1978:357) reiterates that cemeteries were usually located within “one end of the community.” Property was buried with the dead in large quantities and in some areas burned near the grave. At death, long burial robes of hemp or sometimes of bear fur, were wrapped around the deceased body (Johnson 1978:356; Kroeber 1932:281-282).

Population and Historic Contact

Central California supported some the densest populations of Native Americans in North America (Kehoe 1981:378). Kroeber (1925:35) states that prior to contact Wintun peoples (e.g., the Wintu, Nomlaki and Patwin) totaled nearly 12,000 individuals. Cook (1976:8, 19) suggests that at ethnographic contact the banks of the Sacramento River “were studded with a series of villages that held almost the entire population of the region,” and the Sacramento Valley had a population density of approximately 3.35 persons per square mile. Cook (1976:13-14) estimated population densities of Wintun ranging from 200-500 persons per village at Euroamerican contact.

Mission registers provide the earliest historic accounts of Wintun populations living at the southern boundary of their territory. Several missions including Mission San Jose (established in 1797) and Mission Dolores and Mission Sonoma (established in 1823) bordered Wintun territory. Consequently, Euroamerican contact with Wintun groups occurred by at least 1800 (Johnson 1978:351). Spanish and mission influence reached as far north as Putah Creek, although Kroeber (1925:357) states that direct Spanish contact centered on Clear Lake and eastward beyond Cortina Creek. Regardless, Bennyhoff (1961) reports that Mission Dolores and Mission San Jose actively sought Wintun converts from “southern villages.”

The influx of European and Spanish explorers and settlers during the 1830s and 1840s rapidly changed Wintun demography. The second quarter of the nineteenth century encompasses the Mexican Period (ca. 1821-1848) in California. This period is an outgrowth of the Mexican Revolution and its accompanying social and political views, which affected the mission system across California. In 1833, the missions were secularized and their lands divided among the Californios as land grants called ranchos (Beck and Haase 1974). These ranchos facilitated the growth of a semi-aristocratic group that controlled the larger ranchos. Local Native American populations, who were essentially used as forced labor, accomplished work on many of these large tracts of land. Native American groups across California were forced into a marginalized existence as peons or vaqueros on large ranchos. Ranchos in the project area include Canada de Capay, Quesesosi, and Rio Jesus Maria (Beck and Haase 1974).

The discovery of gold at Sutter’s Mill in Coloma in 1848 caused a dramatic alteration of both Native American and Euroamerican cultural patterns in California. Once news of the discovery of gold spread, a flood of Euroamericans entered the region and gravitated to the area of the “Mother Lode.” Initially, the Euroamerican population grew slowly, but soon exploded as the presence of large deposits of gold was confirmed in the Sacramento area. The population of California quickly swelled from an estimated 4,000 Euroamericans in 1848 to 500,000 in 1850. Sacramento, established in 1848 by John A. Sutter, Jr., also reflected regional changes in population and was incorporated as a city in 1850 (Hoover et al. 2002). The discovery of gold and the large influx of Euroamerican immigrants had a positive effect on the growth and economic development of the Sacramento region but had a negative effect on Native American cultures. Indeed, the discovery of gold in California marked the beginning of a relatively rapid decline of both Native American populations and culture.

The lower Sacramento Valley and Delta region was an area severely impacted by western settlement. Wintun in the region assimilated into white culture, were placed on small reservations, or died from diseases introduced by Euroamericans (Johnson 1978:351). Diseases introduced by Euroamericans resulted in the annihilation of nearly 75 percent of the native population (Heizer 1960). The decreased population is reflected in the 1972 U.S. Bureau of Indian Affairs census, which lists only 12 native Patwin (Johnson 1978). The former character and the decline of Wintun culture is illuminated by Princess Isidora Solano[5], wife of Chief Francisco Solano, who dictated her memoirs in 1874 at the age of 90 (Sanchez 1930). She recounts the exploits of Francisco Solano, chief of the Suisunes, Topaytos, Yoloitos, and Chuructos and an important ally of General M. Guadalupe Vallejo and describes the abundance of resources (e.g., salmon) in the region prior to the arrival of "the white man" and also highlights the effects of the "white man" on Wintun culture (Sanchez 1930).

The latter half of the nineteenth and early twentieth century witnessed an ongoing and growing immigration of Euroamericans into the area, which was accompanied by regional cultural and economic changes. These changes are highlighted by the development of Woodland, Sacramento, and the surrounding area (e.g., business expansion and agricultural development). The overall development of the region continues to the present.

REGULATORY SETTING

Federal

National Register of Historic Places

The NRHP is the official list of properties recognized for their significance and deemed worthy of preservation. The NRHP Criteria for Evaluation offers a guide to be used by federal, state, and local governments, private groups, and citizens to identify the nation's cultural resources and to indicate what properties should be considered for protection from destruction or impairment. Specific NRHP significance criteria are applied to evaluate cultural resources and are defined in 36 CFR Section 60.4 as follows:

The quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workman-ship, feeling, and association. In general, the resource must be 45 years or older to be identified as potentially eligible historic structures.

State

Surface Mining and Reclamation Act

Project Consistency with SMARA is discussed in Section 4.11, Land Use.

[5] Princess Isidora Solano is identified as Patwin.

California Health and Safety Code

Section 7050.5 of the California Health and Safety Code states that when human remains are discovered no further site disturbance shall occur until the County coroner has determined that the remains are not subject to the provisions of Section 27491 of the Government Code or any other related provisions of law concerning investigation of the circumstances, manner and cause of any death, and the recommendations concerning the treatment and disposition of the human remains have been made to the person responsible for the excavation, in the manner provided in Section 5097.98 of the Public Resources Code. If the coroner determines that the remains are not subject to his or her authority, and the remains are recognized to be those of a Native American, the coroner shall contact the Native American Heritage Commission within 24 hours.

California Register of Historical Resources

The CRHR is used as a guide by state and local agencies, private groups, and citizens to identify the State's historical resources and to indicate which properties are to be protected, to the extent prudent and feasible, from substantial adverse change. The CRHR automatically includes all California properties already listed in the NRHP and those formally determined to be eligible for the NRHP (Categories 1 and 2 in the State Inventory of Historical Resources), as well as specific listings of State Historical Landmarks and State Points of Historical Interest. The CRHR may also include various other types of historical resources that meet the criteria for eligibility, including:

- Individual historic resources
- Resources that contribute to a historic district
- Resources identified as significant in historic resource surveys
- Resources with a significance rating of Categories 3 through 5 in the State Inventory (Categories 3 and 4 refer to potential eligibility for the NRHP; Category 5 indicates a property with local significance)

Local

Project consistency with county mining regulations is discussed in Section 4.11, Land Use. Project consistency with General Plan policies, CCAP, and other applicable regulations is discussed below.

2030 Countywide General Plan (2009)

The County's 2030 Countywide General Plan (Yolo County 2009a) contains two policies relevant to the project:

Land Use and Community Character Element

- **CO-4.1.** Identify and safeguard important cultural resources.

A cultural resource investigation was performed for the project to identify important resources. The investigation included a search of appropriate cultural resource databases and pedestrian surveys of the project site. Therefore, the project would be consistent with this policy.

- **CO-4.13.** Avoid or mitigate to the maximum extent feasible the impacts of development on Native American archaeological and cultural resources.

The site-specific cultural resources investigation and the impact analysis presented in this EIR have been performed to ensure that significant impacts on cultural resources are avoided. Therefore, the project would be consistent with this policy.

IMPACTS AND MITIGATION MEASURES

Standards of Significance

The eight significance criteria for this analysis were developed from criteria presented in the CEQA Guidelines Appendix G, CEQA Guidelines Section 15066(a)(1), and the 2030 Countywide General Plan (Yolo County 2009a). The proposed project would result in a significant impact on cultural resources if it would:

- Cause a substantial adverse change in the significance of a historical resource as defined in CEQA Guidelines Section 15064.5.
- Cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines Section 15064.5.
- Directly or indirectly destroy a unique paleontological resource or site.
- Disturb any human remains, including those interred outside of formal cemeteries.
- Cause a substantial adverse change in religious or sacred sites, or unique ethnic-cultural resources.
- Substantially conflict with applicable plans, policies and regulations of other agencies where such conflict would result in an adverse physical change in the environment.
- Eliminate important examples of the major periods of California history or pre-history.
- Substantially conflict with applicable plans, policies and regulations where such conflict would result in an adverse physical change in the environment.

State CEQA Guidelines Section 15064.5 defines “substantial adverse change” as physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource is materially impaired.

Methodology

ECORP Consulting, Inc. (ECORP) conducted historical and archaeological investigations for the Granite Esparto Mining and Reclamation Project (ECORP 2007). These investigations included a records search at the Northwest Information Center at Sonoma State University, a sacred lands search conducted by the Native American Heritage Commission, consultation with the Native American community, and pedestrian surface survey of the entire project site. In addition, the Applicant has had direct communications with the Rumsey Band of Wintun Indians and has discussed the development of an agreement to support protection of cultural resources at Granite’s existing and future aggregate mining operations.

The record search and Native American consultation did not identify any cultural resources (e.g., prehistoric sites, historic sites, or isolated artifacts) within project boundaries. Pedestrian surface survey identified three historic sites (EC-07-17, -18, and -19) and eleven isolated artifacts. The

three historic sites include a scatter of historic debris, a concrete lined irrigation ditch, and a corrugated metal barn. The eleven historic isolates primarily include miscellaneous farm equipment. None of the historic sites or isolates is eligible for inclusion in the CRHR or is considered a unique archaeological resource as described in CEQA.

The cultural resource investigation also indicates that the southwest portion of the former Adams Homestead may be located within the north central portion of the project site. The cultural resource surveys did not identify any evidence of the historic ranch within the project site. The investigation also assessed the existing structures at the project site. Inspection of the structures and interviews with the property owners indicate that the existing ranch house was built in the 1980s. A previous house, estimated to have been built in the 1920s, was nearly destroyed in a fire and then demolished prior to construction of the existing residence. The remnants of the original residence were bulldozed into a pile, which was cleared from the site during construction of the current residence. The scatter of historic artifacts identified near the current residence at site EC-07-17 appears to be the remnants of this pile of debris. This suggests that it is unlikely that there are significant intact deposits of cultural resources at the site.

The large wooden barn is located south of the existing residence. The barn had previously been used to house sheep but was converted to an equipment storage area. The structure has a wooden frame and corrugated metal siding. The landowner indicated that the barn had also been moved to the site from a property to the north and estimated that the barn was built in the 1950s. A shed, located southwest of the residence, had been brought over from a property located to the north of the project site. According to the landowner, the shed had been rebuilt with modern material and the only remaining original materials were the framing.

A concrete-lined irrigation ditch is located at the western margin of the project site. The ditch is approximately 1,700 feet in length and connects to the West Adams Canal. The West Adams Canal was originally constructed in 1857 and may have historical significance. However, the canal is not located within the project site and would not be disturbed by project mining or reclamation activities.

ENTRIX cultural resources staff visited the locations of the historic sites and isolates, conducted pedestrian surface survey in proximity to the sites and isolated artifacts, and interviewed owners and tenants of the project site in 2009 (ENTRIX 2009b). ENTRIX staff did not identify any new sites or isolated artifacts.

ENTRIX staff conducted a search of the University of California, Museum of Paleontology (UCMP) at University of California, Berkeley, database for the project site. The search identified previously recorded paleontological resources in Yolo County, but did not identify any known paleontological resources within project boundaries. Regardless, the search of the UCMP database suggests that the project area may be sensitive for paleontological resources.

Impacts Found Less than Significant in Initial Study

The Initial Study did not identify any less-than-significant impacts related to cultural resources.

Analysis of Potentially Significant Impacts

Impact 4.7-1:

Potential to substantially change the significance of a historical resource. (Less than Significant)

The cultural resource investigation (ECORP 2007) presented recommendations regarding the eligibility of the identified historical resources for listing on the NRHP and/or the CRHR. One resource, the shed, was considered possibly eligible for listing. The other resources were not considered eligible. However, the shed was determined to be not eligible for listing during the ENTRIX site visit in 2009. According to the landowner, the shed had been rebuilt with modern material, and the only remaining original materials were the framing. Inspection of the shed by ENTRIX confirmed that information and that the shed does not represent an important or unique site related to a significant historic person or event. Therefore, no known historic resources would be substantially changed by project.

Mitigation Measure 4.7-1:

None required.

Impact 4.7-2:

The project could impact historic sites EC-07-17, -18, and -19 and eleven isolated artifacts. (Less than Significant)

Archaeological investigations for the project identified historic sites EC-07-17, -18, and -19 and eleven isolated artifacts and determined that these sites and isolated artifacts do not meet the eligibility criteria for inclusion in the CRHR or for consideration as unique archaeological resources as presented in CEQA Guidelines Section 15064.5 (a) and (b) and PRC Section 21083.2, subdivision (g). These features were not found to be related to any significant historic individuals or events. The sites are not unique in their design or condition. Therefore, the project would not impact any known unique archaeological resources as defined in CEQA.

Mitigation Measure 4.7-2:

None required.

Impact 4.7-3:

The project could result in impacts to previously undiscovered prehistoric and historic resources and human remains. (Less than Significant)

Archaeological and historical investigations for the project identified three historic sites and eleven isolated artifacts within project boundaries. Current investigations for the project and previous investigations near the project area suggest that it is sensitive for prehistoric and historic resources because of its geography (i.e., location near Cache Creek) and the known sites in the area. Therefore, there is a potential to uncover previously unknown prehistoric and historic resources and human remains during ground-disturbing project-related activities.

In the event that an inadvertent discovery of prehistoric or historic resources or human skeletal remains during excavation activities, the Applicant would be required to implement the provisions of OCSMO Section 10-4.410. The provisions require that all work within 75 feet is immediately stopped, notification of the County Coroner (if human remains are encountered), contact with the appropriate Native American community, and recording of found resources by a qualified archaeologist. Adherence to the OCSMO requirements would reduce the potential impact to a less-than-significant level.

Mitigation Measure 4.7-3:

None required.

Impact 4.7-4:

The project could result in impacts to previously undiscovered paleontological resources. (Less than Significant)

A search of the UCMP paleontological database did not identify any known fossil localities[6] within project boundaries, but did identify other documented fossil localities in Yolo County along Cache Creek (UCMP 2009). Notably, a large fossil bone was found in September 2004 by Granite workers during mining activities at the western portion of Capay facility adjoining the project site to the west. The fossil was found in Quaternary alluvium, which are similar to those located at the project site. Upon its discovery, mining activities were halted and the fossil was inspected by professional paleontologists (SWCA Environmental Consultants 2005). The fossil was identified as a partial pelvis of a Columbian Mammoth (Order Probiscidea). No other fossil bones were identified at the site. The fossil was removed from the site under supervision by a qualified paleontologist. Given this nearby fossil find in geologic materials similar to those at the project site, there is a potential to uncover previously unknown paleontological resources during ground-disturbing project-related activities.

In the event that an inadvertent discovery of prehistoric, historic, or paleontological resources or human skeletal remains during excavation activities, the Applicant would be required to implement the provisions of OCSMO Section 10-4.410. The provisions require that all work within 75 feet is immediately stopped, notification of the County Coroner (if human remains are encountered), contact with the appropriate Native American community, and recording of found resources by a qualified archaeologist. Adherence to the OCSMO requirements would reduce the potential impact to a less-than-significant level.

Mitigation Measure 4.7-4:

None required.

[6] Recorded locations where fossils have been discovered.

Impact 4.7-5:

The project could substantially conflict with applicable plans, policies, and regulations where such conflict would result in an adverse physical change in the environment. (Less than Significant)

This project has been analyzed for consistency with applicable plans, policies, and regulations using the following framework:

- Consistency with SMARA – Addressed in Section 4.11, Land Use (particularly Tables 4.11-3 through 4.11-7).
- Consistency with other applicable state plans, policies and regulations – Addressed in each section of Chapter 4.0 of this EIR, as applicable to the subject matter.
- Consistency with the County General Plan – Addressed in each section of Chapter 4.0 of this EIR, as applicable to the subject matter.
- Consistency with the CCAP – Addressed in each section of Chapter 4.0 of this EIR, as applicable to the subject matter. The analysis examines consistency with both the OCMP and the CCRMP (including the CCIP) as applicable.
- Consistency with the County Zoning Ordinance (Title 8 of the County Code) – Addressed in Section 4.11, Land Use (particularly Tables 4.11-3 through 4.11-7).
- Consistency with the County ICMMO (Title 10, Chapter 3 of the County Code) – Addressed in Section 4.11, Land Use (particularly Tables 4.11-3 through 4.11-7).
- Consistency with the County OCSMO (Title 10, Chapter 4 of the County Code) – Addressed in Section 4.11, Land Use (particularly Tables 4.11-3 through 4.11-7).
- Consistency with the County SMRO (Title 10, Chapter 5 of the County Code) – Addressed in Section 4.11, Land Use (particularly Tables 4.11-3 through 4.11-7).

Assuming approval of the requested approvals, including identified mitigation measures and standard conditions of approval, the project is considered consistent with these plans, policies, and regulations pursuant to CEQA. The project site does not contain any cultural resources or historic sites eligible for listing on either the NRHP or the CRHR. In the event of the inadvertent discovery of prehistoric, historic, paleontological resources or human remains, the project would implement the provisions of OCSMO Section 10-4.410. Implementation of OCSMO Section 10-4.410 would ensure the project would comply with the NRHP, California Health and Safety Code, and CRHR.

Mitigation Measure 4.7-5:

None required.

4.8 GEOLOGY AND SOILS

INTRODUCTION

This section analyzes the project impacts on geology and soils. This section also addresses seismic hazards. The setting describes the existing conditions of the project site and vicinity. Project-specific impacts are identified and appropriate mitigation measures are recommended to reduce significant impacts to a less-than-significant level.

SETTING

Topographic Setting

The project site is located along the boundary of the Coast Range and the northern Sacramento Valley. The topography of the site is relatively flat, as it is located within the Great Valley Geomorphic Province. The Northern Sacramento Valley is part of the Great Valley Geomorphic Province, which covers an area approximately 60 miles wide by 400 miles long, that extends from Bakersfield to Red Bluff, California (Bartow 1990). The low-lying Capay Hills begin approximately 2.5 miles to the west of the project site, while the relatively steep eastern slopes of the California Coast Range lies approximately 7 miles west of the project site. The site itself is situated on the flat to very gently sloping floor of the Sacramento Valley. Elevation through the project site is approximately 185 to 190 feet above mean sea level.

Regional Geology

The Great Valley Geomorphic Province is a large northwest trending sedimentary basin occupying the area between the Sierra Nevada and Coast Ranges. The basin deepens to the west, and is filled with up to 25,000 feet of sediments shed from the Sierra Nevada volcanic arc and deposited along the continental margin into the offshore basin during the late Mesozoic to early Tertiary (Bartow and Nilsen 1990). Evidence indicates that at depth, the sediments of the Great Valley Province are deposited over the gently west-dipping basement rock of the Sierra Nevada. The Great Valley Province is bounded to the east by the Sierra Nevada Mountain Range.

To the west of the project area is the Coast Range, a northwest trending coastal mountain belt, bordered by the Pacific Ocean. The Coast Range Province extends from the Transverse Ranges, north of the city of Los Angeles, approximately 1,000 kilometers (km) north to the Oregon border. The Coast Range developed with the onset and continued transpressional faulting of the San Andreas Fault System (SAFS), and the northwest structural trend of the Coast Range Geomorphic Province parallels the San Andreas family of faults. The predominant rock types of the Coastal Province are Franciscan complex rocks and Cenozoic marine rocks. Mountains of the Coast Range typically have steep topography and range up to 6,000 feet in elevation; though 2,000 feet is more common (Harden 2004).

Uplift of the Coast Range was contemporaneous with the change of tectonic regime from a convergent margin to a transform boundary (Harden 2004). The major plate tectonic events that dominated the regional geologic history of the area were a Tertiary to Eocene convergent plate margin, the eventual change of the convergent margin to a transform boundary beginning in the

mid-Oligocene with the onset of the San Andreas Fault, the resulting extension and volcanism from the changing plate motions which opened the basin and range province east of the Sierra, and an increase in compression east of the San Andreas Fault beginning about 5 million years ago (Bartow 1990). These events led to the emplacement of the Franciscan coastal rocks against the Sierran basement, the opening of the basin and range, and the later rapid uplift of the Sierran batholith in the late Miocene (Bartow 1990). The Great Valley Sequence is in conformable contact with the underlying coastal Franciscan assemblage in at least two exposures and overlies the Sierran basement rock along the eastern margin of the Great Valley. Geophysical evidence indicates the Sierran basement rock extends westward to at least as far west as the Coast Ranges.

Local Geology

The project site occupies the lower Cache Creek Basin, overlying sand and gravel deposits on the historic floodplain of Cache Creek (Figure 4.8-1). Major formations in the area consist of Quaternary alluvium, Quaternary stream channel deposits, Quaternary basin deposits, and the Pleistocene Modesto Formation. The Modesto Formation is divided into an upper and lower member on the basis of soil horizon formation (Blake et al. 2000). The upper and lower members of the Modesto Formation both consist of fluvially deposited silt, sand, gravel, and clay. Underlying the area, the older, Pliocene Tehama formation consists of channel deposits of moderately compacted silt, clay, and fine sand with lenses of sand, gravel, silt, and cemented conglomerate derived from the Coast Ranges. The Tehama formation outcrops along the edges of Capay Valley and Western Yolo County (California Groundwater Bulletin 118, DWR 2004). Overlying the older formations are alluvium and stream deposits ranging up to 150 feet thick (DWR 2004). The Cache Creek alluvial and stream deposits consist of eroded material from the Tehama, Franciscan, Great Valley, and Cache formations.

Soils

For purposes of this discussion, the term “soil” refers to the combination of organic and mineral material at the surface of the Earth. Soil forms through a complex set of processes which include chemical and physical weathering of bedrock or sediments upon which the soil is developed; accumulation of organic matter through plant, animal, and microbial growth and decay; and accumulation of additional sediment by wind or water. The NRCS (formerly the Soil Conservation Service) has mapped soil numerous types on the project site and its vicinity (U.S. Department of Agriculture [USDA] Natural Resource Conservation Service [NRCS] 2009). Soils in the project area are depicted on Figure 4.8-2.

Phase 1A

The majority soil type in the area of Phase 1A is the Soboba gravelly sandy loam (Sn), covering approximately 78 percent of the area. Riverwash (Rh) accounts for nearly the rest of the soil types underlying Phase 1A. The Soboba series principally occurs on slopes of less than 1 percent, and is typically described as a pale to light-brown, gravelly sandy loam. Infiltration rates are typically very high, as transmissivity of the material is also very high. Caving potential for shallow excavations within the Sn is very high. The Rh unit has very high transmissivity and typically is stratified, gravelly sand found as channels or streams.

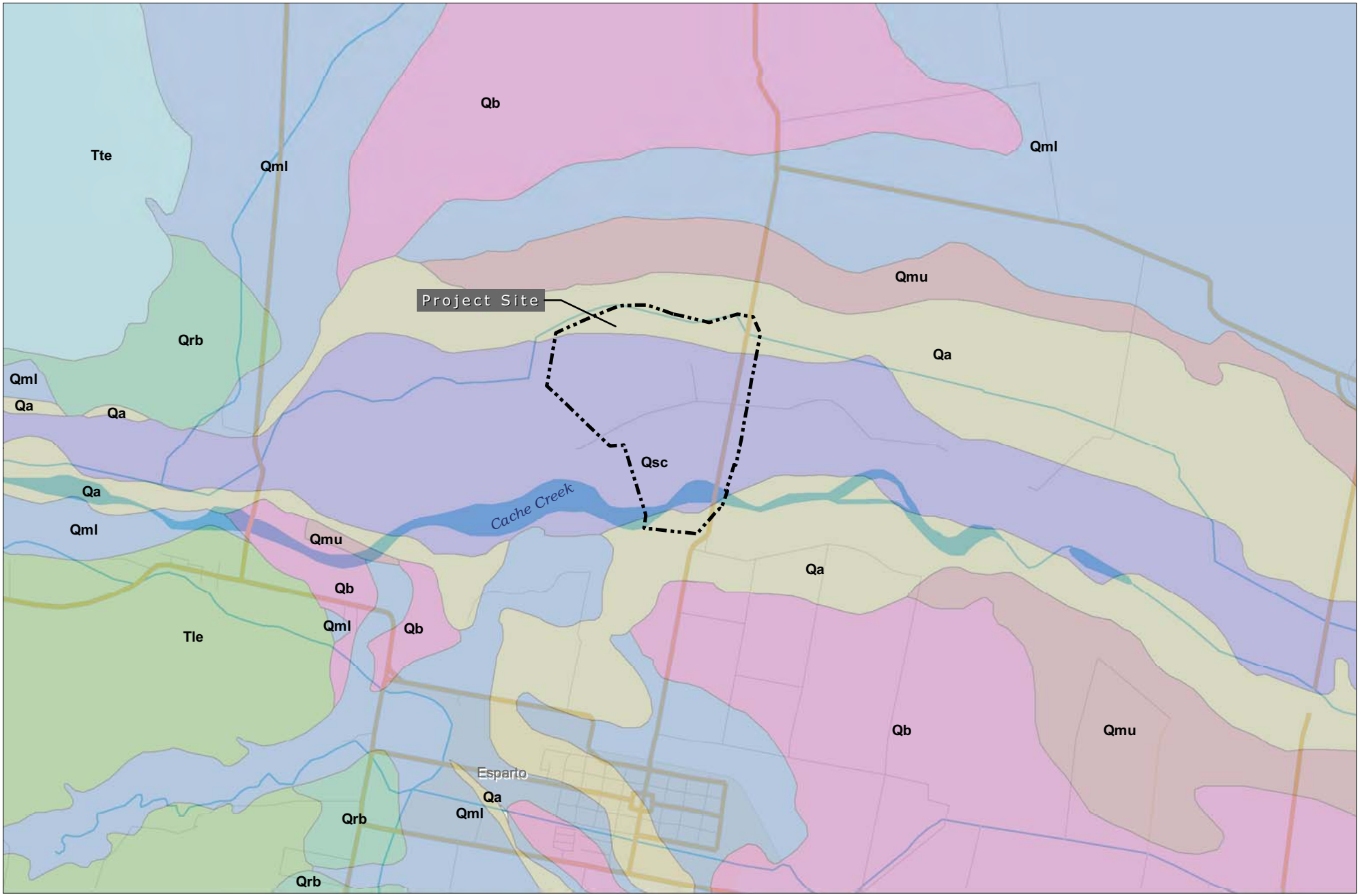

FIGURE 4.8-1

DRAFT EIR
Granite Esparto Mining and Reclamation Project
GEOLOGIC SETTING

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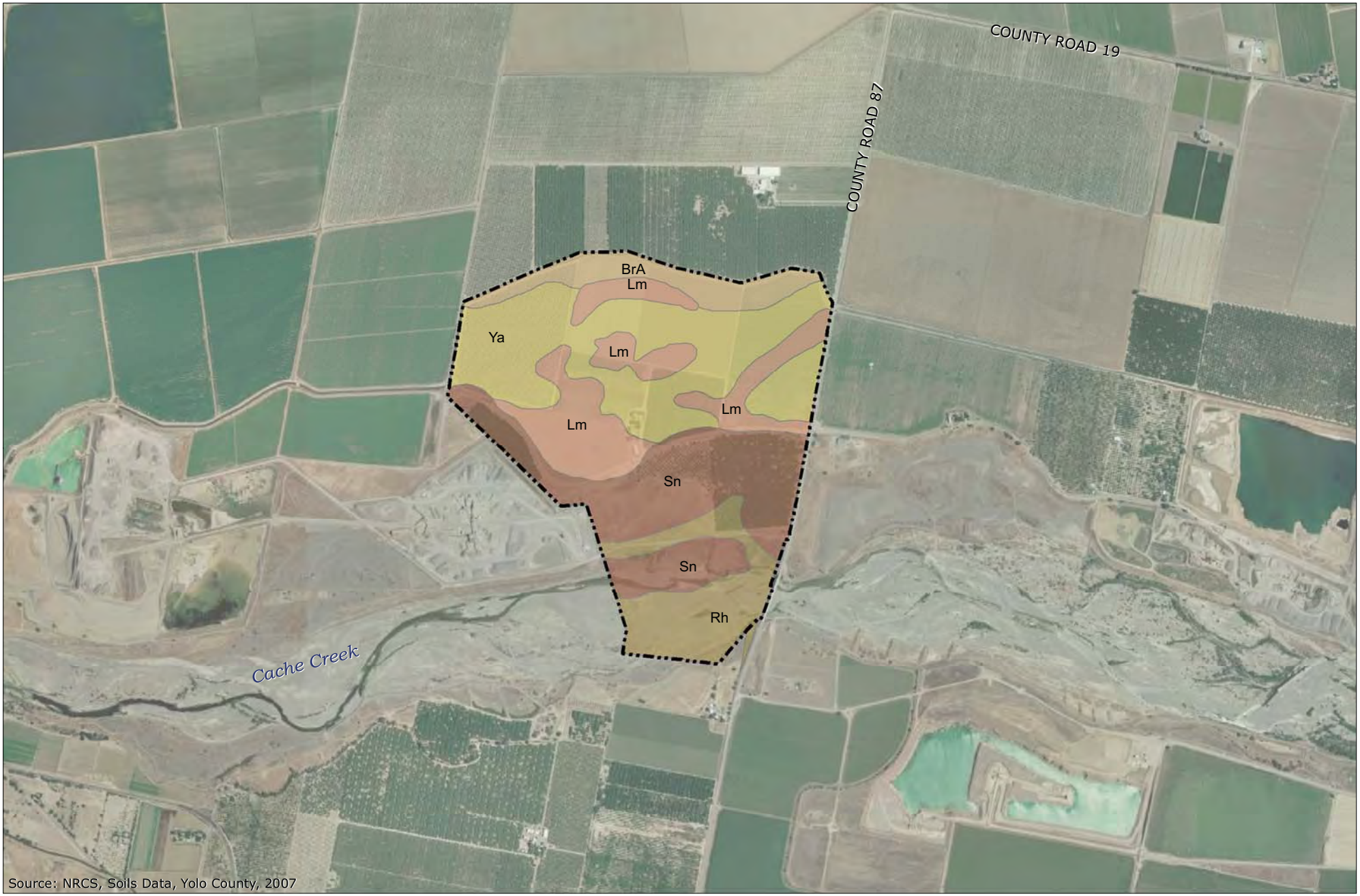

MAP LOCATION

CALIFORNIA

PROJECT AREA SOILS

- BrA, Brentwood silty clay loam, 0 to 2 percent slopes
- Lm, Loamy alluvial land
- Rh, Riverwash
- Sn, Soboba gravelly sandy loam
- Ya, Yolo silt loam
- Project Site

Source: NRCS Soil Data, Yolo County, CA 2007

N

0 0.2 0.4

MILES

FIGURE 4.8-2

DRAFT EIR

Granite Esparto Mining and Reclamation Project

PROJECT AREA SOILS

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Phase 1B and Phase 2

The soils underlying Phase 1B and Phase 2 of the project area range from gravelly sandy loam to silty-clay loam. The largest soil component of the project area is the Yolo silty loam (Ya), comprising approximately 52 percent of the project area. The next most abundant soil is Loamy alluvial land (Lm), comprising approximately 31 percent of the project area, followed by the Brentwood silty-clay loam (BrA) and Sn at approximately 11 and 6 percent, respectively. These soils are typically well to excessively drained, high transmissivity soils that occur as alluvial fans and river deposits. Shallow caving potential in the Ya and BrA is low; it is high in the Lm unit.

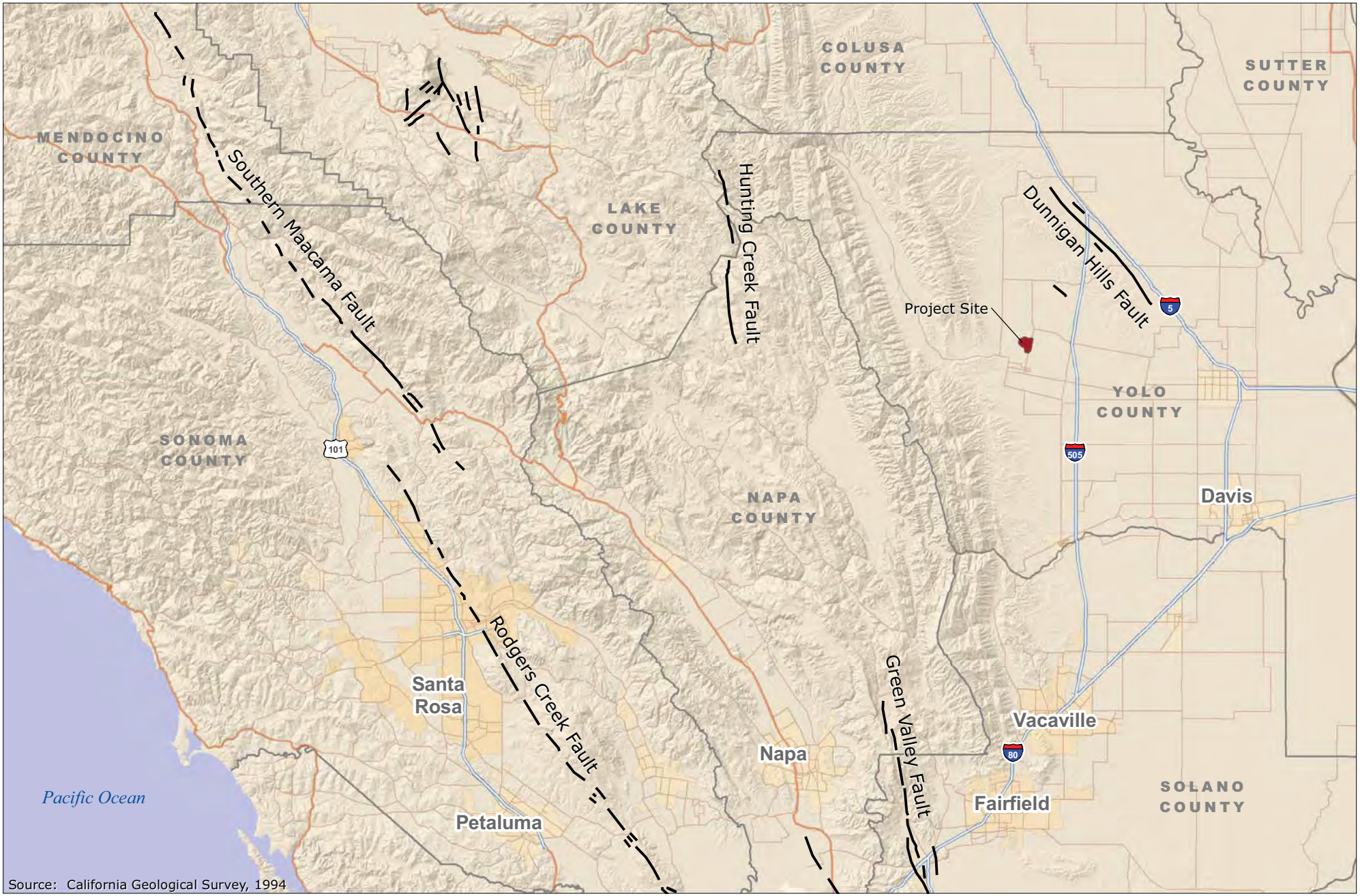
Seismic Hazards

The project area is within a seismically active area of Northern California. The seismicity of the region develops as a response to the relative motion of the Pacific and North American lithospheric plates. The Pacific plate is moving north-northwestward at a rate of approximately 1.0 to 1.4 inches per year relative to the North American plate. The boundary between the plates, termed a transform boundary, defines the SAFS a series of active, right-lateral, strike-slip faults. Additionally, other types of faults and crustal deformation have formed as the result of the complex distribution of strain in the Earth's crust caused by plate motion. The accumulated strain in the crust of the Earth is released episodically during earthquakes. The amount of energy released during an earthquake defines the magnitude (M), and the location of the release of the earthquake energy is referred to as the epicenter. Seismic waves, which cause ground shaking, emanate in all directions from the epicenter. In general, the strength of the seismic waves and the degree of ground shaking decrease with distance from the epicenter. The severity, or intensity, of ground shaking is also controlled by the physical characteristics of the Earth's materials through which the seismic waves travel.

Although it is not located within an active fault zone as defined by the Alquist-Priolo Fault Zoning Act (A-PFZA), the area has the potential to experience moderate ground shaking during earthquakes generated on faults at the western margin of the Central Valley (i.e., the Coast Range-Sierran Block Boundary [CRSBB]) and in the Sierra Nevada Foothills Fault System (SNFFS). Examples of significant earthquakes on the CRSBB are the 1983 Coalinga earthquake (M 6.4) and the 1975 Oroville earthquake (M 6.1).

The State of California considers a fault segment historically active if it has generated earthquakes accompanied by surface rupture during historic time (i.e., approximately the last 200 years). A fault that shows evidence of movement within Holocene time (approximately the last 11,000 years) is defined as active. A fault segment is considered potentially active if there is evidence of displacement during Quaternary time (approximately the last 2 million years) (Bryant and Hart 2007).

Project area faults are shown on Figure 4.8-3. The active faults closest to the project site are several northwest-trending, strike-slip fault zones to the west. Beginning in the foothills of the Coast Range, and continuing west to east, these are the Hunting Creek section of the Hunting Creek-Berryessa Fault System, the Green Valley Fault, the Maacama Fault, and the Rodgers Creek Fault, all part of the San Andreas Fault Zone. Each of these faults is described below and summarized in Table 4.8-1.



LEGEND

- Alquist-Priolo Fault Zone
- Project Site

0 5 10
MILES

N

FIGURE 4.8-3

DRAFT EIR
Granite Esparto Mining and Reclamation Project
REGIONAL FAULT MAP

ENTRIX | Environmental and Natural Resource Management Consultants

Table 4.8-1 Active Faults in the Project Vicinity

Fault/Seismic Source	Maximum Credible Earthquake	Probability of Fault Generating M≥6.7 Earthquake by 2031
Hunting Creek	6.75	Unknown
Green Valley	6.75	2%
Maacama	7.25	Unknown
Hayward–Rodgers Creek	7.50	17%
Coast Range Sierran Block Boundary	7.00	Unknown

Richter magnitude (M) and year for recent or large events. The Richter magnitude scale reflects the maximum amplitude of a particular type of seismic wave. Table derived from Quaternary Fault and Fold Database (Bryant and Cluett 1998, 1999, 2000, 2002) and Working Group on California Earthquake Probabilities (2003.).

The Dunnigan Hills Fault extends from the town of Dunnigan to the town of Yolo. The Dunnigan Hills Fault is not zoned as an active Alquist-Priolo Fault Zone; however, it has been active during the Holocene (last 11,000 years). There is no known evidence that the fault has been active during historic time (within the last 200 years).

The Hunting Creek-Berryessa Fault lies approximately 20 miles west of the project site. The fault is a dextral strike-slip fault, extending from Wilson Valley to Lake Berryessa. The fault likely transfers slip from the Bartlett Springs Fault System (Bryant and Cluett 2000).

The Green Valley Fault lies approximately 30 miles southwest of the project area. The Concord/Green Valley Fault Zone (CFZ) is linked to the San Andreas Fault Zone. The Green Valley Fault is a dextral fault that likely transfers slip to the Maacama Fault. Maximum offset may be several km, and vertical offset is estimated to be up to 150 meters. The fault has a Holocene slip rate of 3.8 mm/year to 4.8 mm/year (Bryant and Cluett 2002).

The Maacama Fault is a northwest trending dextral strike-slip fault extending from near Laytonville in Mendocino County nearly to Mark West Creek in Sonoma County. The fault has been interpreted as a right-stepping extension of the Rogers Creek Fault. The Maacama Fault is a major dextral component of the SAFS. The most recently interpreted seismic activity generating fault rupture along the Maacama strand is estimated to have occurred between 1520 and 1650. The fault is estimated to have a dextral slip rate of between 11 and 14 mm/year. The fault offsets Plio-Pleistocene sediments and Quaternary alluvium. The total fault length is estimated at 144 km (Bryant and Hart 2001).

The Rodgers Creek Fault Zone extends approximately 87 miles from the city of Healdsburg, southward through the western East Bay to Fremont where it connects with the Hayward Fault. The zone is comprised of three segments including (from north to south) the Rodgers Creek, the Hayward North, and the Hayward South segments. Although the zone is considered to be a single fault, the three segments may rupture together or separately during earthquakes. In general, the longer the length of fault ruptured in a single seismic event, the larger the magnitude (and the damage) of the resulting earthquake. The boundary between the northerly Rogers Creek segment and the Hayward North segment is formed by a stepover within San Pablo Bay. The stepover is considered a significant barrier to propagation of rupture between the two segments. No large historic earthquakes are known to have occurred on the Rogers Creek segment. Due to this lack of recent activity, significant strain has accumulated on the Rogers Creek segment and the excepted probability of an M 6.7 or greater earthquake on the system in the period 2002 to 2031 is approximately 17 percent (Working Group on California Earthquake 2008).

The California Geological Survey (CGS) and the U.S. Geological Survey (USGS) have evaluated the potential levels of seismic shaking caused by earthquakes on known or suspected seismic sources (i.e., active faults) throughout the project vicinity. Maps of the expected maximum level of seismic shaking caused by any of these sources have been developed for the project vicinity. The expected maximum ground acceleration, 10 percent probability of occurring in the next 50 years calculated using USGS application (Working Group on California Earthquake 2008) shows a peak ground acceleration of 0.2 gravity (g) near the eastern portion of the project site, 0.4 g over hard rock, and up to 0.4 g over alluvium near the western portion of the site.

Another measure of the level of seismic shaking is "intensity," a more subjective description of the effects of earthquakes is represented by the Modified Mercalli Intensity (MMI) scale (Table 4.8-2). Based on the estimates of ground acceleration described above, maximum projected earthquake in the project area is expected to have an MMI rating of VIII.

Table 4.8-2 Modified Mercalli Intensity Scale

Intensity Value	Intensity Description	Average Peak Acceleration
I	Not felt except by a very few persons under especially favorable circumstances.	< 0.0015 g
II	Felt only by a few persons at rest, especially on upper floors on buildings. Delicately suspended objects may swing.	< 0.0015 g
III	Felt quite noticeably indoors, especially on upper floors of buildings, but many people do not recognize it as an earthquake. Standing motor cars may rock slightly. Vibration similar to a passing of a truck.	< 0.0015 g
IV	During the day felt indoors by many, outdoors by few. At night, some awakened. Sensation like heavy truck striking building.	0.015 g – 0.02 g[1]
V	Felt by nearly everyone, many awakened; unstable objects overturned. Disturbances of trees, poles, and other tall objects sometimes noticed.	0.03 g – 0.04 g
VI	Felt by all, many frightened and run outdoors. Some heavy furniture moved; a few instances of fallen plaster or damaged chimneys.	0.06 g – 0.07 g
VII	Damage negligible in buildings of good design and construction; slight to moderate in well-built ordinary structures; considerable in poorly built or badly designed structures; some chimneys broken.	0.10 g – 0.15 g
VIII	Damage slight in specially designed structures; considerable in ordinary substantial buildings, with partial collapse; great in poorly built structures. Sand and mud ejected in small amounts. Changes in well water.	0.25 g – 0.30 g
IX	Damage considerable in specially designed structures; well-designed frame structures thrown out of plumb; great in substantial buildings, with partial collapse. Underground pipes broken.	0.50 g – 0.55 g
X	Some well-built wooden structures destroyed; most masonry and frame structures destroyed with foundations; ground badly cracked. Rails bent. Shifted sand and mud. Water splashed (slopped) over banks.	> 0.60 g
XI	Few, if any, (masonry) structures remain standing. Bridges destroyed. Broad fissures in ground. Underground pipelines completely out of service. Earth slumps and land slips in soft ground. Rails bent greatly.	> 0.60 g
XII	Damage total. Practically all works of construction are damaged greatly or destroyed. Waves seen on ground surface. Lines of sight and level are distorted. Objects are thrown upward into the air.	> 0.60 g

[1]g = gravity = 981 centimeters per second squared (cm/s^2)

Source: CGS 2002 ("How Earthquakes and Their Effects Are Measured")

Seismic Shaking

The project area may experience significant ground shaking during expected earthquakes on the regional faults discussed above. The CGS and the USGS have evaluated the potential levels of seismic shaking throughout the project vicinity caused by earthquakes on known or suspected

seismic sources (i.e., active faults). Maps of the expected seismic shaking caused by these sources have been developed for the project vicinity (CGS 2007). The maps indicate the expected peak and spectral accelerations with a 10 percent probability of exceeding these accelerations in the next 50 years (or a ground-motion return period of 475 years). Acceleration is measured as a fraction of the acceleration due to gravity (g). The expected acceleration at a particular location is a function of several variables including distance from the energy release of the seismic event, earthquake magnitude, and the material properties of rock or sediments underlying the location.

As described above, there is more than one seismic source that could affect the project site. Additionally, the geologic materials within the project area are unconsolidated fluvial deposits. Peak acceleration at the project site is expected to be 0.36 g with a 10 percent probability of recurrence in 50 years.

Another measure of the level of seismic shaking is "intensity," a more subjective description of the effects of earthquakes represented by the MMI scale (Table 4.8-2). Association of Bay Area Governments (ABAG 2007) has developed MMI scale maps for the San Francisco Bay region, including the project area. These maps were developed for a wide range of seismic events on the Bay Area seismic sources. The expected intensity scale at the site corresponds to MMI VIII.

Liquefaction and Related Ground Failure

Liquefaction is the temporary transformation of loose, saturated granular sediments from a solid state to a liquefied state as a result of seismic ground shaking and increased pore water pressures. In this process, the soil undergoes transient loss of strength, which commonly causes ground displacement or ground failure. Since saturated soils are a necessary condition for liquefaction, soil layers in areas where the groundwater table is near the surface have higher liquefaction potential than those in which the water table is deep. Clean granular materials such as sand have the highest potential for liquefaction as compared to fine-grained sediments (including silt and silty clay) and coarser sediments (such as gravel).

The CGS recommends designating areas underlain by saturated Holocene alluvial sediments potentially subject to 0.1 g seismic shaking as "liquefaction hazard zones" (CGS 2004). Liquefaction hazard maps have not been developed for Yolo County. Liquefaction hazard mapping provided by ABAG for the adjacent southern Solano County, east of the Coast Ranges, and on the valley floor between Interstate (I-) 5 and I-505 generally show low to moderate liquefaction susceptibility hazards with occasional interfingered high susceptibility zones along creeks within the Coast Ranges. As the stratigraphy across the Northern Great Valley (Sacramento Valley) is similar, it is assumed in this analysis that liquefaction hazards would also be moderate within the project area. Based upon USGS Open File Report 00-444 (Knudsen et al. 2000), Quaternary to Holocene stream terrace deposits where groundwater is 30 to 50 feet below ground surface are considered at moderate susceptibility for liquefaction, where moderate is defined as "expected to liquefy in a Magnitude 8 event but not a Magnitude 6.5 event…" Knudsen et al. (2000) assumed the peak ground acceleration was between 0.2 and 0.3 g. Undifferentiated Holocene alluvium was also rated as moderate for a groundwater table 30 to 50 feet below the ground surface, and ground acceleration between 0.2 and 0.5 g. Groundwater elevation across the site is generally 40 feet below the ground surface, and peak ground acceleration is projected to be 0.36 g. The expected level of seismic shaking for the project area would not likely induce liquefaction on most of the project site.

REGULATORY SETTING

Federal

The federal Water Pollution Control Act of 1972 and CWA of 1977 regulate the discharge of pollutants into waters of the U.S., including the discharge of sediment to surface water as a result of erosion. The NRCS National Engineering Handbook presents standards for planning, design, and construction of soil conservation practices to be implemented during construction projects.

State

Under the A-PFZA, the State of California defines an active fault as one that exhibits evidence that surface rupture has occurred within the last 11,000 years (i.e., Holocene activity). Under the Act, the State has identified active faults within California and has delineated "earthquake fault zones" along active faults. This act restricts development of structures for human habitation within the earthquake fault zones to reduce the potential for injuries and damage caused by fault rupture.

Surface Mining and Reclamation Act

Project Consistency with SMARA is discussed in Section 4.11, Land Use.

Seismic Hazard Mapping Act

The State of California passed the Seismic Hazard Mapping Act in 1990, following the 1989 Loma-Prieta earthquake. The act was passed to reduce the potential impacts on public health and safety and to minimize property damage caused by earthquakes. The act established a requirement for the identification and mapping of areas prone to the earthquake hazards of liquefaction, earthquake-induced landslides, and amplified ground shaking. The act requires site-specific geotechnical investigations to identify potential seismic hazards and formulate mitigation measures prior to permitting most developments designed for human occupancy within the Zones of Required Investigation.

A Seismic Hazard Zone Map for the project site has not yet been published. However, the geologic conditions within the project area are similar to adjacent areas with published maps identifying seismic hazards. The topography within the project area is gently sloping to flat.

California Building Code

The 2007 California Building Code (CBC) is based on the 2006 International Building Code Uniform Building Code, with the addition of more extensive structural seismic provisions. The CBC was adopted by the California Building Standards Commission and became effective January 1, 2008. Yolo County has adopted the 2007 CBC (Caldero, pers. comm., 2009). The CBC is contained in Title 24 of the California Code of Regulations (CCR), California Building Standards Code, and is a compilation of three types of building standards from three different origins:

- Building standards that have been adopted by state agencies without change from building standards contained in national model codes,
- Building standards that have been adopted and adapted from the national model code standards to meet California conditions, and

- Building standards authorized by the California legislature that constitute extensive additions not covered by the model codes that have been adopted to address particular California concerns.

Seismic sources and the procedures used to calculate seismic forces on structures are defined in Section 1613 of the CBC. The code requires that all structures and permanently attached non-structural components be designed and built to resist the effects of earthquakes. The code also includes grading and other geotechnical issues, building specifications, and non-building structures.

Local

Project consistency with county mining regulations is discussed in Section 4.11, Land Use. Project consistency with General Plan policies, CCAP, and other applicable regulations is discussed below.

2030 Countywide General Plan (2009)

The County's 2030 Countywide General Plan (Yolo County 2009a) contains two policies relevant to the project:

Health and Safety Element

- **HS-1.1.** Regulate land development to avoid unreasonable exposure to geologic hazards.

This project proposes no new land development. Therefore, the project would be consistent with this policy.

- **HS-1.3.** Require environmental documents prepared in connection with CEQA to address seismic safety issues and to provide adequate mitigation for existing and potential hazards identified.

This EIR addresses seismic safety issues. Therefore, the project would be consistent with this policy.

Off-Channel Mining Plan

The County's OCMP contains the following actions relevant to the project:

Chapter 2: Aggregate Resources Element

- **Action 2.4-2.** Hazardous materials business plans must be submitted biennially, as required by the California Health and Safety Code, unless the types of hazardous materials used change, in which case revised business plans must be submitted within thirty (30) days of the change.

As described in Section 4.9, Hazards, the proposed project would likely qualify as a business storing and using hazardous materials. As such, the project would be required to submit a hazardous materials business plan and would be consistent with this action.

- **Action 2.4-3.** Establish a "sunset clause" for each surface mining permit. This would set defined length of time during which mining may occur. Any extensions beyond the permit expiration would require further environmental review and discretionary approval. The term of mining should be balanced so as to allow sufficient time for the operator to amortize investments, without sacrificing regulatory effectiveness. The maximum length of time for which any surface

mining permit may be approved is thirty (30) years, with ten (10) year reviews to examine actual environmental impacts and to apply any relevant environmental regulations or statutory changes promulgated by a responsible or trustee agency with authority over a particular environmental resource (such as air, water, habitat, state lands, etc.), including Yolo County. An additional review may be held fifteen (15) years after permit approval, at the discretion of the Planning Commission. The reviews will also be used to verify whether per-ton fees are sufficient to meet actual costs. The mining permit may be extended for a maximum period of twenty (20) years, if necessary, subject to the same ten- and optional fifteen-year review requirements.

The Applicant has requested a 30-year mining permit from the County which means the permit would expire in 2039. Pursuant to the CCAP and associated regulations the Applicant would be required to undergo 10 year reviews, and the discretionary 15 year review, as conducted by the County. Therefore, the project would be consistent with this action. Cumulative Impact 5.3 addresses potential inconsistency between the requested 30-year permit and the current OCMP program which ends in 2026.

- **Action 2.4-7.** Require that all surface mining applications within the OCMP plan area include a proposal for providing a "net gain" to the County, as determined by the following criteria:

  a. reclamation to multiple or conjunctive uses;

  b. enhancement and enrichment of existing resources; and/or

  c. restoration of past sites where the requirements of reclamation at the time no longer meet community expectations in terms of good stewardship of the land.

As described in Section 3.5, the Applicant has proposed to dedicate the Granite Woodland ("Reiff") property to Yolo County under criteria "c" above. Therefore, the project would be consistent with this action. The County and Applicant will execute a development agreement to memorialize the net gains package and other aspects of the project. The Board of Supervisors will determine whether the nets gains as proposed adequately satisfy this action or whether modifications to the package is required.

IMPACT ASSESSMENT

Significance Criteria

The five significance criteria for this analysis were developed from criteria presented in the CEQA Guidelines Appendix G and the 2030 General Plan Final EIR (Yolo County 2009b). Four Appendix G criteria not listed below were previously addressed in the Initial Study, which indicated the project would have a less-than-significant impact on the geology, soils and seismicity described in those five criteria (see Impacts Found Less-than-Significant in Initial Study, below). The proposed project would result in a significant impact on geology, soils, and seismicity if it would:

- Expose people or structures to substantial risk of loss, injury, or death involving:
  - Rupture of a known active or potentially active earthquake fault;
  - Strong seismic ground shaking;
  - Seismic-related ground failure, including liquefaction; or
  - Landslides

- Expose people, structures, or infrastructure to increased risk of injury or damage due to the presence of expansive soils, corrosive soils, soil settlement or compaction, or other geological conditions.
- Result in substantial erosion, loss of top soil, or unstable slope or soil conditions through alteration of topographic features, dewatering, or changes in drainage patterns.
- Result in the destruction, covering, or adverse modification of a unique geologic or physical feature.
- Substantially conflict with applicable plans, policies and regulations where such conflict would result in an adverse physical change in the environment.

Methodology

Impacts were evaluated on the basis of information developed through review of existing published reports and mapping. Site-specific information prepared for the Applicant was also reviewed and, when appropriate, incorporated into the analysis of impacts. Previous quantitative modeling of slope stability by Wallace-Kuhl & Associates, Inc. (2007b) was used as part of the analysis. The assessment assumes that published mapping of geology and soils at the project site are adequate for characterization of potential landscape stability and suitability.

Impacts Found Less than Significant in Initial Study

The following impacts were determined to be less than significant in the Initial Study and are not analyzed further in this EIR.

Potential for fault rupture. The project site is not located within an Alquist-Priolo Earthquake Fault Zone (A-PEFZ). The closest A-PEFZ identified by the State Geologist is the zone delineated for the Dunnigan Hills Fault, located approximately 4.5 miles east of the project site. Because no active faults have been identified at or adjacent to the project site, the risk for fault rupture is very low.

Potential for liquefaction. Clean granular materials, such as sand, have the highest potential for liquefaction as compared to fine-grained sediments (including silt and silty clay) and coarser sediments (such as gravel). The California Geological Survey recommends designating areas underlain by saturated Holocene alluvial sediments potentially subject to 0.1g seismic shaking as “liquefaction hazard zones.” Some of the alluvial sediments at the Project Site may meet the conditions for liquefaction hazards. The potential adverse effects of liquefaction could include lateral spreading or settlement that could damage structures or other improvements (including reclamation features). However, the required conformance of the provisions of the OCSMO and SMRO would reduce the impacts of liquefaction to less than significant.

Adverse effects of expansive soils. The soils on the project site have a low shrink-swell potential. Further, no structures or roadways are proposed on expansive soils. The potential for soils to swell (expand in volume) upon wetting and to shrink (contract) upon drying is generally refer to as “shrink-swell potential.” A high potential indicates that the soil can undergo significant changes in volume during fluctuations in soil moisture. Significant changes in soil volume can damage structures and pavements. Soils mapping of the area of the project site by NRCS (2009) identifies five soil mapping units within the project site: BrA, Lm, Rh, Sn, and Ya. All these soils, except the BrA, have low linear extensibility and a low shrink-swell potential. The shrink-swell potential for the BrA is high. The soil mapping unit is mapped along the northern margin of the site. No structures or roadways are proposed in this area of the site. The proposed plant site would be constructed after

removal of surface soils and overburden and be founded on sand and gravel deposits (equivalent to Rh) which have a low shrink-swell potential. Therefore, the shrink-swell potential at the project site would not have a significant impact on structures or roads constructed with standard foundation practices.

Septic system hazards. The project site is not served by a public sanitary sewer system. The project proposes to provide portable toilets to serve the sanitary needs of workers and visitors to the site, resulting in less-than-significant impacts. An existing on-site septic system would be removed in compliance with Yolo County regulations.

IMPACTS AND MITIGATION MEASURES

Analysis of Potentially Significant Impacts

Impact 4.8-1:

Groundshaking from earthquakes could damage project facilities and pose a safety risk to site visitors. (Significant but Mitigable)

Although the risk of fault rupture is very low, the proximity of the site to active regional faults, including the Coast Range-Sierran Block Boundary Zone, expected earthquakes generated on these faults would result in significant seismic shaking throughout the project site. The CGS and the USGS have evaluated the potential levels of seismic shaking throughout the project site caused by earthquakes on known or suspected seismic sources (i.e., active faults). Maps of the expected maximum level of seismic shaking caused by any of these sources have been developed (USGS 2007). The maps indicate the expected maximum acceleration with a 10 percent probability of occurring in the next 50 years. Acceleration is measured as a fraction of the acceleration due to gravity (g). The expected maximum acceleration at a particular location is a function of several variables, including distance from the epicenter of a seismic event, the magnitude (i.e., energy release) of the seismic event, and the material properties of the geologic material underlying the particular location.

As described above, there is more than one seismic source that could affect the project site. The geologic materials within the project site are uniformly heterogeneous unconsolidated alluvial (i.e., stream) deposits. The estimated maximum ground acceleration (10 percent probability of exceedance in 50 years) is expected to range between 0.3 g to 0.4 g (USGS 2007).

Another measure of the level of seismic shaking is “intensity,” a more subjective description of the effects of earthquakes described by the MMI scale (Table 4.8-2). The expected maximum acceleration at the site corresponds to a range between MMI VIII and MMI IX, where damage to specially designed structures is possible; and changes in groundwater may occur. Secondary ground failures during regional earthquakes could potentially result in damage to the proposed project facilities. Additionally, seismic shaking could increase the occurrence of seismically-induced landsliding along steep slopes, particularly during periods of prolonged or intense rainfall.

The equipment necessary to facilitate the mining operation requires a weaving together of extraction and collection points to a central processing facility by over 2 miles of conveyor belt, with structural heights reaching up to 75 feet. Additionally, the operation requires the use of rock crushers, mobilized equipment, and a total of 12 production pumps for use in moving slurry and pumping groundwater. Stockpiles of extracted material are placed at the angle of repose and reach heights up to 40 feet. Strong seismic shaking in the regional area has the potential to affect structures, create hazards related to collapse of stockpiled material, or create seiche which may destabilize and damage the floating dredge or its components.

In its current configuration, at Granite's adjacent gravel extraction operation, there are 5,700 feet of overland pit conveyors leading to the aggregate processing plant. The conveyor system consists of 20-foot-long trusses bolted together, which transport rock from source and stockpile areas to processing machinery and facilities. Starting at the floating dredge, material is transported by 600 feet of floating conveyor belt to a series of 4 Metso Minerals dewatering screens (2 for sand, 2 for gravel) equipped with spray bars. The dredge is 45 feet high, 50 feet wide, and 100 feet long, weighs 345 tons, and holds a 16 cubic yard Rohr clamshell. The conveyor system then transports the sorted, raw aggregate material a distance of 584 feet to a height of 75 feet, where the aggregate enters the aggregate processing plant which consists of rock washers, separator screens, 2 secondary rock crushers, and a central control tower located 50 feet off the ground surface. The foundation of the aggregate processing plant is a 125 by 63 feet concrete slab buried 7.5 feet in the ground.

Seismic shaking has the potential to initiate seismically induced waves within enclosed bodies of water (seiche). Phase 2 of the project is the creation of 195-acre lake, which when complete would be 1,800 feet in length along its long axis, and between 500 and 900 feet wide. Smaller, temporary lakes between 200 to 400 feet long are planned as part of the project. With the increase in size of Phase 2 to 195 acres of open water, the potential for greater wave heights increases should seismic shaking of a repetitive cyclic nature occur, which creates a frequency along the open water amplifying wave motions. Although quantitative seismic analysis of this possibility was not conducted, it may be probable that destabilization of the floating dredge by seismically induced wave action could create a tipping hazard or, more likely, create damage to ancillary pieces of the dredge machinery, such as the connecting conveyor system should the dredge move unexpectedly.

Seismically induced damage to the central aggregate processing facility is also possible, though unlikely due to a substantial foundation. The most likely hazard associated with seismic shaking is the release of loose rock from the conveyor system or collapse (partial or otherwise) of stockpiles of rock.

Seismic shaking could result in significant impacts on the following project components:

- Damage to land-based connections to the dredge in the event of differential motion between the water surface and land surface resulting from seismic shaking,

- Potential up-ending of the dredge should wave action result from seiche or waves generated by large rockfall or landslides into the wet pit precipitated by seismic shaking, and
- Potential injury from collapse of loose stockpiled sand, gravel, and rock.

Mitigation Measure 4.8-1:

The Applicant shall minimize risks to facilities and on-site visitors by identifying and avoiding unsafe conditions. The Applicant shall consult with the dredge manufacturer regarding methods to stabilize the dredge in the event of seismic shaking. Methods may include anchoring, connecting the dredge to land via cable, or other appropriate systems. The Applicant shall design slopes leading to the wet pit in accordance with the project-specific slope stability study (Wallace-Kuhl & Associates, Inc. 2007b). The Applicant shall train on-site workers regarding seismic safety issues, including actions to be taken during strong seismic shaking and potential hazards of seismic shaking, including rockfall from overhead conveyor systems and collapse of stockpiled rock material. The Applicant shall require workers and on-site visitors to wear safety equipment, such as hard hats.

Implementation of this mitigation measure would reduce this impact to less than significant.

Impact 4.8-2:

The project would have a potential for slope failure or significant erosion. (Less than Significant)

The topography of most of the existing project site is relatively flat to gently sloping. These areas are on the terrace surface above Cache Creek and are used for agricultural production. The terraced surface is stable from a slope stability perspective. However, the southern portion of the project site is occupied by the active channel of Cache Creek, including the banks at the margin of the channel. The banks are relatively high and steep and are susceptible to periodic erosion by flow in the creek (e.g., at high flows or as a consequence of changes in the position of the low flow channel). These slopes are prone to shallow, rotational landslides, or slumps.

The mining excavations proposed by the project would create slopes at the margins of the mining areas during mining and after reclamation. The project would also result in the formation of temporary stockpiles of topsoil, overburden, and aggregate products. Additionally, the project proposes the construction of landscaped berms at the southern and eastern margins of the site.

The mining process would begin by clearing vegetation (including agricultural crops, orchard trees, and grasses/ruderal plants) from the surface. Following removal of vegetation, the topsoil (i.e., A-horizon) would be removed using scrapers and bulldozers (in accordance with OCSMO Section10-4.432). The topsoil would be stored in segregated stockpiles within the project site for future use in reclamation activities. Shallow subsoils consisting of B-horizon and C-horizon would be excavated and stockpiled. The stockpiling locations would include the area of proposed landscaped berms along the southern and eastern margins of the mining area. Stockpiles and berm slopes would be contoured to slopes in conformance with

the OCSMO, and would be planted with native vegetation to reduce the potential for erosion of the stockpiled material.

The application indicates that the mining, stockpile, and berm slopes above groundwater and to 5 feet below the average summer low groundwater level, would be maintained at a maximum gradient of 2:1 (horizontal:vertical). Slopes extending from 5 feet below the groundwater level to maximum mining depth (approximately 75 feet below the ground surface) would be excavated at 1.5:1. The slope design meets the performance standards set by Section 10-4.431 of the OCSMO. This slope design applies to all areas except the slopes adjacent to the West Adams Canal and along County Road 87, which are described below.

A slope stability analysis (Wallace-Kuhl & Associates, Inc. 2007b) has been performed to evaluate the potential for failures on the most critical slopes proposed by the project. These slopes include the slopes adjacent to the West Adams Canal and those extending 500 linear feet south along County Road 87 from the canal. These slopes are designed to be no steeper than 3:1 from the top of the slope to the elevation 5 feet below the summer low-groundwater level. Slopes extending 5 feet or more below the summer low-groundwater level would have a gradient of 1.5:1, except along County Road 87 where slopes below the summer low-groundwater level would be maintained at 2:1 or flatter slope angle. The factors of safety determined by the slope stability analysis for static conditions ranged from 1.6 to 2.0, indicating stable slopes. Under seismic conditions, the factors of safety ranged from 1.1 to 1.3. These factors of safety meet the performance standards set for reclaimed slopes set by Section 10 5.530 of the SMRO.

Relatively, small rotational landslides or slumps commonly occur along the banks throughout the lower Cache Creek Basin. Such failures are a component of the bank erosion process. The project includes a Streambank Stabilization Plan as described in Chapter 3 for the full length north bank of Cache Creek at the southern margin of the mining and reclamation area. The plan proposes to contour the slope along the creek bank to a gradient of 3:1. Slope stability analysis for 3:1 slopes at the project site (i.e., underlain by alluvial deposits) indicates that these slopes are stable under static and seismic conditions. A keyway filled with cobbles (natural and/or broken concrete) would be placed (extending to a depth of 5 feet below the ground surface) at the toe of the slope. Additionally, a cobble revetment would be placed from the toe of the slope to a height of 5 feet above the toe. Willow or mule tail cuttings would be planted within the revetment. The top of the slope would be flat and approximately 12 feet wide. The north-facing slope adjacent to the mining/reclamation areas of the project site would be graded to a gradient of 2:1.

The CCRMP defines objectives for stabilizing and managing channel hydraulics within Cache Creek to avoid damage to public structures as well as maintaining Cache Creek in a stable condition beneficial to wildlife. As part of this plan the Test 3 Run Boundary was created, which is the conceptual design boundary resulting from reshaping portions of Cache Creek (Figure 4 of the CCRMP, Yolo County 2002a). Previously, findings from the Granite Off-Channel Mining and Reclamation Cache Creek Updated Hydraulics Study (Cunningham Engineering Corporation 2007) found the 100 year water surface elevation within Cache Creek (peak discharge of 63,500 cubic feet per second) was largely within the Test 3 Run Boundary. According to the Cunningham Engineering Corporation 2007 report, “proposed

off-channel pits should have no adverse impact from high flood flows of Cache Creek, provided satisfactory levee is left in place within the 200' setback between the creek and the pits."

Currently, Granite construction proposes a 200-foot setback with a streambank stabilization berm matched to the estimated 100-year flood elevation (Cunningham Engineering Corporation 2007). Vegetation along the setback would act to reduce the erosive force of flood flows should a flow of greater than 100-year magnitude occur. Further, the separator proposed by Granite between Cache Creek and the planned 195-acre lake is over 200 feet outside the Test 3 Run Boundary line (and the former historic active floodplain).

One potential consequence of bank failure or significant erosion along the bank could include breaching of the separator between the creek and the mining/reclamation area. A breach during mining or reclamation could result in significant damage to the site improvements (including finished slopes) and/or reclamation elements. Such an event could potentially result in a temporary or permanent connection between Cache Creek and the mining areas or reclaimed lake (i.e., pit capture). Adverse effects to habitat (including reclamation habitat) or water quality could occur. Breaching of the separator between Cache Creek and the reclamation area would result in a significant impact.

The potential for breaching of separators between mining areas and the active channel of Cache Creek was evaluated in the OCMP EIR. The County established minimum setbacks between mining areas and the creek to minimize the potential for such an occurrence. The setback requirements are codified in Section 10-4.429(d) of the OCSMO. The ordinance requires that off-channel excavations be setback from the creek by at least 700 feet unless it is demonstrated that a smaller distance would not adversely affect channel stability. Mining is allowed with a setback of at least 200 feet if an evaluation is performed to demonstrate stability of the setback area. The evaluation is required to demonstrate 1) that the setback area does not include portions of the historic active floodplain or formerly mined lands, 2) that the setback does not include former historic positions of Cache Creek channels, 3) current hydraulic conditions 1,000 feet upstream and downstream of the site, 4) erosion potential during the 100-year flood (and historic patterns of erosion), and 5) bank slope stability (including during 100-year floods).

Technical studies presented in the project (discussed above) have addressed all of the requirements of Section 10-4.429(d) of the OCSMO. The design of the proposed SSP would provide appropriate protection of the setback area. In accordance with Section 10-3.501 of ICMMO, the Applicant will be required to submit an application for a Flood Hazard Development Permit; and the application will be reviewed by the Cache Creek TAC. Conformance of the project with the requirements of the OCSMO and ICMMO reduces the impact of the potential for breaching of the separator between the proposed mining and reclamation areas and Cache Creek to a less-than-significant level.

Mitigation 4.8-2:

None required.

Impact 4.8-3:

The project would cause exposure to unstable soils. (Less than Significant)

In general, unstable soil conditions could include adverse erosion, slope failure, settlement of fills, liquefaction, and expansive soils. The project proposes filling of portions of the mining areas with processing fines generated during washing of aggregate. The fines are fine-grained sediment transported in wash-water discharges to settling ponds. The hydraulic fill would be allowed to dewater and consolidate but would not be compacted or otherwise treated. Over time, continued consolidation could occur and may result in significant settlement of the fill with resulting changes in drainage conditions.

Fill deposited below the average groundwater level is not likely to compact to any significant degree, provided the groundwater level remains generally stationary. Fill placed above the average groundwater elevation would consolidate with increasing overburden pressure with the net effect that most settlement is likely to occur at highest elevations, farthest from continuous saturation by groundwater and having least pressure from overburden.

In order to address this potential settling effect, Granite has included a Soils Evaluation Report and Reclamation Plan (LFR 2007) which addresses settlement of areas reclaimed to agriculture and provides recommendations to achieve performance criteria. As the reclaimed areas are not intended for residential or other development, isolated areas of settlement would not be anticipated to negatively affect structures or be a safety hazard. Surface surveys that indicate substantial settlement would require releveling with the possible importation of suitable fill. As required by Section 10-5.511 of the SMRO, all areas reclaimed to agricultural use are required to be surveyed after two crop seasons and releveled, if necessary

By following guidelines in the Soils Evaluation Report and Reclamation Plan submitted by Granite and implementation of Section 10-5.512 of the SMRO, potential impact associated with settlement and slope stability issues would be mitigated to less than significant.

Mitigation Measure 4.8-3:

None required.

Impact 4.8-4:

The project could disturb or destroy unique geologic features. (Less than Significant)

The setting of the project site does not include any unique geologic features. The project is located on the gently sloping surface of a very large alluvial fan. There are no bedrock outcrops at the project site. The geologic setting is typical of the alluvial valley of the lower Cache Creek Basin. Therefore, impacts to unique geologic features would be less than significant.

Mitigation Measure 4.8-4:

None required.

Impact 4.8-5:

The project could substantially conflict with applicable plans, policies and regulations where such conflict would result in an adverse physical change in the environment. (Less than Significant)

This project has been analyzed for consistency with applicable plans, policies, and regulations using the following framework:

- Consistency with SMARA – Addressed in Section 4.11, Land Use (particularly Tables 4.11-3 through 4.11-7).
- Consistency with other applicable state plans, policies and regulations – Addressed in each section of Chapter 4.0 of this EIR, as applicable to the subject matter.
- Consistency with the County General Plan – Addressed in each section of Chapter 4.0 of this EIR, as applicable to the subject matter.
- Consistency with the CCAP – Addressed in each section of Chapter 4.0 of this EIR, as applicable to the subject matter. The analysis examines consistency with both the OCMP and the CCRMP (including the CCIP) as applicable.
- Consistency with the County Zoning Ordinance (Title 8 of the County Code) – Addressed in Section 4.11, Land Use (particularly Tables 4.11-3 through 4.11-7).
- Consistency with the County ICMMO (Title 10, Chapter 3 of the County Code) – Addressed in Section 4.11, Land Use (particularly Tables 4.11-3 through 4.11-7).
- Consistency with the County OCSMO (Title 10, Chapter 4 of the County Code) – Addressed in Section 4.11, Land Use (particularly Tables 4.11-3 through 4.11-7).
- Consistency with the County SMRO (Title 10, Chapter 5 of the County Code) – Addressed in Section 4.11, Land Use (particularly Tables 4.11-3 through 4.11-7).

Assuming approval of the requested approvals, including identified mitigation measures and standard conditions of approval, the project is considered consistent with these plans, policies, and regulations pursuant to CEQA. Specifically regarding Geology and Soils, implementation of Mitigation Measure 4.8-1 would ensure that risks to facilities, workers, and on-site visitors are minimized by identifying and avoiding seismic risks and other unsafe conditions.

Mitigation Measure 4.8-5:

None required.

4.9 HAZARDS

INTRODUCTION

This section analyzes the project impacts from hazards and hazardous materials. The setting describes the existing conditions of the project site and existing uses of hazardous materials. Project-specific impacts are identified and appropriate mitigation measures are recommended to reduce significant impacts to less than significant.

SETTING

Regional Environment

Land uses in the region consist primarily of agriculture, gravel mining, and residential/commercial in the urbanized areas of Capay, Esparto, Madison, and Woodland. Regional hazards associated with these land uses include agricultural pesticide and herbicide application and industrial use and storage of hazardous materials (including fuels, lubricants, and solvents) potentially resulting in human exposure. Releases of hazardous materials may result in degradation of ground and surface water quality (water quality impacts are addressed in Section 4.10, Hydrology and Water Quality).

Description of Local Environment

The project site consists of approximately 390 acres of agricultural land within a rural area of Yolo County. The surrounding area includes agricultural land and aggregate mining. The project site is comprised of two parcels, APN: 048-220-015 (103.6 acres) in the southern portion and APN: 048-220-022 (286.4 acres) in the north. The street address for the site is 26410 Fulton and Frank Lane, Esparto, California.

Cache Creek crosses the project site, following from west to east. County Road 87 runs along the eastern boundary of the site and crosses the creek on the Esparto Bridge. The site is bounded to the north by the West Adams Canal and agricultural areas. One aboveground storage tank (AST) was observed near the service road and County Road 87. Areas south of Cache Creek are in agricultural production.

The Granite Capay facility is an existing aggregate operation located west of and adjacent to the project site. The operation consists of active mining areas and an aggregate processing plant. The Granite Capay facility stores and uses hazardous materials to operate and maintain equipment. Mining operations are supported by a mobile fueling truck. A paved service road extends from Road 87 across the project site and terminates at the existing Capay facility. The road provides the main access to the Capay facility.

The project site currently supports agricultural crop production, including orchards and row crop fields. The project site also includes four single-story buildings, including one home and associated outbuildings. The following details regarding the conditions at the site are based on a field reconnaissance conducted in December 2006 (Wallace-Kuhl & Associates, Inc. 2007a).

The residence is a wood-frame building on a concrete slab with an asphalt composite roof, a detached garage, a storage shed, and a workshop. The residence is serviced by a domestic water supply well and a private septic system. The storage shed contained domestic garden tools.

The workshop consists of an enclosed area with an attached open-air storage area, all on a concrete slab. The workshop contained workbenches, tools, and various containers for vehicle fluids. During field reconnaissance, surface staining was observed on the concrete slab. The open-air storage area contained 6 partially full 55-gallon drums, 5 55-gallon drums used for storage of metal parts, 13 5-gallon buckets of oil, 4 tractors, and 1 flatbed trailer. The covered gravel area adjacent to the workshop had 4 55-gallon drums, 1 100-gallon drum, and other waste-oil containers. Spilled waste oil was observed on the gravel.

One portable shipping container was observed at the north end of the workshop. It contained agricultural chemicals, pesticides, and herbicides. No spills or staining were observed in the container. Five portable ASTs and two stationary ASTs were observed. The owner stated that two underground storage tanks (UST) were removed in 1996 (Wallace–Kuhl & Associates, Inc. 2007a) and no evidence of other USTs were observed.

The balance of the site is agricultural land that ranges from fallowed fields to a walnut orchard, an almond orchard, and grape vines. The site has three agricultural water supply wells: one near the south end of the workshop, one in the southwest section of the site, and the third in the northwest section of the site. Farm tools were seen at various locations on the site.

Near the third agricultural water supply well, an additional cargo/shipping container was observed but locked and inaccessible. No spills or stains were observed around the perimeter of the container. Two portable 3,000-gallon fertilizer tanks, one portable fertilizer distribution tank, and two of the previously mentioned portable ASTs were also observed in this area.

Potential existing hazards on the site are limited to the use of fuels, lubricants, and solvents for operation and maintenance of heavy equipment used for agriculture. One AST was observed near the service road and Road 87. Use of pesticides, herbicides, fertilizers, and other materials on the site may also pose a hazard if not properly handled and stored. No hazards associated with agricultural operations use of such materials have been reported at the site.

REGULATORY SETTING

The following paragraphs describe the federal, state, and local agencies and the laws and regulations governing the use, storage, and disposal of hazardous materials including management of contaminated soils and groundwater.

Federal

U.S. Environmental Protection Agency

The U.S. EPA is the federal agency responsible for enforcement and implementation of federal laws and regulations pertaining to hazardous materials. The legislation includes the Resource Conservation and Recovery Act of 1986 (RCRA); the Superfund Amendments and Reauthorization Acts of 1986 (SARA); and the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA). The federal regulations are primarily codified in Title 40 of the CFR.

The U.S. EPA provides oversight and supervision for site investigations and remediation projects and has developed land disposal restrictions and treatment standards for the disposal of certain hazardous wastes.

Department of Toxic Substances Control

The California Department of Toxic Substances Control (DTSC) works in conjunction with the U.S. EPA to enforce and implement specific laws and regulations pertaining to hazardous wastes. The California legislation, for which DTSC has primary enforcement authority includes the Hazardous Waste Control Act and the Hazardous Substance Account Act. Most State hazardous waste regulations are contained in Title 22 of the CCR. The California DTSC generally acts as the lead agency for soil and groundwater clean up projects, and establishes clean up and action levels for subsurface contamination that are equal to, or more restrictive than, federal levels.

Central Valley Regional Water Quality Control Board

The project site is located in the jurisdiction of the Central Valley RWQCB. The RWQCB is authorized by the California Porter-Cologne Water Quality Act of 1969 to implement water quality protection laws. The RWQCB provides oversight for hazardous waste sites where the quality of groundwater or surface waters is threatened, and has the authority to require investigations and remedial actions.

California Air Resources Board and the Yolo-Solano Air Quality Management District (YSAQMD)

The project site is in the 11-county SVAB, which is composed of eight air districts, including the YSAQMD. The CARB and YSAQMD have joint responsibility for developing and enforcing regulations needed to achieve and maintain state and federal ambient air quality standards in the district. CARB is responsible for enforcing the Clean Air Act and California's State Ambient Air Quality Standards. YSAQMD is responsible for regulating air emissions from stationary sources, monitoring air quality, and reviewing air quality issues in environmental documents in this district, which includes Yolo County.

Local

Project consistency with county mining regulations is discussed in Section 4.11, Land Use. Project consistency with General Plan policies, CCAP, and other applicable regulations is discussed below.

Surface Mining and Reclamation Act

Project Consistency with SMARA is discussed in Section 4.11, Land Use.

Yolo County Division of Environmental Health

The primary agencies responsible for local enforcement of state and federal laws controlling hazardous materials management include the Yolo County Environmental Health Department (YCEHD). YCEHD is a Certified Unified Program Agency (CUPA), the local agency responsible for coordination of hazardous waste generator programs, underground fuel tank management, tiered permitting process for waste treatment, and administering the Hazardous Materials Business Plan program (Business Plan).

Businesses that store, handle, or dispose of hazardous materials must submit a Business Plan in accordance with the California Health and Safety Code, Section 25504. The Business Plans must be updated every two years or within 30 days after a substantial change in site operations. The Business Plan must:

- List all the hazardous materials stored at a site,
- Identify emergency response procedures for spills and personnel,
- Identify evacuation plans and procedures, and
- Identify training records for personnel to substantiate annual refresher training.

If hazardous materials are used or stored at a site, all employees are also required to receive hazard communication training. The purpose of the training is to ensure that employees understand the nature of the hazardous materials that they handle and can safely use, store, and dispose of the materials in accordance with Title 8 of the CCR. The hazard communication standard requires that employers must:

- Prepare an inventory of hazardous materials,
- Make Material Safety Data Sheets available to employees,
- Conduct employee training on chemical hazards and safe handling of materials, and
- Ensure that hazardous material containers are properly stored and labeled.

Inspections of businesses that store hazardous materials are performed by YCEHD. The hazard communication requirements are enforced by California Department of Industrial Relations, Division of Occupational Safety and Health (Cal/OSHA). The Applicant filed its most recent Business Plan and Hazardous Materials Inventory in August 2001, and appears to be in compliance with these requirements.

Construction and operation of aboveground fuel storage tanks requires a building permit from the Yolo County Planning and Public Works Department and demonstration to the CUPA that the Applicant has prepared a Spill Prevention Control and Countermeasure Plan (SPCC) (40 CFR112.3 and 112.7) and filed a Storage Statement with the State Water Resources Control Board (Health and Safety Code 25270).

The proposed project would likely qualify as a business storing and using hazardous materials. As such, the project would be required to all of the regulations and laws described above.

2030 Countywide General Plan (2009)

The County's 2030 Countywide General Plan (Yolo County 2009a) contains five policies relevant to the project:

Health and Safety Element

- **HS-1.3.** Require environmental documents prepared in connection with CEQA to address seismic safety issues and to provide adequate mitigation for existing and potential hazards identified.

This EIR addresses potential hazards. Therefore, the project would be consistent with this policy.

- **HS-4.1.** Minimize exposure to the harmful effects of hazardous materials and waste.

This SWPPP, SPP, and Business Emergency Response Plans would minimize exposure of hazardous materials and waste. Therefore, the project would be consistent with this policy.

- **HS-4.3.** Encourage the reduction of solid and hazardous wastes generated in the County.

The Business Plan would reduce generation of wastes to the extent feasible. Therefore, the project would be consistent with this policy.

IMPACTS AND MITIGATION MEASURES

Standards of Significance

The significance criteria for this analysis were developed from the criteria presented in the CEQA Guidelines Appendix G. Seven criteria, not listed below, were previously addressed in the Initial Study, which indicated the project would have a less-than-significant impact from the hazards described in those seven criteria (see Impacts Found Less-than-Significant in Initial Study below). The proposed project would result in a significant impact from hazards if it would:

- Create a significant hazard to the public or environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment; or
- Substantially conflict with applicable plans, policies and regulations where such conflict would result in an adverse physical change in the environment.

Methodology

The analysis focuses on the potential to encounter hazardous substances in soil and demolished buildings during construction and evaluates potential impacts of exposure to contaminated soils and hazardous building materials. Each potential impact is assessed in light of existing regulations, many of which require specific procedures for abatement of exposure, disposal of wastes, and reporting to the regulatory agencies. If a potential impact was addressed by federal, state, and local regulations, no mitigation measures were proposed to address those impacts.

Potential impacts related to seismic hazards are discussed in detail in Section 4.8 (Geology and Soils) of this EIR. The potential for degradation of water quality is discussed and fully evaluated in Section 4.10 (Hydrology and Water Quality).

Impacts Found Less than Significant in Initial Study

The following potential impacts from hazards and hazardous materials were evaluated in the Initial Study and were determined to have no impact or less-than-significant impacts.

Potential for upset or accident conditions involving hazardous materials. The Initial Study determined that the project would not create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment. Fuel and other hazardous materials would be stored onsite. Refueling would be accomplished using a mobile fuel truck or in a designated area with and

impermeable base, using Best Management Practices (BMPs). As required by federal, state, and local regulations, a SPCC Plan and a Business Plan would be prepared and compliance with federal, state, and local hazardous material regulations would reduce the potential for hazardous materials releases to less than significant.

Potential to expose schools to hazardous materials. The Initial Study showed that the project would not emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school; because the closest school, the Esparto High School, is located approximately 1.2 miles south of the project site boundary.

Potential to be located at a listed hazardous materials site. The project site is not included on lists of hazardous materials sites compiled pursuant to Government Code Section 65962.5. Literature review did not identify any hazardous materials sites at or adjacent to areas potentially affected by construction or operation of the proposed project (Wallace-Kuhl & Associates, Inc. 2007a). Therefore, the project would not create a significant hazard to the public or the environment.

Potential to expose residents or workers to public airport safety hazards. The project is not located within an airport land use plan or within 2 miles of a public airport. The closest airport, Watts-Woodland Airport, is located 11.5 miles east of the project site. Therefore, the project would have no impact on the safety of people residing or working in the project area.

Potential to expose residents or workers to private airstrip hazards. The project is not located in the vicinity of a private airstrip. Therefore, the project would have no impact on the safety of people residing or working in the project area.

Potential to interfere with emergency response plans. The Initial Study determined that the project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. Adequate emergency access to the project site would be provided by public roads and the existing paved, two-lane driveway.

Potential expose people or structures to wildfire risks. The project site is located outside the zone mapped by California Department of Forestry and Fire Protection (CAL FIRE) for moderate to extreme wildfire hazard. The area is mapped as “non-fuel,” a designation given to areas, such as agricultural area, that have limited fuel materials for wildfires (CAL FIRE 2005). Due to lack of fuel, the risk of wildfire is low. The increased operation of combustion engines and increased work force during project implementation would increase potential sources of fire ignition. However, surface vegetation would be removed during mining, offsetting the potential threat for wildfires. Therefore, the potential for the project to expose people or structures to a significant risk of loss, injury, or death involving wildland fires is less than significant.

Other public health hazards could occur onsite but are adequately addressed by other regulations. For example, steep slopes can be a hazard to the public, especially where people may have access to such hazards, such as on public lands. However, Section 10-4.430 of the OCSMO requires that slopes be limited to 2:1 and Section 10-5.510 of the SMRO requires fencing other security.

Open water bodies, such as that outlined in the reclamation plan, can provide breeding grounds for mosquitoes, especially in shallow ponds. In addition, backwater areas of Cache Creek periodically have conditions appropriate for mosquitoes. Other natural drainages in the region and agricultural water retention and conveyance structures also contribute to mosquito problems. Mosquito hazards

related to mining and reclamation of mining pits were addressed in OCMP EIR and found to be less than significant.

Worker health and safety is regulated at the federal level by the Federal Department of Industrial Relations. Under this jurisdiction, workers at hazardous waste sites must receive specialized training and medical supervision according to the Hazardous Waste Operations and Emergency Response (HAZWOPER) regulations (29 CFR Part 1210.120). Additional regulations have been developed for construction workers potentially exposed to lead (29 CFR Part 1926.62) and asbestos (29 CFR Part 1926.1101). The U.S. EPA administers federal regulations for the protection of agricultural workers involved in pesticide use (40 CFR).

Worker health and safety in California is regulated by the Cal/OSHA. California standards for workers dealing with hazardous materials are contained in Title 8 of the CCR, and include practices for all industries (General Industry Safety Orders), and specific practices for construction, hazardous waste operations and emergency response. Cal/OSHA conducts on-site evaluations and issues violation notices to enforce necessary improvements to health and safety practices. Worker hazards from chemical exposure are not addressed under CEQA.

Analysis of Potentially Significant Impacts

Impact 4.9-1:

The project could result in exposure of the public or the environment from accidental releases during the routine transport, use, or disposal of petroleum and other hazardous materials during construction, mining, processing, or reclamation. (Less than Significant)

During project construction and operation, agricultural uses of pesticides, herbicides, and other materials associated with agricultural production would be reduced or eliminated. However, the operation of construction and mining equipment and vehicles requires the use of fuels, lubricants, and other hazardous substances similar to agricultural production. The types of hazardous materials typically used in the processing plant and the aggregate extraction area at the adjoining Capay facility are summarized in Table 4.9-1

Table 4.9-1 Hazardous Materials Typically Used at the Capay Site

Processing Plant	Mining and Reclamation Area (including haul roads and conveyors)
▪ diesel	▪ diesel
▪ grease	▪ motor oil
▪ solvent thinner	▪ hydraulic oil
▪ crusher oil	▪ solvents
▪ turbine oil	▪ gasoline
▪ hydraulic oil	▪ grease
▪ gasoline	
▪ compressed oxygen	
▪ acetylene gas	

Operations would require periodic cleaning, painting, and equipment maintenance. These activities would require the use of hazardous materials such as paints, solvents, cements, adhesives, and petroleum products; and workers could be exposed to these hazardous materials during operation. However, the Applicant would implement Cal/OSHA regulations. Improper transport, use, storage, or disposal of hazardous substances could potentially result in the accidental release of substances during construction and operations. The transport, use, storage, and disposal of hazardous substances are governed by federal, state, and local regulations.

Storage and use of hazardous materials is regulated by the California Health and Safety Code. The Yolo County Environmental Health Department requires submittal of a Business Plan for businesses that store, handle, or dispose of such materials in accordance with state regulations. Also in accordance with regulations, hazard communication training is required for employees to ensure safe use, storage, and disposal of materials. The Yolo County Communications and Emergency Response Agency provides emergency services in the event of a hazardous materials spill that could affect public safety or the environment.

All hazardous wastes generated by the construction contractor would be handled in compliance with applicable federal, state, and local laws and regulations. However, project operation would not produce substantial quantities of hazardous wastes; and all wastes would be handled in accordance with applicable federal, state, and local regulations. These laws require licensing, training of personnel, accumulation limits and times, and reporting and record keeping.

During construction the project could result in an accidental release of hazardous materials such as oil, grease, or fuel. The project would implement plans to prevent impacts on adjacent waterways and water quality. As discussed in Section 4.10, Hydrology and Water Quality, impacts related to such a potential release would be less than significant with the implementation of CWA requirements, including the National Pollutant Discharge Elimination System (NPDES) General Construction Permit. The permit requirements include preparation and implementation of a SWPPP. The SWPPP is required to include BMPs for protecting water quality during construction, including site housekeeping practices, hazardous materials storage and handling, spill containment, and worker training in pollution prevention measures.

Adherence to existing laws and regulations controlling the transport and use of hazardous materials would reduce the risk of accidental hazardous materials releases. In addition, the application indicates that, as required by federal, state, and local regulations, a SPCC Plan would be prepared for the project. Compliance with federal, state, and local hazardous material regulations would reduce the potential for hazardous materials release to less than significant.

Finally, the Applicant would implement the OCMP requirements, which include developing and implementing a SWPPP, and SPCC Plan, and a Business Plan as described above. In addition, the Applicant would submit all appropriate permits, plans, and notifications regarding the storage, transport, use, and disposal of hazardous materials to the County. Section 10-4.403 of the OCSMO requires that all plans would be reviewed and approved by the County prior to the commencement of mining. This section of the ordinance also requires the Applicant to provide

notification of any fires, explosions, hazardous spills, or other conditions that may occur during mining or reclamation. Section 10-4.415 regulates refueling near open water.

An example would include structures built prior to 1960, including buried asbestos-concrete (transite) irrigation piping. If this piping is found during construction or operation, the transite pipe would require proper disposal. The SPCC Plan and the Business Plan must describe the steps required for removal, including consultation with YSAQMD.

Implementation of these plans and regulations would reduce potential impacts associated with hazardous materials use to less than significant, and no mitigation would be required.

Mitigation 4.9-1:

None required.

Impact 4.9-2:

Excavation of contaminated soil during mining or reclamation could result in exposure. (Less than Significant)

The Applicant conducted site investigations (Wallace-Kuhl & Associates, Inc. 2007c) for the potential presence of hazardous waste. A site inspection conducted on December 13, 2006, identified four buildings. One of the structures is a workshop on a concrete slab that stores various containers of vehicle fluids. Spilled waste oil was observed on the gravel next to the workshop. Five portable and two stationary ASTs were observed onsite, and two former USTs were removed in 1996. Analytical results for soil samples (Wallace-Kuhl & Associates, Inc. 2007c) showed that no contaminant concentrations exceeded EPA Preliminary Remediation Goals with the exception of arsenic and nitrogen, which are consistent with the area's agricultural history.

Site soils are not on the list of hazardous materials sites compiled pursuant to Government Code Section 65962.5. The buildings would be demolished; and any contaminated soil would be excavated and removed for off-site disposal prior to mining and reclamation of the area, in accordance with applicable laws and regulations. Compliance with laws and regulations governing disposal of contaminated soil would reduce any potential impacts from soil exposure to less than significant.

Mitigation 4.9-2:

None required.

Impact 4.9-3:

Demolition and removal of existing site structures may result in exposure to asbestos, lead, or other hazardous building materials. (Less than Significant)

The project would involve demolition of old structures that could contain hazardous building materials. Some building materials commonly used in older buildings could present a public health risk. These materials include asbestos-containing materials, electrical equipment that contains fluorescent lights containing mercury vapors, and lead-based paints. If these materials were found during building demolition, they would require disposal according to special procedures, as described below.

Asbestos is a common name for a group of naturally occurring fibrous silicate minerals that are made up of thin but strong, durable fibers. Because of its physical properties, asbestos was commonly used until the 1970s as a building material, including use as insulation materials, shingles and siding, roofing felt, floor tiles, and acoustical ceiling material. Asbestos is a known carcinogen. Friable, finely divided and powdered waste containing greater than 1 percent asbestos is classified in the CCR as a hazardous waste that requires disposal at a licensed landfill (22 CCR 66261.24). Wastes containing non-friable asbestos are not considered hazardous and are not subject to regulation under 22 CCR 66001, et seq.

Section 19827.5 of the California Health and Safety Code, adopted January 1991, requires that local agencies not issue demolition or alteration permits until an applicant has demonstrated compliance with notification requirements under applicable federal regulations regarding hazardous air pollutants. The YSAQMD regulates airborne pollutants, including asbestos, through both inspection and law enforcement and must be notified ten days in advance of any proposed demolition. Further, pursuant to 8 CCR 341.6, Cal/OSHA must be notified of asbestos-related work activities.

Most fluorescent light ballasts manufactured before 1978 contain polychlorinated biphenyls (PCB) in their capacitor and potting material. Ballasts manufactured after January 1, 1978, do not contain PCBs and should be labeled as such on the ballast. Approved disposal methods for PCB-containing ballasts depend on the condition of the ballast and the PCB content of the potting material and capacitor oil. If the PCB concentration of the potting material is less than 50 parts per million (ppm) and the ballast contains a small, intact, non-leaking capacitor the ballast may be disposed of at a municipal landfill. In general, all leaking ballasts and ballasts containing potting material with PCB concentrations greater than or equal to 50 ppm must be incinerated or destroyed by alternative methods, disposed of in a hazardous waste landfill or decontaminated using approved methods.

Spent fluorescent lamps and tubes commonly contain mercury vapors and are considered a hazardous waste in California (22 CCR 66261.50). In 2004, new regulations classified all fluorescent lamps and tubes in California as a hazardous waste because they contain mercury. Because they are considered a hazardous waste, all fluorescent lamps and tubes must be recycled or taken to a universal waste handler.

Requirements for disposal and recycling of fluorescent light tubes containing mercury are specified in 22 CCR 66261.50 and requirements for disposal of PCB-containing

equipment are specified in 22 CCR 66261.24 and Part 761 of Title 40 of the CFR. Prior to or during demolition the applicant or their representative must determine whether ballasts containing diethylhexyl phthalate (DEHP) are hazardous or not, and dispose of them properly, such as at a light ballast recycling facility.

Lead-based paint was commonly used prior to 1960 and is likely present in buildings constructed before 1960. Lead is toxic to humans, particularly young children, and can cause a range of human health effects depending on the level of exposure. When adhered to the surface of the material on which it is painted, lead-based paint poses little health risk. Where the paint is delaminated or chipping, the paint can cause a potential threat to the health of young children or other building occupants who may ingest the paint. Lead dust could also present public health risks during demolition of a structure with lead-based paint. Lead-based paint that has separated from a structure may also contaminate nearby soil. Lead-based paint is defined by 17 CCR 35033 as paint containing lead at a concentration of 5,000 mg/kg (0.5 percent) or greater. Separated paint would be considered a hazardous waste if the lead concentration exceeds the total threshold limit of 1,000 mg/kg, if the soluble lead concentration exceeds the soluble threshold limit concentration of 5 mg/L, or the federal toxicity regulatory level of 5 mg/L (22 CCR 66261.24).

Federal regulations addressing lead-based paint are specified in U.S. EPA's Residential Lead-Based Paint Hazard Reduction Act of 1992 – Title X. State requirements for lead-based paint abatement in residential and public use buildings are specified in 17 CCR 35001–36000. However, current federal, state, and local regulations do not address the abatement of lead-based paint in nonresidential or nonpublic buildings.

The disturbance of asbestos-containing materials could result in exposing the public or construction workers to airborne asbestos fibers unless proper asbestos abatement precautions are taken. Similarly, if lead-based paint or other hazardous materials have delaminated or chipped from the surface of the building materials, there would be a potential for airborne particulates to be released unless proper abatement procedures are followed. If the buildings to be demolished contain electrical equipment or lighting with PCBs, leakage could expose workers to unacceptable levels of PCBs if not properly removed. Removal of fluorescent tubes could result in exposure to PCBs or DEHP in the light ballasts or to mercury vapors if the lights are broken. However, as described in the Regulatory Setting section and above, there is an established regulatory framework for asbestos abatement as well as disposal of PCB-containing equipment, DEHP-containing ballasts, and fluorescent light tubes.

The Applicant would address potential worker exposure by identifying hazards prior to demolition through an asbestos and lead survey and abating any hazardous building materials according to the requirements described above. These protections may include air monitoring, appropriate respiratory protection, and other personal protective equipment for workers, methods of compliance (e.g., engineering controls, work practices), housekeeping measures, hygiene facilities, medical surveillance, medical removal protection, employee information and training, signage of work areas containing lead and asbestos, and recordkeeping are all required actions for removal of asbestos- and lead-containing materials, if present. Therefore, impacts

from exposure to hazardous building materials during demolition and removal would be less than significant.

Mitigation 4.9-3:

None required.

Impact 4.9-4:

The project could substantially conflict with applicable plans, policies, and regulations where such conflict would result in an adverse physical change in the environment. (Less than Significant)

This project has been analyzed for consistency with applicable plans, policies, and regulations using the following framework:

- Consistency with SMARA – Addressed in Section 4.11, Land Use (particularly Tables 4.11-3 through 4.11-7).
- Consistency with other applicable state plans, policies and regulations – Addressed in each section of Chapter 4.0 of this EIR, as applicable to the subject matter.
- Consistency with the County General Plan – Addressed in each section of Chapter 4.0 of this EIR, as applicable to the subject matter.
- Consistency with the CCAP – Addressed in each section of Chapter 4.0 of this EIR, as applicable to the subject matter. The analysis examines consistency with both the OCMP and the CCRMP (including the CCIP) as applicable.
- Consistency with the County Zoning Ordinance (Title 8 of the County Code) – Addressed in Section 4.11, Land Use (particularly Tables 4.11-3 through 4.11-7).
- Consistency with the County ICMMO (Title 10, Chapter 3 of the County Code) – Addressed in Section 4.11, Land Use (particularly Tables 4.11-3 through 4.11-7).
- Consistency with the County OCSMO (Title 10, Chapter 4 of the County Code) – Addressed in Section 4.11, Land Use (particularly Tables 4.11-3 through 4.11-7).
- Consistency with the County SMRO (Title 10, Chapter 5 of the County Code) – Addressed in Section 4.11, Land Use (particularly Tables 4.11-3 through 4.11-7).

Assuming approval of the requested approvals, including identified mitigation measures and standard conditions of approval, the project is considered consistent with these plans, policies, and regulations pursuant to CEQA. Specifically regarding Hazards, implementation of the project's SWPPP, SPCC Plan, and Business Plan, along with the SPP would minimize the exposure to hazardous waste and ensure that the project complies with applicable federal, state, and local regulations, including the California Health and Safety Code. In addition, the Applicant would submit all appropriate permits, plans, and notifications regarding the storage, transport, use, and disposal of hazardous materials to the County. The project would also follow the applicable requirements of OCSMO Section 10-4.403, which requires that all plans be reviewed and approved by the County prior to the commencement of mining.

Mitigation 4.9-4:

None required.

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4.10 HYDROLOGY AND WATER QUALITY

INTRODUCTION

This section analyzes the project impacts on hydrology and water quality. The setting describes the existing conditions of the project site and vicinity. Project-specific impacts are identified and appropriate mitigation measures are recommended to reduce significant impacts to less than significant.

ENVIRONMENTAL SETTING

Climate and Precipitation

The project is located in the Northern Sacramento Valley. The climate in this area is characteristic of the broader temperate zone where temperatures are moderated by the influence of the nearby Pacific Ocean. The region experiences hot, dry summers and moderate to cool winters. Summer temperatures range from a high of 95ºF to lows in the mid-50s. Winter temperatures range from highs in the mid-50s to lows of 40ºF.

Average annual precipitation in Yolo County ranges from a high of 36 inches along the Yolo/Napa County line to 16 inches Yolo/Sutter County line (Yolo County Background Report, Jones & Stokes 2005). Precipitation occurs primarily in the winter months, averaging about 2 to 3 inches monthly throughout the winter months. Winds are typically from the southwest, as marine air is forced through the Carquinez Straits into the Sacramento Valley. The location of Yolo County, bordered by the Coast Range to the west, places the County in the rain shadow of the Coast Range. The altitude of Yolo County ranges from a few feet above sea level in the delta area to 200 feet above sea level approaching the Coast Range.

Surface Water

The major surface water feature in the project area is Cache Creek. Cache Creek drains the Coast Ranges to the east and is part of the Cache Creek Watershed, which originates in Lake County. Cache Creek is dammed approximately 5 miles downstream of Clear Lake, by the Cache Creek Dam. Other features upstream of the project area are the Capay Diversion Dam, the Indian Valley Dam, and the West Adams Canal.

Configuration of Water Conveyances along Cache Creek

Cache Creek originates at the outfall of Clear Lake in Lake County and flows east through the Coast Ranges into the Sacramento Valley. Cache Creek drains the Cache Creek Watershed. The Cache Creek Watershed is divided into the upper and lower portions, which are 1,044 square miles and 1,139 square miles respectively. Outflow from Clear Lake to Cache Creek ranges from 4,000 to 5,000 cfs. Upper Cache Creek is also fed by the tributaries of North Fork Cache Creek and Bear Creek. Diversions and damming of Cache Creek have restricted the outflow of water to the extent that Cache Creek only acts as a tributary to the Sacramento River during very wet years.

Along the Upper Cache Creek are the Indian Valley Reservoir and Dam and the Cache Creek Dam. Lower Cache Creek is dammed by the Capay Diversion Dam. The Cache Creek Dam is on the South Fork of Cache Creek, 5 miles downstream of the outfall of Clear Lake. The dam accommodates a 3 Megawatt (MW) hydroelectric plant, and was built to regulate flow downstream, as well as increase storage capacity of Clear Lake. The Capay Diversion Dam is 49 miles downstream of the Cache Creek Dam, which diverts water to the West Adams Canal for agricultural use. The Capay Diversion Dam is a concrete structure 474 feet long by 15 feet high, built in 1914. The dam is currently under investigation for improvements after a piece of the dam broke free during the winter of 2003 due to age and erosion downstream of the dam. The Indian Valley Dam was constructed in 1975. The resulting reservoir has a capacity of over 300,000-acre feet and includes a 3.3 MW hydroelectric plant. Surface water storage facilities are illustrated on Figure 4.10-1.

Hydrologic Character of Lower Cache Creek

The project area is located in the Lower Cache Creek Basin, which extends from the Capay Diversion Dam downstream past the Cache Creek Settling Basin. The Lower Cache Creek drains an area of 1,140 square miles. Because Cache Creek drains a part of the Coast Range that is relatively steep over a short horizontal distance, Cache Creek is prone to quick rises and drops in flow levels.

Within the project area, Lower Cache Creek can be characterized as a broad alluvial stream, with a low gradient. Historic Cache Creek would have meandered across a broad alluvial fan, occupying different channels over time. The distribution of gravel and sand deposits records the migration of Cache Creek across the ancient flood plain. The project area is within the Hungry Hollow geomorphic subreach of Lower Cache Creek (Yolo County 1996b). Under natural circumstances, Cache Creek would have very low to no flow in the summer months and high volume, episodic flows in the winter and spring. Due to releases of water from the Indian Valley Dam, current summer flows are continuous in most years. The highest flow recorded at Yolo was in 1995 at 41,800 cfs. Average flows over the recorded period of 1903 – 1993 are 520 cfs. Based on information developed by the USACE in 2001, the 100-year recurrence interval flow for Lower Cache Creek (at Capay) is estimated at 61,500 cfs (Cunningham Engineering 2007).

Cache Creek has been significantly altered by historic processes such as in-stream gravel extraction, upstream dams, highway bridges, and agricultural practices. Reduction of sediment load to Lower Cache Creek has resulted in narrowing of the channel, as well as considerable incision into the bed. Documented elevation change demonstrates an average of 15 feet of difference between 1959 and 1980. The constriction of the channel by lowering and narrowing of the bed has resulted in increased flow velocities, and straightening of the channel, with corresponding increase in erosive capacity of the stream over natural conditions. The estimated 1995 sediment load carried by Cache Creek near the project area of 927,600 tons is greatly reduced from its historic sediment load (Yolo County 1996b). However, since adoption of the 1996 OCMP, extraction of aggregate from within the channel of Cache Creek has been reduced to relatively minor amounts of alluvial sediments removed as part of channel and bank maintenance activities (Yolo County Water Resources Association [WRA] 2007).

According to analysis performed by Cunningham Engineering (2007), incision of Cache Creek into its bed has lowered the 100-year flood water surface elevation through much of the channel as compared to their 1995 study. In both studies, the 100-year flood water elevation was determined to be confined to the banks of the existing channel at the project site.

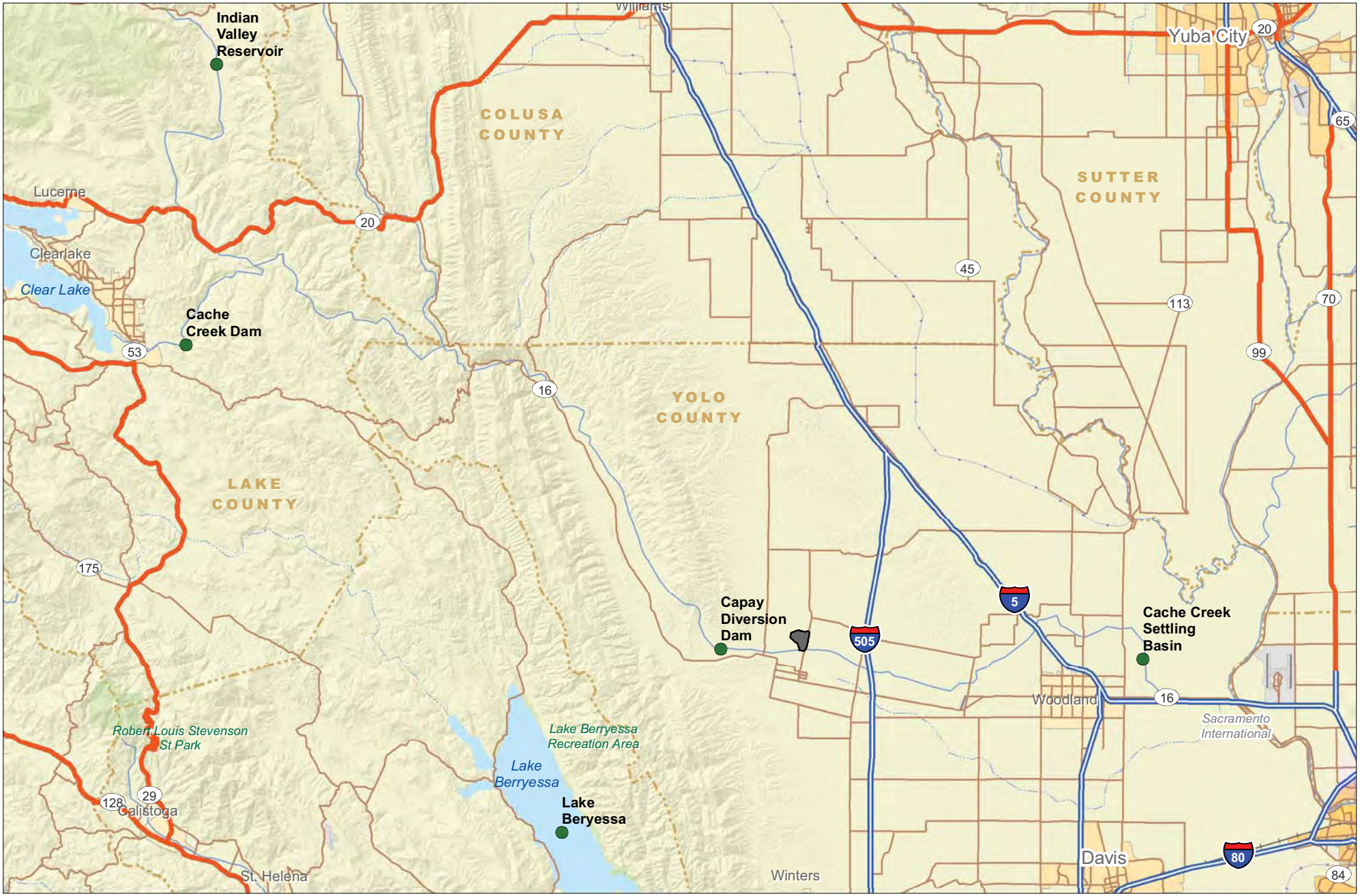

FIGURE 4.10-1

DRAFT EIR
Granite Esparto Mining and Reclamation Project
SURFACE WATER STORAGE FACILITIES ON CACHE CREEK

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Groundwater

Yolo County is entirely within the Sacramento Valley Groundwater Basin. Groundwater subbasins constituting the groundwater supplies of Yolo County are the Capay Valley, Colusa, Yolo, and Solano Subbasins (Yolo County WRA 2007). The Yolo Subbasin underlies most of Yolo County and is estimated to contain nearly 6,500,000 acre-feet of water (DWR 2004). The aquifers in Yolo County are primarily contained within Quaternary Alluvium and the Tehama Formation. Quaternary Alluvium consists mostly of recent stream channel deposits. The total thickness of the aquifers found in the Yolo Subbasin is at least 1,500 feet (Yolo County WRA 2007). The project area is within the Hungry Hollow subarea (part of the Cache Creek Basin) of the West Yolo Subbasin as delineated in the Yolo County Flood Control and Water Control District Groundwater Management Plan (YCFCWCD 2006) (Figure 4.10-2). Average municipal and irrigation well yields in the Yolo Basin are 1,500 gallons per minute (gpm). The Cache Creek Basin was estimated to have a total calculated storage of 1,528,700-acre-feet of water (DWR 2004). Aquifers underlying the project site consist of unconsolidated Quaternary stream deposits hydraulically linked to Cache Creek and the deeper, confined aquifer of the Tehama Formation (Yolo County1996b).

Prior to construction of Capay and Indian Valley reservoirs, Yolo County groundwater was in a state of overdraft. Since the construction of surface water-storage facilities, groundwater levels have recovered to pre-overdraft conditions. Groundwater elevations are stable throughout the area (YCFCWCD 2004). Local drawdown from groundwater pumping is evident in the vicinity of Davis, Woodland, and Dunnigan/Zamora.

Tehama Aquifer

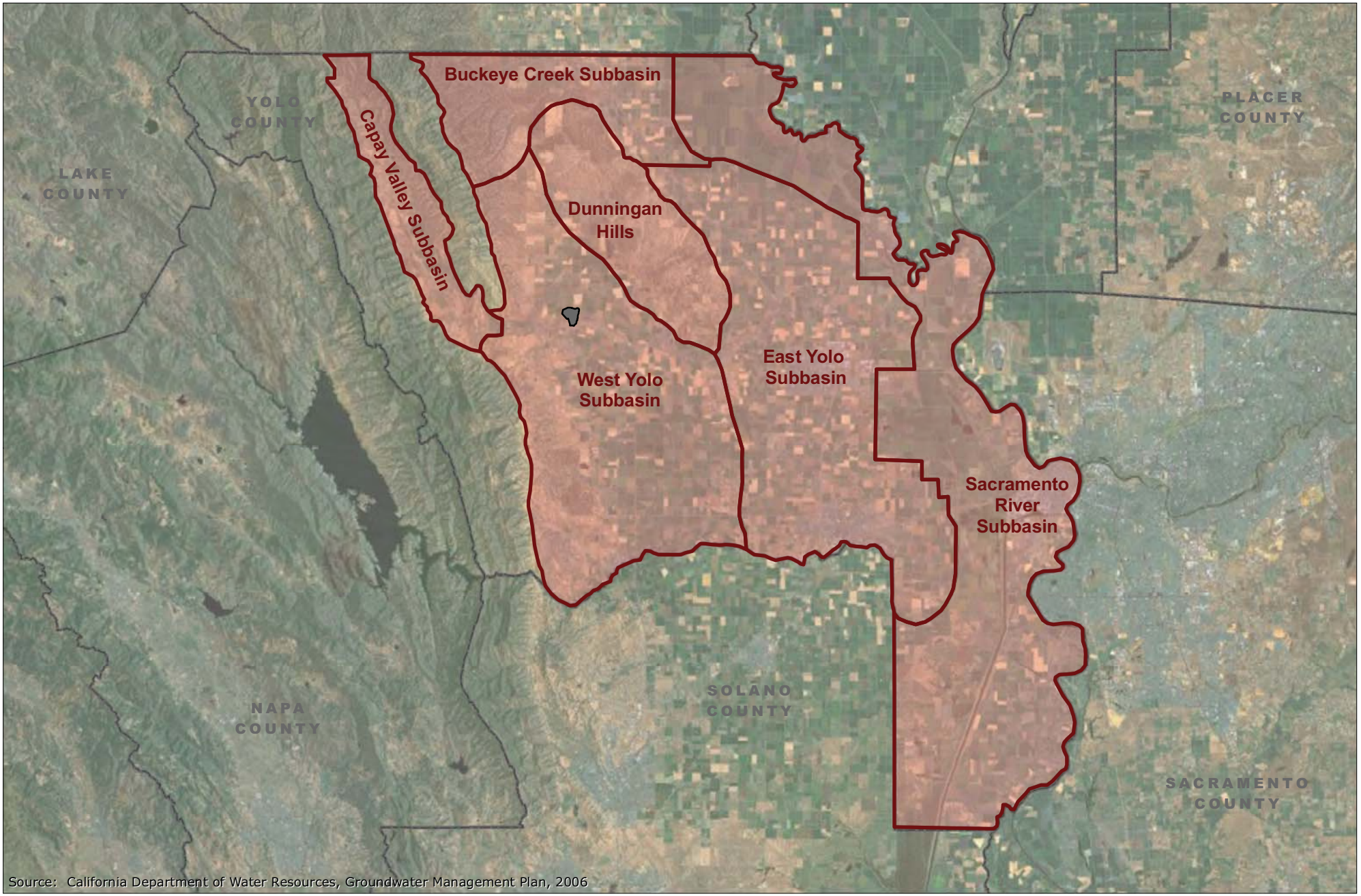
The Tehama Formation is one of the predominant freshwater aquifer systems in the North Sacramento Valley. The Pliocene Tehama Formation consists of moderately compacted silt, clay, and silty fine sand enclosing lenses of sand and gravel, silt and gravel, and cemented conglomerate (DWR 2004). Within the Capay Valley Subbasin, the Tehama Formation overlies Cretaceous marine rocks of the Coast Range. The marine rocks generally contain saline connate water and are not considered usable water bearing formations (DWR 2004).

Quaternary Stream Deposits

Quaternary stream deposits in the project area have been mapped by the California Division of Mines and Geology as Natural Levee and Channel Deposits and Modesto/Riverbank Formation. The Modesto/Riverbank Formation consists of Pleistocene semi-consolidated alluvial deposits of sand, silt, clay, and gravel. The Natural Levee and Channel Deposits consist of Cenozoic to Holocene unconsolidated clay, silt, sand, and gravel deposited by the existing river system. The alluvial deposits make up a relatively shallow aquifer overlying the Tehama Formation.

Current Groundwater Patterns

Groundwater studies along Lower Cache Creek have been conducted for permitting of the Granite Capay facility, as part of the OCMP, and most recently as part of the application for the project. Groundwater in the area was consistently found to flow from west to east and generally follows in the direction of flow of Cache Creek. Cache Creek generally recharges the groundwater table (becomes a losing reach to a low groundwater table) during the dry season and is recharged by groundwater during the wet winter season (gaining reach from high groundwater table).



MAP LOCATION

CALIFORNIA

LEGEND

- County Boundary
- Project Site
- Subbasin Boundary

N

0 5 10

MILES

FIGURE 4.10-2

DRAFT EIR

Granite Esparto Mining and Reclamation Project

YOLO COUNTY GROUNDWATER SUBBASINS

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The Applicant conducted a hydrogeologic study of the mining area (Wallace-Kuhl & Associates, Inc. 2007d). The study consisted of placement of four monitoring wells throughout the study area and subsequent groundwater monitoring and sampling. Groundwater elevations ranged across the project area from 136 feet above mean sea level to 153 feet above mean sea level. Groundwater gradient was to the northeast at 0.0044 feet/foot. Soils encountered during construction of the wells consisted of clayey to silty gravels between an upper layer of 5 to 7 feet of brown clay and silt, and a layer encountered between 49 to 70 feet below ground surface (approximate elevation of 135 feet above mean sea level to 114 feet above mean sea level) of hard clay. Based upon this study, low and high groundwater levels were estimated between 153 to 135 feet above mean sea level with a north-northeast gradient for estimated low and 160 to 140 feet above mean sea level with an east gradient estimated high.

The prior hydrogeologic investigation for Granite Capay facility revealed groundwater conditions similar to those found at the proposed project site by Wallace-Kuhl & Associates, Inc. (2007d). The Granite Capay Facility EIR hydrologic study was based on results of monitoring five monitoring wells installed by Granite Construction and historical groundwater levels as recorded from a state-monitored well between years 1977 (prior to construction of Indian Valley Reservoir) and 1994. Based on the on-site monitoring well data, groundwater levels during that period fluctuated between 20 to 50 feet below ground surface depending on location and season.

Water Quality

Water quality sampling was conducted by Wallace-Kuhl & Associates, Inc. (2007d) as part of the project application. Groundwater samples were tested for the following:

- TPH by EPA Method 8015M
- Benzene, toluene, ethybenzene, and total xylenes by EPA Method 8021A
- Organophosphorous pesticides by EPA Method 8141A
- Chlorinated Herbicides by EPA Method 8151A
- CAM 17 metals by EPA 200 series
- Nitrates by EPA Method 300.0
- General minerals
- Total and fecal coliform by Method SM9221

Samples were acquired from monitoring wells MW4 through MW9, as well as in West Adams Canal. Results of sampling indicate that analyte concentrations in groundwater in the project vicinity are similar to background concentrations. No hydrocarbons, pesticides, or herbicides were detected in the groundwater samples.

The only exception was the results for total and fecal coliform. Coliform bacteria are organisms used in water microbiological analysis as indicators of pathogens. Coliform bacteria are found in soil, decaying vegetation, animal feces, and raw surface water. They are not normally present in deep groundwater and treated surface water. These indicator organisms may be accompanied by pathogens (i.e., disease-causing organisms). Fecal coliform and E. coli are bacteria whose presence indicates that the water may be contaminated with human or animal wastes.

Coliform readings were elevated in groundwater samples collected from wells MW5, 7, 8, 9, and the West Adams Canal. The highest total and fecal coliform counts were found at MW8 (>1,600 MPN/100 mL). Total and fecal coliform were elevated in the West Adams Canal at 540 and 110 MPN/100 mL, respectively. The only location where E. coli was reported was in the West Adams Canal (14 MPN/100 mL).

Surface waters, such as streams and lakes, and shallow groundwater will frequently contain some degree of bacteria. Sources may include exposure to wild or domestic animals, livestock, humans, or aquatic life. Sources of bacteria in groundwater may also include flood waters, sewage disposal (septic tanks), or leaky sewer pipes.

Because of the numerous potential sources of coliform and actual pathogens, including Cache Creek and all the sources in the watershed upstream of the site (e.g., waste disposal, livestock), the coliform bacteria detected in site samples is of uncertain origin and unlikely related to the project site.

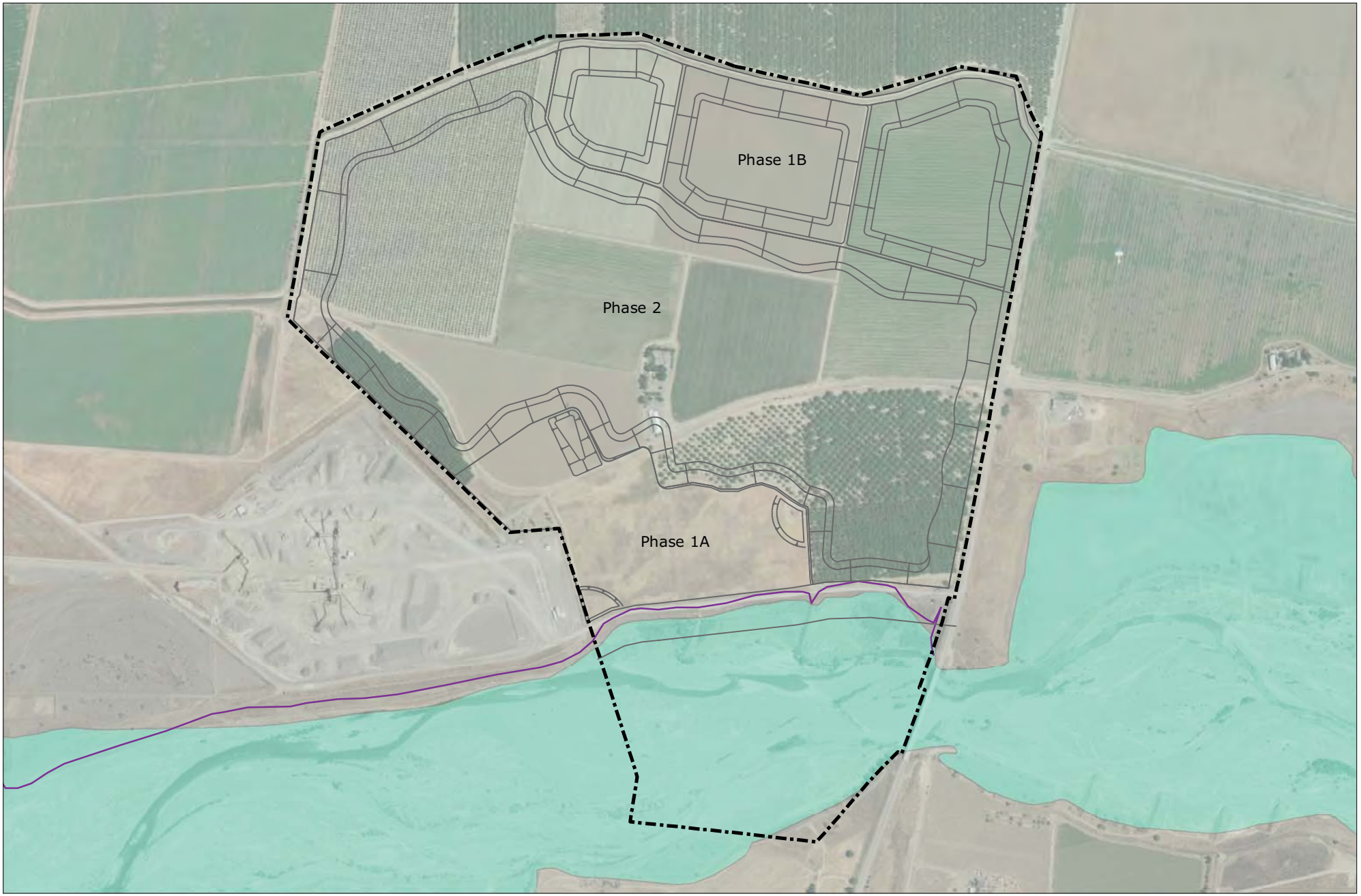
Flood Hazard Zones

Analysis of flood hazard zone maps developed by the FEMA (2002) for the region indicate there are four designations of flood hazard zone throughout the project area (Figure 4.10-3). These are Zone “X”, Zone “A”, Zone “AO”, and Zone “AE”. These zone designations are defined in the Table 4.10-1.

Table 4.10.1 Flood Hazard Zones

Zone	Description
Zone “X” (Moderate to Low Risk)	Areas outside the 1-percent annual chance floodplain, areas of 1 percent annual chance sheet flow flooding where average depths are less than 1 foot, areas of 1 percent annual chance stream flooding where the contributing drainage area is less than 1 square mile, or areas protected from the 1-percent annual chance flood by levees. No Base Flood Elevations or depths are shown within this zone. Insurance purchase is not required in these zones.
Zone “A” (High Risk)	Areas with a 1-percent annual chance of flooding and a 26 percent chance of flooding over the life of a 30-year mortgage. Because detailed analyses are not performed for such areas; no depths or base flood elevations are shown within these zones.
Zone “AO” (High Risk)	River or stream flood hazard areas and areas with a 1 percent or greater chance of shallow flooding each year, usually in the form of sheet flow, with an average depth ranging from 1 to 3 feet. These areas have a 26 percent chance of flooding over the life of a 30-year mortgage. Average flood depths derived from detailed analyses are shown within these zones.
Zone “AE” (High Risk)	Areas with a 1-percent annual chance of flooding and a 26 percent chance of flooding over the life of a 30-year mortgage. In most instances, base flood elevations derived from detailed analyses are shown at selected intervals within these zones.

Source: FEMA 2002



MAP LOCATION

CALIFORNIA

LEGEND

- Project Site
- 100 Year Flood Line (Cunningham, 2007)
- FEMA 100 Year Flood Zone (2002)

N

0 500 1,000 2,000

FEET

FIGURE 4.10-3

DRAFT EIR

Granite Esparto Mining and Reclamation Project

FEMA FLOOD MAP

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The proposed project area is partially within the 100-year flood plain as designated by FEMA (Figure 4.10-3). The mapped 100-year flood zone (Zone "AE") is restricted to the area of the active floodplain of Cache Creek and does not include the proposed mining areas north of the creek. FEMA generates flood insurance maps on the basis of best estimates based upon groundwater levels and peak flow events. The FEMA mapping differs slightly from the site-specific hydraulic study by Cunningham Engineering in the Esparto Reclamation Plan submittal (Cunningham Engineering Corporation 2007), as well as the Cunningham Engineering Cache Creek Updated Hydraulic Study from 2001. The site-specific analysis was performed using more recent and more detailed channel topography and presents a more accurate estimate of the flood characteristics. Similar to the FEMA mapping, the site-specific analysis indicates that 100-year flood flow would largely be confined to the existing banks in the study area between the Capay Bridge (County Road 85) and the Esparto Bridge (County Road 87). Therefore, the mining and processing areas would not be subject to flooding during the 100-year event. FEMA has developed new flood insurance maps for Yolo County, which have been released to the public, but are not expected to be certified until June 2010. Preliminary maps indicate that the flood hazard zones around Cache Creek will not change from the current designations (Caldero, pers. comm. 2009).

REGULATORY SETTING

The project includes components under the jurisdiction of federal, state, and local agencies. Applicable regulations are summarized below.

Federal

Federal Clean Water Act (33 U.S.C. Section 1251 et seq.)

The U.S. Environmental Protection Agency (USEPA) is the federal agency responsible for water quality management and administers the federal Water Pollution Control Act Amendments of 1972 and 1987, collectively known as the CWA. The CWA establishes the principal federal statutes for water quality protection. It was established with the intent "to restore and maintain the chemical, physical, and biological integrity of the nation's water, to achieve a level of water quality which provides for recreation in and on the water, and for the propagation of fish and wildlife". Several key sections of CWA guide the regulation of water pollution in the United States:

- **Section 208 Water Quality Control Plans.** This section requires the preparation of local water quality control plans by regulatory agencies throughout the nation. Each water quality control plan covers a defined drainage area. The primary goal of each water quality control plan is to attain water quality standards established by the CWA and the state governments within the defined area of coverage. Minimum content requirements, preparation procedures, time constraints, and federal grant funding criteria pertaining to the water quality control plans are established in Section 208 of the CWA. Preparation of the water quality control plans has been delegated to the individual states by the USEPA.
- **Section 401 Water Quality Certifications.** This section of CWA requires that, prior to the issuance of a federal license or permit for an activity or activities that may result in a discharge of pollutants into navigable waters (see Section 404 discussed below), the permit Applicant must first obtain a certification from the state in which the discharge would originate. A state certification indicates that the proposed activity or activities would not result in a violation of applicable water quality standards established by federal or state law, or that there are no water quality standards that apply to the proposed activity.

- **Section 402 NPDES.** The National Pollutant Discharge Elimination System (NPDES) requires permits for pollution discharges into water bodies such that the permitted discharge does not cause a violation of federal and state water quality standards. NPDES permits define quantitative and/or qualitative pollution limitations for the permitted source, and control measures that must be implemented to achieve the pollution limitations. Pollution control measures are often referred to as BMPs. Applicable to this project, State Water Board Water Quality Control Order No. 97-03-DWQ lists waste discharge requirements for industries, of which mining is included.
- **Section 1602 Streambed Alteration Agreement.** Section 1602, administered by the Department of Fish and Game (DFG), is applicable to any project proposing an alteration or modification of the bed, bank or channel of a stream, lake, or river. There are three agreement types: a Standard Agreement for activities expected to take place within a five year timeframe; a Standard Long-Term Agreement for activities expected to continue past a five year timeframe; and a Master Agreement applicable to a large, multi-phased for project with duration exceeding five years, and for which detailed plans have not been prepared at the time of application for the permit.
- **Section 404 Discharge of Dredge and Fill Material.** Section 404 assigns the USACE, with permitting authority for proposed discharges of dredged and fill material into waters of the U.S., defined as "…waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide; territorial seas and tributaries to such waters". Section 404 is applicable to projects in which fill material would be placed within or below the ordinary high water mark of a stream. Any project requiring a 404 permit also requires a Section 401 water quality certification (discussed above).

The USACE typically considers all natural drainages with defined beds and banks to be waters of the U.S. Section 404 establishes procedures by which the permitting agency is to review, condition, approve, and deny permit requests. Per the regulations, permitting agencies are responsible to conduct public noticing and provide the opportunity for public hearings during the review of each permit request. This includes informing USFWS and/or the NMFS of each permit request. Consultation with USFWS and/or NMFS is required for proposed discharges that could affect species protected by the Federal Endangered Species Act (FESA). Measures that are required by USFWS and/or NMFS to minimize impacts to federally protected species must be included as conditions of the permit.

The term of the most recent USACE Section 404 Regional Permit expired in May 2009 and the County is seeking renewal of the permit. If the general permit is not renewed, the implementation of the proposed SSP may occur under other existing nationwide permits (e.g. streambank stabilization; habitat restoration), or potentially for the project could require an individual project permit.

National Flood Insurance Program

FEMA administers the National Flood Insurance Program (NFIP). FEMA has completed Flood Insurance Rate Maps (FIRM) that identify Special Flood Hazard Areas in the project area. As previously described, the current FIRM maps show that the project area is partly within the FEMA-designated 100-year flood plain FEMA (Figure 4.10-3). The mapped 100-year flood zone (Zone "AE") is restricted to the area of the active floodplain of Cache Creek and does not include the proposed mining areas north of the creek. The NFIP has developed new FIRM maps for Yolo County, which have been released to the public, but are not expected to be certified until June

2010. In the project area, the preliminary maps indicate that the flood hazard zones will not change substantially from the existing zones (Caldero, pers. comm. 2009). To comply with the NFIP, communities must adopt a floodplain management ordinance addressing construction and habitation in flood zones. In California, the Department of Water Resources (DWR) provides and encourages communities to adopt the California Model Floodplain Management Ordinance. In compliance with NFIP, Yolo County adopted a Floodplain Management Ordinance in 1996 (Caldero, pers. comm. 2009).

Executive Order 11988 – Floodplain Management

Executive Order 11988 requires federal agencies to recognize the values of floodplains and to consider the public benefits from restoring and preserving floodplains. Under this order the USACE is required to take action and provide leadership to:

- Avoid development in the base floodplain;
- Reduce the risk and hazard associated with floods;
- Minimize the impact of floods on human health, welfare, and safety; and
- Restore and preserve the beneficial and natural values of the base floodplain.

State

Surface Mining and Reclamation Act

Project Consistency with SMARA is discussed in Section 4.11, Land Use.

Porter-Cologne Act

The Porter-Cologne Act (California Water Code Section 13000) is the principal law governing water quality regulation in California. It establishes a comprehensive program to protect water quality and the beneficial uses of water. The Porter-Cologne Act applies to surface waters, wetlands and groundwater, and to both point and non-point sources of pollution. Pursuant to the Porter-Cologne Act, it is the policy of the State of California that:

- The quality of all the waters of the State shall be protected,
- All activities and factors affecting the quality of water shall be regulated to attain the highest water quality within reason, and
- The State must be prepared to exercise its full power and jurisdiction to protect the quality of water in the State from degradation.

Pursuant to the Porter-Cologne Act, the responsibility for protection of water quality in California rests with the State Water Resources Control Board (SWRCB). The SWRCB administers federal and state water quality regulations for California's ocean waters and also oversees and funds the State's nine RWQCBs. The RWQCBs prepare water quality control plans, establish water quality objectives, and carry out federal and state water quality regulations and permitting duties for inland water bodies, enclosed bays, and estuaries within their respective regions. The Porter-Cologne Act gives the SWRCB and RWQCBs broad powers to protect water quality by regulating waste discharge to water and land and by requiring clean up of hazardous wastes.

In 2005, the Central Valley Regional Water Quality Control Board (CVRWQCB) passed Resolution No. R5-2005-0146, amending the Water Quality Control Plan for the control of mercury in Cache Creek and other water bodies in the Cache Creek watershed. Cache Creek and its watershed was identified under the federal CWA Section 303(d) as impaired due to elevated concentrations of mercury in water and methylmercury in fish tissue or the existence of a fish consumption advisory. Section 303(d) requires development of a total maximum daily load (TMDL) to bring impaired water bodies into compliance with water quality standards.

The proposed amendment requires the owners of inactive mines to develop and implement plans to reduce mercury discharges from the mines; and it requires federal, state, and local agencies to develop and implement plans to reduce mercury and methylmercury loads from areas with mercury-contaminated sediments or methylmercury sources. It also requires the RWQCB, where feasible, to implement projects to reduce total mercury inputs from existing mercury-containing sediment deposits in creek channels and creek banks downstream from historic mine discharges; reduce erosion of soils with enriched total mercury concentrations; limit activities in the watershed that will increase methylmercury discharges to the creeks; and, where feasible, reduce discharges of methylmercury from existing sources.

Central Valley Flood Protection Board (Title 23 of the California Code of Regulations, including Sections 2, 6, 112, and 131.

The project may be within the jurisdiction of the Central Valley Flood Protection Board, formerly the Reclamation Board. The Board requires applications to be filed for, among other things, all proposed encroachments within the floodways under its jurisdiction and any levees adjacent thereto, as well as on streams that may affect those floodways. Board staff have advised the County that the project area is within a designated floodway and, therefore, under its jurisdiction. Accordingly, pending the outcome of further review of the jurisdictional issue, the project may be required to obtain an encroachment permit (DWR Form 3615) from the Board for the proposed streambank stabilization work.

Assembly Bill 303 (Water Code Section 10795 et seq.)

In 2000, the California Legislature passed the Local Groundwater Management Assistance Act (Assembly Bill [AB] 303) to provide funding for local public agencies to conduct groundwater studies, monitor groundwater, and carry out management activities. The Yolo County Flood Control and Water Conservation District obtained grant funding to manage an Aquifer Recharge and Recovery Program. The Cache Creek alluvial plain is part of the program. Activities include maintenance and enhancement of groundwater quality and generation of a groundwater resources database. Pursuant to this legislation, the Yolo Woodland Aquifer model is being developed as part of the 1997 Water Master Plan. The model is intended to predict effects of recharge, drawdown and subsidence, transport of dissolved substances, and effects of new wells on the aquifers.

Storm Water Permit

Construction activities that involve 0.5 or more acres of land disturbance must comply with the General Permit for Discharges of Storm Water Associated with Construction Activity (Construction General Permit, 99-08-DWQ), which regulates storm water originating from construction activities. Construction activity subject to this permit includes clearing, grading and disturbances to the ground such as stockpiling, or excavation but does not include regular maintenance activities performed to restore the original line, grade, or capacity of the facility.

The Construction General Permit requires the development and implementation of a SWPPP. Section A of the Construction General Permit describes the elements that must be contained in a SWPPP. These elements include a site map(s) that shows the construction site perimeter, existing and proposed buildings, lots, roadways, storm water collection and discharge points, general topography both before and after construction, and drainage patterns across the project. The SWPPP must list the BMPs that the discharger would use to protect storm water runoff and the placement of those BMPs. Additionally, the SWPPP must contain a visual monitoring program; a chemical monitoring program for "non-visible" pollutants, to be implemented if there is a failure of BMPs; and a sediment monitoring plan if the site discharges directly to a water body listed on the 303(d) list for sediment.

The SWRCB is in the process of reissuing the Construction General Permit and released a preliminary draft of the new permit on March 2, 2007 (SWRCB 2007). A revision to the draft was released in March 2008. When adopted, this permit would replace the 1999 Construction General Permit and, as proposed, would require the permittee to implement additional minimum BMPs. The revised draft permit also requires specific analytical procedures to determine whether the BMPs are preventing further impairment due to sediment and preventing non-visible pollutants from violating water quality objectives. The new requirements would require monitoring (i.e., sampling and testing) of the quality of storm water discharges at most sites. In addition, all sites would be required to meet new development and redevelopment performance standards to minimize or mitigate hydrologic impacts.

State Fish and Game Code, Sections 1601 to 1603

Under Sections 1601 to 1603 of the CFGC, the CDFG must be notified prior to any project that would divert, obstruct, or change the natural flow, bed, channel, or bank of any river, stream, or lake. The term "stream" can include intermittent and ephemeral streams, rivers, creeks, dry washes, sloughs, blueline streams, and watercourses with subsurface flows.

Assembly Bill 5 and Senate Bill 5 (2007)

AB 5 establishes the Central Valley Flood Protection Board and its duties. It sets requirements and deadlines for DWR and the board to prepare reports on the flood control system, including levee flood zone protection maps to be prepared by DWR.

SB 5 enacts the Central Valley Flood Protection Act of 2008. It requires the DWR and the Central Valley Flood Protection Board (previously known as the State Reclamation Board) to prepare and adopt a Central Valley Flood Protection Plan by 2012. SB 5 establishes 200-year protection as the minimum urban level of flood protection and sets deadlines for cities and counties in the Central Valley to amend their General Plans and zoning ordinances to conform to the Central Valley Flood Protection Plan within 24 months and 36 months, respectively, of its adoption. It restricts approval of development agreements and subdivision maps in flood hazard zones after the enactment of General Plan and zoning ordinance amendments, unless certain findings are made. SB 5 obligates Central Valley counties to develop flood emergency plans within 24 months of adoption of the Central Valley Flood Protection Plan. Its legislative intent is also found in AB 5 and AB 156.

California planning law requires city and county General Plans to identify flood-prone areas and limit development within those areas. These two flood bills revised the requirements for the land use, conservation and safety elements of city and county General Plans statewide. However, Central Valley jurisdictions will be subject to additional scrutiny to ensure that their General Plans conform to the Central Valley Flood Control Plan and will have additional restrictions on

development approvals tied to flood hazards. Because DWR is concentrating its mapping work in the Central Valley, cities and counties in that region will also have the most up-to-date flood hazard information to integrate into their General Plans (Rivasplata 2008).

Local

Project consistency with county mining regulations is discussed in Section 4.11, Land Use. Project consistency with General Plan policies, CCAP, and other applicable regulations is discussed below.

2030 Countywide General Plan (2009)

The County's 2030 Countywide General Plan (Yolo County 2009a) contains eight policies relevant to the project:

Circulation Element

- **CI-4.5.** Roads and road-related structures (bridges, culverts, retaining walls, abutments, etc.) located in or near watercourses shall be placed, designed, built, and landscaped so as to minimize the impact to riparian corridors, including reducing erosion during and after construction, accommodating flood flows, and minimizing grading on slopes greater than 20 percent.

As described in Chapter 3 under the SSP, the stabilization would include grading of the existing bank to a uniform slope, providing protection to the toe (i.e., base) of the slope, and revegetation of the bank and toe with a mixture of non-invasive annual grassland species for the first one or two years, followed by a native grassland seed mix. Therefore, the project would be consistent with this policy.

Public Facilities and Services Element

- **PF-2.2.** Construct on-site stormwater detention facilities that are designed so that runoff from the 100-year storm event does not: (1) result in an increase in peak release rate; (2) result in a time decrease associated with the time of concentration; (3) contribute to adjacent flood problems; and/or (4) significantly alter the direction of runoff.

The project proposes to implement a SWPPP that meet these design standards. Therefore, the project would be consistent with this policy.

- **PF-2.4.** Encourage sustainable practices for stormwater management that provide for groundwater recharge and/or improve the quality of runoff through biological filtering and environmental restoration.

As required by OCSMO Section 10-4.413, the project would prepare and implement a SWPPP that specifies BMPs. To the extent practicable, the SWPPP will require sustainable stormwater practices, such as biofilters and other BMPs that promote groundwater recharge and water quality. The site is designed to drain internally to retention basins. There will be no water running offsite. The retention basins are based in gravel and therefore provide for groundwater recharge. Therefore, the project would be consistent with this policy.

Agriculture and Economic Development Element

- **AG-2.1.** Protect areas identified as significantly contributing to groundwater recharge from uses that would reduce their ability to recharge or would threaten the quality of the underlying aquifers.

As analyzed in this section, the project would not adversely affect groundwater recharge or quality. The project would introduce minimal impervious surface and the project's stormwater practices would promote groundwater recharge. Therefore, the project would be consistent with this policy.

Conservation and Open Space Element

- **CO-2.32.** Protect wetland ecosystems by minimizing erosion and pollution from grading, especially during grading and construction projects.

The project includes a streambank stabilization plan and restoration of bank habitat (see Appendix C). The bank stabilization measures would include grading of the existing bank to a uniform slope, protecting the restored bank from erosion, establishing a terrace between the new creek bank and the existing haul road to the north using fill obtained during the mining process and bank revegetation. These measures would protect wetlands, including the banks and bed of Cache Creek by minimizing erosion. They would also protect the mining site during grading and excavation.

The project would also protect on-site wetlands from erosion. The open lake would have 44 acres of adjacent habitat and wetland. The margins of the lake would be planted with tules, cattails, and rushes. The slopes above the shallow habitat would be planted with riparian woodland trees and shrubs. Protection measures would include minimizing slopes, erosion control and planting of oak woodland trees and shrubs.

- **CO-3.1.** Encourage the production and conservation of mineral resources, balanced by the consideration of important social values, including recreation, water, wildlife, agriculture, aesthetics, flood control, and other environmental factors.

This EIR analyzes and mitigates for the environmental impacts including water, wildlife, agriculture, aesthetics, and other environmental factors associated with the project as discussed in Section 4.5, Biological Resources. Therefore, the project would be consistent with this policy.

- **CO-5.14.** Require that proposals to convert land to uses other than agriculture, open space, or habitat demonstrate that groundwater recharge will not be significantly diminished.

As analyzed in this section, the project would not adversely affect groundwater recharge by converting land to uses that would diminish recharge (see Impact 4.10-3). The project would convert the site to open space and habitat, including open water. Therefore, the project would be consistent with this policy.

Off-Channel Mining Plan

The County's OCMP contains the following actions relevant to the project:

Chapter 3: Water Resources

- **Action 3.4-3.** Include a groundwater monitoring program as a condition of approval for any surface mining and reclamation operation that proposes off-channel excavations that extend below the groundwater level. The monitoring program shall require regular groundwater level data, as well as a water quality monitoring program based on a set of developed standards.

Currently, the Applicant has five monitoring wells around the site. As part of the initial hydrologic characterization of the site, the Applicant performed groundwater measurements and groundwater quality testing. The project will be gathering additional groundwater elevation data from each of the wells at this site at least quarterly; updated measurements will be used to further characterize groundwater conditions in the shallow aquifer. Therefore, the project would be consistent with this action. See the discussion of Section 10-4.417, Groundwater Monitoring Program, of the Off-Channel Mining Ordinance in Table 4.11-6, found in Section, 4.11 Land Use.

- **Action 3.2-5.** Require that surface mining operations demonstrate that proposed off-channel excavations extending below the groundwater level will not adversely affect the producing capacity or water quality of local active wells.

Currently, the Applicant has five monitoring wells around the site. As part of the initial hydrologic characterization of the site, the Applicant performed groundwater measurements and groundwater quality testing. The project will be gathering additional groundwater elevation data from each of the wells at this site at least quarterly; updated measurements will be used to further characterize groundwater conditions in the shallow aquifer. Therefore, the project would be consistent with this action. See the discussion of Section 10-4.417, Groundwater Monitoring Program, of the Off-Channel Mining Ordinance in Table 4.11-6, found in Section, 4.11 Land Use.

Chapter 4: Floodway and Channel Stability

- **Action 4.4-4.** Manage activities and development within the floodplain to avoid hazards and adverse impacts on surrounding properties. This shall be accomplished through enforcement of the County Flood Damage Ordinance and ensuring that new development complies with the requirements of the State Reclamation Board.

No structures are proposed to be located within the 100-year flood zones designated by FEMA (2002) or any other public entity within or adjacent to the project site. Therefore, the project would be consistent with this action. See the discussion of Section 10-5.13, Floodplain Development, of the Surface Mining Reclamation Ordinance in Table 4.11-6, found in Section, 4.11 Land Use.

- **Action 4.4-5.** Allow for the design of spillways or other engineered features that provide controlled flooding of off-channel mining pits during events which exceed the 100-year flood.

The project proposes perimeter berms and would implement a SWPPP. Therefore, the project would be consistent with this action. See the discussion of Section 10-4.412, Dewatering Prohibition, of the OCSMO in Table 4.11-6, found in Section, 4.11 Land Use.

Cache Creek Resources Management Plan

The County's OCMP contains the following performance standards relevant to the project:

Chapter 2: Floodway and Channel Stability Element

- **Performance Standard 2.5-1.** All proposed grading and/or construction projects within the channel shall be subject to the Yolo County Flood Damage Prevention Ordinance.
- **Performance Standard 2.5-6.** Require all channel improvement projects to comply with the requirements of the CCIP and implementing regulations.

The Applicant has submitted a SSP and proposes in-channel modifications consistent with the Cache Creek Resource Management Plan (CCRMP) and Cache Creek Improvement Program (CCIP), in support of their request to mine to within 200 feet from the bank of the creek. The Applicant's engineer will be required to confirm that these requirements have been met. Therefore, the project would be consistent with this performance standard.

Chapter 3: Water Resources Element

- **Performance Standard 3.5-1.** All heavy equipment used for channel improvement projects shall be kept in good working order to reduce emissions and preclude the leakage of oils and fuels. Fueling and maintenance activities shall not occur within one hundred (100) feet of the active channel. All procedures for handling, storage, and disposal of hazardous materials shall be described in a Storm Water Pollution Prevention Plan if required for the projects. Any long-term project (e.g., extensive erosion control, gravel removal) shall have a chemical spill prevention and emergency plan filed and approved by the appropriate local agency. The plan must include training of the equipment operator and workers in spill reporting and how to minimize environmental damage.

The Applicant would be required to submit a Business Emergency Response Plan and Spill Prevention Control and Countermeasures Plan. A copy of the operator's approved plans would be submitted to the Yolo County Health Department, prior to the commencement of mining. Therefore, the project would be consistent with this performance standard. See the discussion of Section 10-4.415, Equipment Maintenance from the Off-Channel Mining Ordinance, in Table 4.11-6, found in Section 4.11, Land Use.

- **Performance Standard 3.5-5.** All internal combustion engine driven equipment and vehicles shall be kept tuned according to the manufacturers specifications and properly maintained to minimize the leakage of oils and fuels. No vehicles or equipment shall be left idling for a period of longer than ten (10) minutes.

The Applicant would be required to submit a Business Emergency Response Plan and Spill Prevention Control and Countermeasures Plan. A copy of the operator's approved plans would be submitted to the Yolo County Health Department, prior to the commencement of mining. Therefore, the project would be consistent with this performance standard. See the discussion of Section 10-4.415, Equipment Maintenance from the Off-Channel Mining Ordinance, in Table 4.11-6, found in Section 4.11, Land Use.

Cache Creek Improvement Plan

The Technical Advisory Committee (TAC) was established to provide scientific and technical oversight for the CCRMP and the CCIP. The TAC collects and analyzes data, identifies maintenance needs and priorities, and provides critical review of the design and construction of improvement projects. The TAC also works with a variety of local stakeholders in making recommendations regarding management of the riparian area.

As part of project approval, the TAC will review the SSP for consistency with the CCIP.

IMPACT ASSESSMENT

This section analyzes the project impacts on hydrology and water quality. The setting describes the existing conditions of the project site and vicinity. Project-specific impacts are identified and appropriate mitigation measures are recommended to reduce significant impacts to a less-than-significant level, when possible.

Significance Criteria

The six significance criteria for this analysis were developed from criteria presented in the CEQA Guidelines Appendix G. Three criteria not listed below were previously addressed in the Initial Study, which indicated the project would have a less-than-significant impact in those criteria (see Impacts Found Less-than-Significant in Initial Study below). The proposed project would result in a significant impact on hydrologic resources if it would:

- Violate any water quality standards or waste discharge requirements.
- Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted).
- Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff.
- Otherwise substantially degrade water quality.
- Place within a 100-year flood hazard area structures which would impede or redirect flood flows.
- Substantially conflict with applicable plans, policies, and regulations where such conflict would result in an adverse physical change in the environment.

Methodology

Impacts were evaluated on the basis of information developed through review of existing published reports and mapping. Site-specific information prepared for the Applicant was also reviewed and, when appropriate, incorporated into the analysis of impacts. This analysis is tiered off previous analyses performed for the OCMP EIR in 1996. The Applicant's proposal was evaluated in terms of the CEQA significance to determine whether potential impacts were environmentally significant. Mitigation measures were developed for each significant impact. Mitigation measures contained in the OCMP and OCSMO are referenced where appropriate.

Impacts Found Less than Significant in Initial Study

The following impacts were determined to be less than significant in the Initial Study and were not evaluated in this EIR.

Substantially alter existing drainage patterns resulting in erosion or sedimentation. The project would alter the topography and drainage patterns, creating internally drained depressions, including an open lake. Site runoff would flow into the depressions and ultimately infiltrate to the groundwater. The changes to the existing drainage patterns would not change the course of any natural creek channels. The internal drainage on the site would reduce sediment runoff to Cache Creek.

Substantially alter existing drainage patterns resulting in increased runoff or flooding. The project would result in creation of internal drainage conditions. The runoff volume (and rates) exiting the site would be reduced through retention in depressions and infiltration. The project would, therefore, decrease flows to Cache Creek and flood flows during flooding conditions.

Place housing in flood hazard zones. The project does not propose the construction of any housing. Therefore, no housing would be constructed in 100-year flood zones designated by FEMA (2002) or any other public entity within or adjacent to the proposed site.

Potential to expose people or structures to floods resulting from dam or levee failure. The project site is located, including the proposed mining and reclamation areas, within the Dam Failure Inundation Area established by the Yolo County Office of Emergency Services for the potential failure of the Indian Valley Dam (Jones & Stokes 2005). The EIR for the OCMP (Yolo County 1996b) determined that flooding, as the result of dam failure, within the CCAP is a less-than-significant impact on the basis that such an event is a low-probability event and that the Emergency Action Plan (implemented by the Yolo County Flood Control and Water Conservation District [YCFCWCD]) would provide adequate warning and protection.

Potential inundation by seiche, tsunami, or mudflow. The proposed project site is not located within an area that could be affected by tsunamis or seiches. The distance of the site from the San Francisco Bay (approximately 44 miles) and its elevation (generally above 160 feet National Geodetic Vertical Datum [NGVD]) relative to sea level preclude potential inundation by tsunamis. Seiches could potentially develop in proposed reclaimed lake and/or temporary settling ponds during local and distant earthquakes. It is expected that the magnitude of seiche waves would be minimal and would not likely result in overtopping of the impoundment structures. The potential for adverse effects of mudslides or other types of slope failure are described in Section VI of this Initial Study.

IMPACTS AND MITIGATION MEASURES

Analysis of Potentially Significant Impacts

Impact 4.10-1:

The project could violate water quality standards through discharge of storm water. (Less than Significant)

Storm water runoff from construction, extraction, and reclamation activities could increase risk of erosion and sediment transport and degrade surface water quality in local waterways. The project would include excavation and grading on level topography underlain by unconsolidated Quaternary sediments. Grading operations would remove vegetation and expose soil to an increased risk of erosion and sediment transport. Sediment transported into water bodies could result in the degradation of water quality (e.g., increased turbidity) or sedimentation within streams or water supply channels (e.g., reduction in flow capacity or damage to irrigation facilities such as pumps). Additionally, inadvertent releases of hazardous materials used during construction or operations could result in water quality degradation. Two main sources of potential impacts to storm water runoff from the project are:

- Disturbed native soils and stockpiles and excavated material could erode and cause sediments to enter nearby waterways as storm water runoff; and
- Equipment operation and maintenance could cause releases of petroleum products and sediments to the ground, which would run off during precipitation.

Both of these could present significant impacts to water quality, as violations of water quality standards set forth by the CVRWQCB. However, the OCMP includes requirements to address this potential impact. Section 10-4.413 requires the Applicant to develop and implement a site-specific SWPPP for the project. The SWPPP must address both construction and post-construction management of runoff to control erosion and sedimentation related to project activities. The Erosion and Sediment Control Plan/Storm Water Pollution Prevention Plan must be developed to ensure that storm water discharge meets Basin Plan water quality objectives and that the existing beneficial uses and water quality at the discharge points are maintained and protected. The SWPPP is required to include specific measures to:

- Prevent silt, eroded materials, construction debris, concrete or washings thereof, or hazardous substances from being introduced into any watercourse, stream, or storm drain system;
- Ensure that discharge of runoff or dewatering effluent does not cause erosion of soil or transport of soil;
- Provide “housekeeping” measures to minimize the potential for contamination of soil or groundwater through leaks or inadvertent release of hazardous materials from construction equipment or storage areas;
- Provide controls to prevent discharge of sediment from all stockpiled soil and sediment;

- Prohibit the stockpiling of soil, storage of hazardous materials, and stockpiling of construction materials in 100-year flood zones during the rainy season, typically between October 15 and April 15; and
- Ensure that the discharge of soil or other material does not have an adverse effect on receiving waters or cause or contribute to a violation of water quality standards.

Additionally, the SWPPP must identify:

- Potential pollutant sources, including sources of sediment (such as areas of soil exposed by grading activities and soil/sediment stockpiles); and
- Any non-storm water discharges, including springs or other groundwater discharges.

The SWPPP must also identify site-specific erosion and sedimentation control BMPs that shall be used to protect waterways and topsoil from storm water runoff, as well as the placement and maintenance of those BMPs. The BMPs must include measures such as the following:

- Measures for controlling erosion and sedimentation such as ground covers, revetment systems, or bioengineering stabilization (e.g., live staking or vegetated geogrids);
- Procedures for handling and disposing of hazardous materials (e.g., fuel and lubricants) and construction waste;
- Measures for post-construction erosion and sediment control; and
- Methods to eliminate or reduce non-storm water discharges to receiving waters.

The SWPPP must also demonstrate compliance with all applicable local and regional erosion and sediment control and storm water management standards; identify responsible parties; provide a detailed construction description and timeline; and provide a monitoring and maintenance schedule for the BMPs for sediment control, spill containment, and post-construction measures.

In addition to the requirements for the SWPPP, implementation of Sections 10-4.415, 10-4.433, and 10-4.437 of the OCSMO are required as described in the regulatory setting section.

Compliance with these relevant OCMP sections, and a site-specific SWPPP, would mitigate potential impacts on water quality to less than significant.

Mitigation Measure 4.10-1:

None required.

Impact 4.10-2:

The project could result in an increase in mercury loading to Cache Creek from erosion of sediments. (Less than Significant)

The presence of mercury in sediments within the Cache Creek watershed presents the potential for increased mercury loading in the creek if increased transport of sediment to the creek occurs. In 2005, the CVRWQCB adopted a TMDL for Cache

Creek and amended the Basin Plan (Resolution No. R5-2005-0146). Several requirements of the Basin Plan amendment would specifically apply to the proposed project. The amendment requires that:

- "Reservoirs, ponds, impoundments, and wetlands generally produce more methylmercury than streams or rivers. Building new impoundments and wetlands that discharge to creeks in the Cache Creek watershed can add to the existing loads of methylmercury in Cache Creek and its tributaries. New impoundments, including reservoirs and ponds, and constructed wetlands shall be constructed and operated in a manner that would preclude an increase in methylmercury concentrations in Cache Creek, Bear Creek, Harley Gulch, or Sulphur Creek. This requirement applies to all new projects in the watershed, including gravel mining pits in lower Cache Creek that are being reclaimed as ponds and wetlands for which physical construction is started after the approval of this implementation plan. 'Preclude an increase in methylmercury concentrations' shall be defined as a measurable increase in aqueous concentration of methylmercury downstream of the discharge relative to upstream of the discharge."
- Any entity creating an impoundment or constructed wetland that has the potential through its design to discharge surface water to Cache Creek, Bear Creek, Harley Gulch, or Sulphur Creek (uncontrollable discharge after inundation by winter storm flows is excepted) must submit plans to the Regional Water Board that describe design and management practices that would be implemented to limit the concentration of methylmercury in discharges to the creek.
- The design of the proposed project provides for the capture of runoff from the site during mining and reclamation periods into the active mining areas, settling ponds, and retention basins in the proposed plant site. Following reclamation, runoff from the site would also been captured in lowered reclaimed surfaces in Phase 1A and 1B and the Phase 2 lake. Therefore, discharge of surface water from the reclaimed mining areas to Cache Creek would not occur. These design features would reduce the potential for discharges of sediment to off-site water bodies.

The project also includes the implementation of a SSP for the north bank of Cache Creek adjacent to the proposed mining area. Several requirements of the Basin Plan amendment for the mercury TMDL would specifically apply to the proposed project. For projects which would occur within the 10-year floodplain of Cache Creek, the following requirements are specified:

- "Project proponents are required to: (1) implement management practices to control erosion; and (2) conduct monitoring programs that evaluate compliance with the turbidity objective, and submit monitoring results to the Regional Water Board. The monitoring program must include monitoring during the next wet season in which the project sites are inundated. In general, there must be monitoring for each project. However, in cases where projects are being implemented as part of a detailed resource management plan that includes erosion control practices, monitoring is not required as a condition of this amendment for individual projects. Instead, the project proponent may conduct monitoring at designated sites up and downstream of the entire management plan area."

- The project would need to comply with the requirements of the CCRMP for bank stabilization projects. The project would be implemented to meet the objectives of the CCRMP to support projects that comply with implementation of the Test 3 boundary.[1] The CCRMP has generally served as a "detailed resource management plan that includes erosion control practices" reference in the Basin Plan amendment. Nevertheless, because of the presence of mercury in the Cache Creek watershed, the project could result in a significant impact from increased mercury loading to Cache Creek.

Implementation of Section 10-4.413 of the OCMP (Performance Standard 3.5-3 of the OCMP) as described in the regulatory setting section would satisfy these requirements. Therefore, compliance with the OCMP would ensure that the potential for impacts from mercury on water quality remain at less-than–significant levels.

Mitigation Measure 4.10-2:

None required.

Impact 4.10-3:

Project operational water demands could deplete groundwater supplies. (Less than Significant)

Granite currently proposes the use of 1,100 gpm on a daily basis of groundwater for processing and washing of gravel. This was estimated to be 286 acre-feet per year.

Beneath the entire county there is about 14 million acre-feet of groundwater (20 to 420 feet below ground level). The Cache Creek Basin was estimated to have a total calculated storage of about 1.5 million acre-feet of water (DWR 2004). Two hundred eight-six (286) acre-feet would account on a yearly basis for a total of 0.02 percent of available groundwater. Over a 30-year life span, that percentage would rise to 0.56 percent, excluding any recharge. Due to the small volume of extracted water and relatively rapid groundwater recharge within the subbasin (30 years to pre-overdraft condition as observed after construction of Indian Valley Reservoir), the operational demands posed by the project are expected to be less than significant.

As population increases, greater demand on groundwater is expected. Groundwater demand for the town of Esparto is expected to increase from a current 1,000 acre-feet per year to 1,400 acre-feet per year by 2025 (Yolo County WRA 2007). Figuring for population growth, an increase of 400 acre-feet per year would not present an additional cumulative significant effect when combined with the expected demand from the processing facility. Over the life of the project, the impacts from projected increase in use of groundwater supply would be less than significant.

[1] Approved as part of the Cache Creek Resources Management Plan (CCRMP) and the Cache Creek Improvement Program (CCIP) (Yolo County 2002a), the "Test 3" boundary is a conceptual channel configuration for Cache Creek that requires reshaping to create a series of terraces and low flow channels that will stabilize the channel and allow it to behave more like a natural system. As part of the CCIP (Yolo County 2002a), the "Test 3" boundary was proposed as a conceptual channel configuration for Cache Creek with the general goal of developing a more stable channel. Projects implemented under the CCIP would be designed to support the development of this more stable condition.

Mitigation Measure 4.10-3:

None required.

Impact 4.10-4:

The project could deplete groundwater supplies from backfilling areas with fine sediments. (Less than Significant)

Approximately 12 percent of the volume of extracted material by Granite is estimated to result in fines from wash and processing of gravel. Over the life of the mining operation, wash fines would be directed to five settling ponds. The combined surface area of the settling ponds is 112 acres. Elevations at the bottom of Settling Ponds A and B (Phase 1A) are planned at 113 feet above mean sea level and 157 feet above mean sea level. Elevations at the bottom of the settling ponds in Phase 1B are planned to range between 108 to 102 feet above mean sea level. Estimated high groundwater level projected by Wallace-Kuhl & Associates, Inc. is between 160 to 140 feet above mean sea level in the area where the settling basins are planned. In its current configuration, Settling Pond B Phase 1A, which would be backfilled with wash fines, does not penetrate 50 feet into the aquifer (see requirements of the SMRO in the regulatory setting section). All other settling ponds penetrate an average of 40 feet below highest groundwater level. Change in aquifer properties resulting in diminished recharge of the aquifer could represent a potentially significant impact.

To reduce this potential impact to less than significant, the project would comply with Section 10-5.503 (Backfilled excavations: Groundwater Flow Impacts) of the SMRO as described in the regulatory setting section.

Compliance with the backfilling standard (OCMP Performance Standard 3.5-1) as well as Performance Standards 3.5-16 and 3.5-17 would reduce this potential impact to less than significant.

Mitigation Measure 4.10-4:

None required.

Impact 4.10-5a:

The project would substantially alter the existing drainage pattern of the site or area, resulting in erosion or sedimentation, or result in on or off-site flooding. (Less than Significant)

Significant changes to the topography and vegetation of the reclaimed areas could contribute to erosion and transportation of sediment to surface water bodies including Cache Creek. Included as part of the project Reclamation Plan, drainage is planned to direct runoff from reclaimed areas to interior basins in a manner that would prevent unintended ponding of water or erosion. Only interior pit slopes surrounding the open-water habitat would drain toward the open-water habitat. Runoff would be directed toward interior basins. Further, any runoff during the mining operation would be directed to catchment basins such that all runoff would be contained onsite. With the enactment of the Reclamation Plan, including grading of

the reclaimed surface to channel drainage into interior basins, this impact would be less than significant.

Mitigation Measure 4.10-5a:

None required.

Impact 4.10-5b:

In-stream stabilization structures could contribute to downstream erosion. (Significant but Mitigable)

Hydraulic studies (Cunningham Engineering 2007) showed that the proposed streambank stabilization would allow for a more efficient north bank transition as the creek approaches Esparto Bridge over County Road 87. The proposed design is in compliance with the recommended "channel transition project at Esparto Bridge (Road 87)" presented in the CCIP (Figure 15 of the CCIP). The proposed streambank stabilization design is consistent with the existing streambank stabilization improvements constructed by Granite in 2004 on the north bank of the creek upstream and adjacent to the project site. The design of the 2004 bank protection was reviewed and approved by the Cache Creek TAC prior to construction. Some amount of cascading of rock is anticipated. Periodic maintenance of the rip-rap bank toe is part of the long-term plan for the structure. If erosion of the toe does occur, the project Applicant will repair the eroded area immediately.

The study does not appear to address the requirements of Section 10-4.429(d)(4) of the OCMP regarding the potential for erosion from increased flow velocities against the base of the planned revetment. A pre-project and post-project comparison is required that provides an analysis of changes in velocity or shear along the creek banks. Erosion of the opposing banks or downstream erosion may, or may not, occur as a result of the placement of in-stream structures. Therefore, the effects of changed river velocities along the in-stream stabilization structure and effects of construction could be a significant impact.

Mitigation Measure 4.10-5b:

The Applicant shall provide supplemental hydraulic analysis that examines downstream and cross-stream effects of the proposed in-channel improvements, and identifies supplemental actions/improvements, if necessary, for potential erosion affects on opposing banks or downstream, from increased flow velocities against the base of the planned revetment. The supplemental analysis shall analyze and ensure compliance with OCSMO Section 10-4.429(d)(4). The report must have the original signature of the engineer. The identified improvements (if any) shall be implemented by the Applicant as specified by the project engineer.

Impact 4.10-6:

The project could create or contribute runoff water exceeding the capacity of planned stormwater drainage or contribute additional sources of polluted runoff. (Less than Significant)

The project site is not served by a public stormwater drainage system nor is one planned. All runoff from the site would be directed into the catchment basins and away from wet pits during mining. The only area to be disturbed by the project from which runoff would flow to Cache Creek would be the streambank stabilization area on the north bank of Cache Creek. The proposed stabilization is intended to reduce the potential for erosion of the bank (see Impact 4.10-5b for discussion of erosion from stabilization structures). Following reclamation, the runoff from the reclaimed mining areas would flow into lowered reclaimed surfaces and retention basins. Therefore, the project would have a less than significant impact.

Mitigation Measure 4.10-6:

None required.

Impact 4.10-7a:

The project could substantially degrade water quality by pumping groundwater. (Significant but Mitigable)

The Applicant does not anticipate the need for new wells but one or more may be needed for project operations if existing well yields are insufficient. Pumping of saline groundwater for use in gravel washing could degrade the upper freshwater aquifer or eventually impact stream quality. There are two freshwater aquifers underlying the project site. The upper aquifer is Quaternary Fluvial and Alluvial deposits. The lower aquifer is within the Tehama Formation. The Tehama Formation rests on bedrock of the Coast Range, which consists of marine sedimentary rocks of low permeability. Groundwater within Coast Range formations is expected to be of low quality, and generally brackish to saline. Pumping of water from these units could result in substantial impacts to groundwater and surface water quality should it be used to process wash fines resulting in disposal at the surface.

Mitigation Measure 4.10-7a:

By limiting the depth of any proposed wells the operator shall ensure that only groundwater from one of the freshwater aquifers overlying the Coast Range bedrock is used in wash fines processing.

Implementation of this mitigation measure would reduce this potentially significant impact to less than significant.

Impact 4.10-7b:

Open water areas created during reclamation could become eutrophic, resulting in degraded water quality. (Less than Significant)

Eutrophication of open water bodies may occur in the presence of favorable conditions such as low oxygen, open water, and the presence of nitrates. Potential algal growth could disrupt groundwater flow or impact lake-water or pit-water quality. Past reclamations in the area have demonstrated that reclamation of mining pits to lake habitat can be successful in the project vicinity. Reclamations such as the Correll Preserve and Rodgers pit demonstrate that eutrophication of reclaimed mining pits has not impacted the beneficial value or been demonstrated to occur under actual circumstances; therefore, this impact would be less than significant. Furthermore, Section 10-5.517 of the OCSMO requires annual monitoring of dissolved oxygen, pH, redox potential, temperature and dissolved carbon profiles (as indicators of eutrophication effects) in mining areas reclaimed to lakes, as well as correction of any identified problems.

Mitigation Measure 4.10-7b:

None required.

Impact 4.10-7c:

Creation of open water surfaces could increase the potential for degradation of water quality by discharge of chemicals (diesel, petroleum, etc.). (Less than Significant)

Releases of contaminants to the surface or to open water bodies could potentially adversely impact the quality of soil, groundwater, or surface water. Discharge of petroleum products from machinery could present a contamination issue if the discharge were to enter into groundwater or surface water. The presence of wet pits in the mining area raises the chance that unintended petroleum discharges from mining equipment could directly enter groundwater, potentially resulting in substantial degradation of water quality and a significant impact. The potential for unintended releases of hazardous materials related to mining and reclamation activities were considered and evaluated during the development of the OCSMO (Yolo County 1996a). The project would be required to comply with provisions of the OCSMO that require protective measures including restrictions for fueling activities and requirements for development and implementation of SWPPP (Section 10-4.415). Additional federal, state, and local laws and regulations control the use of hazardous materials (see summary of regulations above).

To reduce this impact to less than significant, the project would implement OSCMO Sections 10-4.415, 10-4.433, and 10-4.437 as described in the regulatory setting section.

Mitigation Measure 4.10-7c:

None required.

Impact 4.10-7d:

Presence of mercury in site soils could result in bioaccumulation of mercury in reclaimed water bodies. (Less than Significant)

The heavy metal mercury is a potential environmental pollutant that has been identified in the Cache Creek Basin. The following description of the adverse environmental impacts associated with mercury is taken from the OCMP EIR (Impact 4.4-3). "Mercury is a potent neurotoxin, capable of causing brain damage in developing fetuses and mild tremors and emotional disturbances in adults exposed to sufficient concentrations. Compounds of mercury can also be harmful to health. Organic mercury compounds, including methylmercury, are rapidly accumulated by aquatic animals. The concentration of these compounds increases through time in the flesh of fish (bioaccumulation). In addition, the accumulation or organic mercury concentrates along aquatic food chains, reaching high levels at the top predators through a process referred to as biomagnification. Consumption of fish with bioaccumulated levels of methylmercury is the largest source of mercury exposure for humans."

Mercury could be introduced into the ecosystems of the reclaimed lakes, depending on the concentration of mercury in the surrounding sands and gravels and physical and chemical conditions in the lakes. In accordance with the provisions of SMRO Section 10-5.517, Mercury Bioaccumulation in Wildlife, Yolo County conducted initial sampling of existing aggregate mining pits reclaimed to open water lakes (Slotton, Ayers, and Reuter 1996) to investigate the potential for increased mercury levels in these environments. The investigation included testing of mercury in sediment, water, invertebrate and fish samples collected from two lakes at the Solano Concrete (currently CEMEX) mining area and from adjacent areas of the Cache Creek channel. The results of the testing indicated that total mercury and methyl mercury levels in water from the lakes were generally lower in the lake samples relative to those collected in the creek. The total mercury levels in the lake water samples were also below the recommended regulatory water quality criterion (12 ng/L). The concentrations of mercury measured in fish muscle tissue in fish collected from the lakes and from Cache Creek were determined to be "very similar and not differentiable statistically" (Slotton, Ayers, and Reuter 1996, p. 23).

To reduce the potential for future significant mercury accumulation in the proposed reclaimed lake, the project would implement the provisions of SMRO Section 10-5.517, including a sampling and analysis program to evaluate the potential for increased methylmercury production in reclaimed areas. The sampling plan would address water, sediment and fish and results would be reported to CDFG and the Office of Environmental Health Hazard Assessment. Elevated mercury could require revising the reclamation plan or other mitigation plans.

Compliance with SMRO Section 10-5.517 and the existing TMDL process would reduce this impact to less than significant.

Mitigation 4.10-7d:

None required.

Impact 4.10-8:

The project would place structures in flood hazard zone. (Less than Significant)

The project proposes construction of a processing plant and related structures. However, these structures are not located within the 100-year flood zones designated by FEMA (2002) or any other public entity within or adjacent to the project site. The OCSMO (Section 10-4.416) requires 100-year flood protection for all off-channel mining areas. To be consistent with this regulation, the project proposes bank stabilization activities that would provide the necessary 100-year protection without creating a net increase of downstream flooding elevations.

The streambank stabilization project extends from the Esparto Bridge (i.e., County Road 87 crossing of Cache Creek) to the downstream end of the existing Granite Capay bank stabilization project (completed in 2004). The proposed creek bank would provide a smooth transition from the wider channel width upstream to the narrow width defined by the Esparto Bridge abutments. The design of the new bank, in terms of flood protection, keyway depth and rock size; is consistent with the design of the existing Granite Capay project. In addition, the project would establish a terrace between the new creek bank and the existing haul road to the north. The height of the terrace would be set to the same elevation as the top of the new creek bank; i.e., the 100–year flood elevation. The bank and terrace would be vegetated with native grassland seed mix. The terrace would be planted with upland species more suited to the drier location. Therefore, the proposed creek bank and terrace are consistent with the CCRMP and re-establishment of the natural geomorphic processes.

Mitigation 4.10-8:

None required.

Impact 4.10-9:

The project could substantially conflict with applicable plans, policies, and regulations where such conflict would result in an adverse physical change in the environment. (Less than Significant)

This project has been analyzed for consistency with applicable plans, policies, and regulations using the following framework:

- Consistency with SMARA – Addressed in Section 4.11, Land Use (particularly Tables 4.11-3 through 4.11-7).
- Consistency with other applicable state plans, policies and regulations – Addressed in each section of Chapter 4.0 of this EIR, as applicable to the subject matter.
- Consistency with the County General Plan – Addressed in each section of Chapter 4.0 of this EIR, as applicable to the subject matter.
- Consistency with the CCAP – Addressed in each section of Chapter 4.0 of this EIR, as applicable to the subject matter. The analysis examines consistency with both the OCMP and the CCRMP (including the CCIP) as applicable.

- Consistency with the County Zoning Ordinance (Title 8 of the County Code) – Addressed in Section 4.11, Land Use (particularly Tables 4.11-3 through 4.11-7).
- Consistency with the County ICMMO (Title 10, Chapter 3 of the County Code) – Addressed in Section 4.11, Land Use (particularly Tables 4.11-3 through 4.11-7).
- Consistency with the County OCSMO (Title 10, Chapter 4 of the County Code) – Addressed in Section 4.11, Land Use (particularly Tables 4.11-3 through 4.11-7).
- Consistency with the County SMRO (Title 10, Chapter 5 of the County Code) – Addressed in Section 4.11, Land Use (particularly Tables 4.11-3 through 4.11-7).

Assuming approval of the requested approvals, including identified mitigation measures and standard conditions of approval, the project is considered consistent with these plans, policies, and regulations pursuant to CEQA. Specifically regarding Hydrology and Water Quality, implementation of the Erosion and Sediment Control Plan and SWPPP would ensure that that storm water discharge generated by the project meets Basin Plan water quality objectives. The SWPPP would also demonstrate compliance with applicable local and regional erosion and sediment control and storm water management standards, including policies from the County General Plan.

Mitigation Measure 4.10-9:

None required.

4.11 LAND USE

INTRODUCTION

This section analyzes the land use impacts of the project. The setting describes the existing land uses of the project site and vicinity. Project-specific impacts are identified and appropriate mitigation measures are recommended to reduce significant impacts to a less-than-significant level.

SETTING

Description of Regional Environment

The project site is located in western margin of the Sacramento Valley in central unincorporated Yolo County, California. The County is generally rural with over 96 percent of its area designated for agricultural and open-space uses. In 2008, the County's population was approximately 199,066 people, of which approximately 22 percent (23,265 people) live in the unincorporated towns, community areas, UC Davis campus, and farms (Yolo County 2009b). The unincorporated county consists of 35 community areas, which are areas with land uses designations other than agriculture or open space. These community areas are categorized into 11 towns and 24 other places. The towns include Esparto, which is 1 mile from the project site and located along SR 16. Esparto serves as the gateway to the Capay Valley. By population, it is the County's largest town with 2,534 persons, 905 housing units, and 278 jobs (Yolo County 2009b).

As described in the OCMP EIR (Yolo County 1996b), the regional environment consists of flat agricultural lands surrounded by rolling hills in the distance. Cache Creek meanders through the valley. Row crops, orchards, vineyards, and fallow fields are connected by a series of small paved public and private roads paralleled by telephone and electricity poles. Urban development and structures are generally limited to the small towns of Capay, Esparto, and Madison. However, the region is also sparsely populated by farm dwellings with various accessory and agricultural structures.

Description of Local Environment

Surrounding Area

Land uses in the area are dominated by agriculture and aggregate mining activities. Land uses in the surrounding area include agriculture to the north and east, an existing aggregate mining operation (Granite's Capay facility) to the west, and open space and agriculture to the south.

Table 4.11-1, Surrounding Land Uses, provides a description of the land uses adjacent to the project site and their distance.

Table 4.11-1 Surrounding Land Uses

Direction	Land Use
East	Agriculture
West	Aggregate Mining Facility
North	Agriculture
South	Cache Creek, Open Space

Source: Yolo County Land Use map

Project Site

The primary crops grown within the project area are row crops. There are also almond and walnut orchards in the southeastern portion of the property next to County Road 87 and south of Road 19A.

One farm residence and associated structures are located in the central portion, and no other structures are present at the project site. The portion of the project site north of Cache Creek is currently used as agriculture. The area north of Fulton and Frank Lane is currently in row crop production. South of the road, open space/grassland is located in the west and the east supports orchard crops. The area of the project site along and south of Cache Creek is either creek channel, banks, or open space/grassland. A portion of the project site was previously used for aggregate processing. There are three existing supply wells on the property that provide domestic and irrigation water supply.

The current zoning designations for the project site are “Agricultural Preserve” (A-P) for the northern parcel (APN: 048-220-022) and “General Agriculture” (A-1) for the southern parcel (APN: 048-220-015). A “Sand and Gravel Reserve” (SGR) Combining District (or overlay) designation has been placed over the entire project site. The SGR overlay designates land within the CCAP that is “reserved” for mining after 2026 (Title 8 Article 23.8 of the County Code). In order for mining to be allowed before 2026, the Applicant has requested that 390 acres of the combining zone designation be changed from SGR to “Sand and Gravel” (SG). The 390-acre change to the SG Combining District would allow mining upon approval of the project (Title 8 Article 23.1 of the County Code).

Table 4.11-2, Project Site Zoning, provides a description of the current and proposed zoning for the project site parcels and the associated acreages.

Table 4.11-2 Project Site Zoning

Assessor’s Parcel Number	Existing Zoning	Proposed Zoning	Acreages
048-220-022	A-P (SGR)	A-P (SG)	286.4
048-220-015	A-1 (SGR)	A-1 (SG)	103.6
Total			390

Notes:

A-P = Agricultural Preserve

A-1 = General Agriculture

SGR = Sand and Gravel Reserve Combining District (overlay designation, does not change underlying zoning)

SG = Sand and Gravel Combining District (overlay designation, does not change underlying zoning)

REGULATORY SETTING

This subsection analyzes the project's consistency with state and local regulations that are relevant to the entire project. Resource-specific policies, plans, and regulations are discussed in the individual resource subsections of Chapter 4.0.

State

Surface Mining and Reclamation Act

SMARA was enacted by the State Legislature in 1975 as a means of minimizing adverse environmental effects of surface mining, ensuring that mined lands are reclaimed to a usable condition and that the production and conservation of mineral resources are encouraged. The act establishes state policy regarding reclamation of mined lands and minerals management practices, among other things. Table 4.11-3 analyzes the project's consistency with SMARA.

Local

Project consistency with county mining regulations is discussed in Section 4.11, Land Use. Project consistency with General Plan policies, CCAP, and other applicable regulations is discussed below.

General Plan

The County is governed by its General Plan, which establishes the long-term goals and policies that guide development decisions and its zoning codes and ordinances, which enforce the policies set forth in the General Plan. The County adopted a new General Plan in November 2009. The 2030 Countywide General Plan integrates the CCAP and the two documents are fully consistent with regard to aggregate mining and management of Cache Creek. Project consistency with both the 2030 Countywide General Plan is addressed throughout this EIR as appropriate.

Land Development and Zoning

Title 8 of the County Code consists mainly of the County zoning regulations (Article 2 of Title 8). The current zoning designations for the project site are "Agricultural Preserve" (A-P) for the northern parcel (APN: 048-220-022) and "General Agriculture" (A-1) for the southern parcel (APN: 048-220-015). An SGR Combining Zone (or overlay) designation has been placed over the entire project site. The SGR overlay designates land within the CCAP that is "reserved" for mining after 2026 (Title 8 Article 23.8 of the County Code). In order for mining to be allowed before 2026, the Applicant has requested that the combining zone designation be changed from "Sand and Gravel Reserve" (SGR) to "Sand and Gravel" (SG). The change to the SG Combining District would allow mining upon approval of the project (Title 8 Article 23.1 of the County Code). Table 4.11-4 analyzes the project's consistency with Title 8, Land Development and Zoning.

Cache Creek Area Plan

The project falls within the planning area for the Cache Creek Area Plan CCAP (Yolo County 1996a), which consists of two documents: the OCMP and CCRMP. The OCMP governs off-channel mining and the CCRMP governs in-channel restoration. Both were adopted in 1996, and the CCRMP was subsequently updated in June 2002. Project consistency with the CCAP is addressed throughout this EIR as appropriate.

In-Channel Maintenance Mining Ordinance

The ICMMO (County Code, Title 10, Chapter 3) governs maintenance activities within Cache Creek. Table 4.11-7 analyzes the project's consistency with the ICMMO.

Off-Channel Surface Mining Ordinance

The OCSMO (County Code, Title 10, Chapter 4) governs off-channel mining activities. Table 4.11-5 analyzes the project's consistency with the OCSMO.

Surface Mining Reclamation Ordinance

The SMRO (County Code, Title 10, Chapter 5) governs mining reclamation. Table 4.11-6 analyzes the project's consistency with the SMRO.

Table 4.11-3 Surface Mining and Reclamation Act

Section	Regulation Summary	Project Compliance
2770 Reclamation of Mined Lands and the Conduct of Surface Mining Operations	(a) Except as provided in this section, no person shall conduct surface mining operations unless a permit is obtained from, a reclamation plan has been submitted to and approved by, and financial assurances for reclamation have been approved by, the lead agency for the operation pursuant to this article.	(a) Consistent. The Applicant is requesting permits for mining and reclamation. Mining operations would occur only after permit is granted and reclamation plan and financial assurances for reclamation are approved.
3503 Surface Mining and Reclamation Practice	The following are minimum acceptable practices to be followed in surface mining operations: (a) Soil Erosion Control. (1) The removal of vegetation and overburden, if any, in advance of surface mining shall be kept to the minimum. (2) Stockpiles of overburden and minerals shall be managed to minimize water and wind erosion. (3) Erosion control facilities such as retarding basins, ditches, streambank stabilization, and diking shall be constructed and maintained where necessary to control erosion.	(a) Consistent. The Applicant would implement required soil erosion control measures.
	(b) Water Quality and Watershed Control. (1) Settling ponds or basins shall be constructed to prevent potential sedimentation of streams at operations where they will provide a significant benefit to water quality. (2) Operations shall be conducted to substantially prevent siltation of ground-water recharge areas.	(b) Consistent. The Applicant proposes the construction of five settling ponds for the purpose of retaining wash fines from the gravel washing operation.
	(c) Protection of Fish and Wildlife Habitat. All reasonable measures shall be taken to protect the habitat of fish and wildlife.	(c) Consistent. The project would comply with all federal and state regulations regarding the protection of fish and wildlife habitat. Implementation of Mitigation Measures 4.5-1a, 4.5-1b, 4.5-1c, 4.5-1d, and 4.5-2 would reduce impacts on fish and wildlife habitats.
	(d) Disposal of Mine Waste Rock and Overburden. Permanent piles or dumps of mine waste rock and overburden shall be stable and shall not restrict the natural drainage without suitable provisions for diversion.	(d) Consistent. The reclamation plan calls for approximately 11 acres of the remaining portions of the mining area to be reclaimed as landscaped berms on the southern and eastern margins of the project site. Grading and contouring of the berms would follow geotechnical recommendations for slope stability. The berms would conform visually to the surrounding topography.
	(e) Erosion and Drainage. Grading and revegetation shall be designed to minimize erosion and to convey surface runoff to natural drainage courses or interior basins designed for water storage. Basins that will store water during periods of surface runoff shall be designed to prevent erosion of spillways when these basins have outlet to lower ground.	(e) Consistent. In the Reclamation Plan, drainage is planned to direct runoff from reclaimed areas to interior basins in a manner that would prevent unintended ponding of water or erosion. Runoff would be directed toward interior basins.

Table 4.11-3 Surface Mining and Reclamation Act

Section	Regulation Summary	Project Compliance
	(f) Resoiling. When the reclamation plan calls for resoiling, coarse hard mine waste shall be leveled and covered with a layer of finer material or weathered waste. A soil layer shall then be placed on this prepared surface. Surface mines that did not salvage soil during their initial operations shall attempt, where feasible, to upgrade remaining materials. The use of soil conditioners, mulches, or imported topsoil shall be considered where revegetation is part of the reclamation plan and where such measures appear necessary. It is not justified, however, to denude adjacent areas of their soil, for any such denuded areas must in turn be reclaimed.	(f) Consistent. In the Reclamation Plan, all areas not submerged in the proposed lake in the center of the project site would have lesser quality washed fines covered with the site's original soils stockpiled for the duration of the project.
	(g) Revegetation. When the reclamation plan calls for revegetation the available research addressing revegetation methods and the selection of species having good survival characteristics, for the topography, resoiling characteristics, and climate of the mined areas shall be used.	(g) Consistent. The Habitat Conservation Plan includes revegetation with native seeds.
3704.1 Performance Standards for Backfilling Excavations and Recontouring Lands Disturbed by Open Pit Surface Mining Operations for Metallic Minerals	(b) Backfilling shall be engineered, and backfilled materials shall be treated, if necessary, to meet all of the provisions of Title 27, California Code of Regulations, Division 2, Chapter 7, Subchapter 1, Mining Waste Management, commencing with Section 22470, and the applicable Regional Water Quality Control Board's Water Quality Control Plan.	(b) Consistent. Although the Applicant is not operating a mine for metallic minerals, it should be noted that all backfilled and reclaimed areas shall be put to use as Prime agricultural land, pasture land, or aquatic habitat.
	(d) Backfilling, recontouring, and revegetation activities shall be preformed in clearly defined phases to the engineering and geologic standards required for the end use of the site as stipulated in the approved reclamation plan. All fills and fill slopes shall be designed to protect groundwater quality, to prevent surface water ponding, to facilitate revegetation, to convey runoff in a non-erosive manner, and to account for long term settlement.	(d) Consistent. The Reclamation plan includes detailed plans for grading of the resulting landscape to direct drainage into low lying agricultural areas, while providing adequate field gradients to allow for stormwater drainage from the agricultural areas to planned tailwater ponds. Reclaimed areas would be surveyed on an annual basis for five years to account for potential settlement. Any adverse grade changes caused by settlement would be corrected by the Applicant.
3706 Performance Standards for Drainage, Diversion Structures, Waterways, and Erosion Control.	(a) Surface mining and reclamation activities shall be conducted to protect on-site and downstream beneficial uses of water in accordance with the Porter-Cologne Water Quality Control Act, Water Code Section 13000, et seq., and the Federal Clean Water Act, 33 U.S.C. Section 1251, et seq.	(a) Consistent. The plant sites final reclamation grades are designed to direct runoff to retention basins at the northeast and southwest corners of the plant site. This drainage plan is designed to retain water on site, and keep runoff from entering open mining areas.
	(b) The quality of water, recharge potential, and storage capacity of ground water aquifers which are the source of water for domestic, agricultural, or other uses dependent on the water, shall not be diminished, except as allowed in the approved reclamation plan.	(b) Consistent. Creating and filling detention basins would alter the hydraulic properties of the areas filled. It is not anticipated to alter the storage capacity or water quality of the Quaternary Alluvial aquifer, nor diminish capacity of the aquifer.
	(c) Erosion and sedimentation shall be controlled during all phases of construction, operation, reclamation, and closure of a surface mining operation to minimize siltation of lakes and watercourses, as required by the RWQCB or the SWRCB.	(c) Consistent. As addressed in the Applicant's Application Package, grading is planned during operation and reclamation phases to prevent discharges into the wet-pit/open-water habitat. The plant sites final reclamation grades are designed to direct runoff to retention basins at the northeast and southwest corners of the plant site. This drainage plan is designed to retain water on site, and keep runoff from entering open mining areas.

Table 4.11-3 Surface Mining and Reclamation Act

Section	Regulation Summary	Project Compliance
	(d) Surface runoff and drainage from surface mining activities shall be controlled by berms, silt fences, sediment ponds, revegetation, hay bales, or other erosion control measures, to ensure that surrounding land and water resources are protected from erosion, gullying, sedimentation, and contamination. Erosion control methods shall be designed to handle runoff from not less than the 20 year/l hour intensity storm event.	(d) Consistent. There is no stormwater runoff leaving the site. The project was designed to drain to on-site settling ponds and retention basins. The retention pond was sized to contain the plant site runoff from a 10 year-24 hour storm, which is a greater volume than the 20 year-1 hour storm. This code item only applies to stormwater discharging off-site.
	(e) Where natural drainages are covered, restricted, rerouted, or otherwise impacted by surface mining activities, mitigating alternatives shall be proposed and specifically approved in the reclamation plan to assure that runoff shall not cause increased erosion or sedimentation.	(e) Consistent.
3709 Performance Standards for Building, Structure, and Equipment Removal	(a) All equipment, supplies and other materials shall be stored in designated areas (as shown in the approved reclamation plan). All waste shall be disposed of in accordance with state and local health and safety ordinances.	(a) Consistent. All equipment, supplies and other materials would be stored at the plant site shown in the Reclamation Plan's Exhibit A, Mining Plan, and Figure 5, Site Plan. Waste generated by the mining and processing operation consists mostly of fine grained wash sediments which would be used to backfill selected areas on site primarily for reclamation to agricultural uses. Regular waste (refuse and garbage) would be hauled off the site periodically by Waste Management of Woodland.
	(b) All buildings, structures, and equipment shall be dismantled and removed prior to final mine closure except those buildings, structures, and equipment approved in the reclamation plan as necessary for the end use.	(b) Consistent. All buildings, structures, and equipment would be removed in conjunction with final mine closure.
3710 Performance Standards for Stream Protection, Including Surface and Groundwater	(a) Surface and groundwater shall be protected from siltation and pollutants which may diminish water quality as required by the Federal Clean Water Act, Sections 301 et seq. (33 U.S.C. Section 1311), 404 et seq. (33 U.S.C. Section 1344), the Porter-Cologne Act, Section 13000 et seq., County anti-siltation ordinances, the Regional Water Quality Control Board or the State Water Resources Control Board.	(a) Consistent. The project includes necessary measures to protect surface and ground water quality. All mine operations and reclamation activity would be conducted to protect on-site and downstream beneficial uses of water. This would be accomplished through conformance with applicable state and federal requirements for preventing releases of materials that could impact beneficial uses of water, and for reporting and mitigating releases if they should occur. Fine-grain wash sediments would be placed in settling ponds during mine operations in accordance with RWQCB requirements for protection of water quality. As part of mine closure and final reclamation, equipment and materials would be removed from the site. Fine-grain wash sediments contained in settling ponds would be allowed to dry and then covered with topsoil and the revegetated or returned to prime agricultural use. Other reclaimed areas that are not used for prime agriculture or occupied by open water/lake habitat would be covered with soil and seeded and/or planted to stabilize the ground surface. Revegetation of disturbed ground surfaces would minimize erosion. Surface grading during operations and following reclamation are designed to retain storm water drainage from Mined Lands onsite. Furthermore, reclaimed surface grades are designed to retain storm water drainage and agricultural tail water onsite.

Table 4.11-3 Surface Mining and Reclamation Act

Section	Regulation Summary	Project Compliance
	(b) In-stream surface mining operations shall be conducted in compliance with Section 1600 et seq. of the California Fish and Game Code, Section 404 of the Clean Water Act, and Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403). (c) Extraction of sand and gravel from river channels shall be regulated to control channel degradation in order to prevent undermining of bridge supports, exposure of pipelines or other structures buried within the channel, loss of spawning habitat, lowering of ground water levels, destruction of riparian vegetation, and increased stream bank erosion (exceptions may be specified in the approved reclamation plan). Changes in channel elevations and bank erosion shall be evaluated annually using records of annual extraction quantities and benchmarked annual cross sections and/or sequential aerial photographs to determine appropriate extraction locations and rates. (d) In accordance with requirements of the California Fish and Game Code Section 1600 et seq., in-stream mining activities shall not cause fish to become entrapped in pools or in off-channel pits, nor shall they restrict spawning or migratory activities.	(b), (c), (d) Not applicable. This project is an off-channel mining proposal.
3711 Performance Standards for Topsoil Salvage, Maintenance, and Redistribution	When the approved reclamation plan calls for revegetation or cultivation of disturbed lands, the following performance standards shall apply to topsoil salvage, maintenance, and redistribution activities: (a) All salvageable topsoil suitable for revegetation shall be removed as a separate layer from areas to be disturbed by mining operations. Topsoil and vegetation removal shall not precede surface mining activities by more than one year, unless a longer time period is approved by the lead agency. (b) Topsoil resources shall be mapped prior to stripping and the location of topsoil stockpiles shall be shown on a map in the reclamation plan. If the amount of topsoil needed to cover all surfaces to be revegetated is not available on site, other suitable material capable of sustaining vegetation (such as subsoil) shall be removed as a separate layer for use as a suitable growth media. Topsoil and suitable growth media shall be maintained in separate stockpiles. Test plots may be required to determine the suitability of growth media for revegetation purposes. (c) Soil salvage operations and phases of reclamation shall be carried out in accordance with a schedule that: (1) is set forth in the approved reclamation plan; (2) minimizes the area disturbed; and (3) is designed to achieve maximum revegetation success allowable under the mining plan.	(a) Consistent. The project proposes removing topsoil layers and segregating topsoil layers based upon soil horizons prior to initiating the extraction of sand and gravel. (b) Consistent. Soil stockpiles would be located on site, to minimize transport and handling, the Soils Evaluation Report and Reclamation Plan would identify the soils and their locations. (c) Consistent. Soil salvage and reclamation are outlined as a series of offset phases over a 32-year period, culminating in reclaimed Prime agricultural land and open-water habitat. A series of five settling ponds to contain wash fines would be built and used sequentially to minimize surface disturbance at any one time. Reclaimed areas would be monitored for a period of five years to ensure revegetation is successful.

Table 4.11-3 Surface Mining and Reclamation Act

Section	Regulation Summary	Project Compliance
	(d) Topsoil and suitable growth media shall be used to phase reclamation as soon as can be accommodated by the mining schedule presented in the approved reclamation plan following the mining of an area. Topsoil and suitable growth media that cannot be utilized immediately for reclamation shall be stockpiled in an area where it will not be disturbed until needed for reclamation. Topsoil and suitable growth media stockpiles shall be clearly identified to distinguish them from mine waste dumps. Topsoil and suitable growth media stockpiles shall be planted with a vegetative cover or shall be protected by other equally effective measures to prevent water and wind erosion and to discourage weeds. Relocation of topsoil or suitable growth media stockpiles for purposes other than reclamation shall require prior written approval from the lead agency.	(d) Consistent. The Reclamation Plan complies with this regulation.
	(e) Topsoil and suitable growth media shall be redistributed in a manner that results in a stable, uniform thickness consistent with the approved end use, site configuration, and drainage patterns.	(e) Consistent. The Reclamation Plan complies with this regulation.
3712 Performance Standards for Tailing and Mine Waste Management.	State Water Resources Control Board mine waste disposal regulations in Article 1, Subchapter 1, Chapter 7 of Title 27, California Code of Regulations, shall govern mine waste and tailings, and mine waste disposal units shall be reclaimed in conformance with this article.	Consistent. All mine waste disposal operations and reclamation would be in conformance with State Water Resources Control Board regulations and Regional Water Quality Control Board permit requirements

Table 4.11-4 Land Development and Zoning, Title 8 – Yolo County

Section	Regulation Summary	Project Compliance
Article 4. Agriculture Preserve Zone (A-P)		
8-2.404.5 Conditional Uses (A-P) Major Use Permit	Upon review and approval, or conditional approval, by the Planning Commission, the following conditional uses may be authorized by Major Use Permit: (b) Commercial surface mining operations, after the approval of a Special Sand and Gravel Combining Zone (SG) pursuant to Article 23.1 of this chapter. Surface mining operations may be allowed only when located within the Off-Channel Mining Plan area and/or when necessary for agriculture. Such use may include processing plants, batch plants, offices, equipment storage yards, and other facilities appurtenant to the surface mining operations. The landowner shall agree to a modification of the Land Use contract affecting the parcel that provides for taxation of the affected portion of the parcel pursuant to the provisions of Section 423(a)(3) of the California Revenue and Taxation Code, *inter alia*.	(b) Consistent. The Board of Supervisors has the authority to grant a conditional use permit following review of the application and environmental document.
8-2.408 Land Use Contracts (A-P)	(h) Williamson Act contracts may be nonrenewed, rescinded or cancelled only as provided in the Williamson Act (Government Code Section 51200 et. seq.); Uses that are allowed, whether as permitted, accessory or conditional uses, in the A-P zone shall be restricted to those uses deemed compatible with contracted land under the Williamson Act. Compatible uses shall meet all applicable findings required in Section 51238 et. seq. of the Williamson Act. Any amendment to the lists of permitted accessory or conditional uses in the A-P zone shall be an amendment of the uses allowed under then existing and subsequently approved Williamson Act contracts without further notice. (As amended by §21, Ord. 1303, eff. July 24, 2003).	(h) Consistent. Implementation of Mitigation Measure 4.3-2 would make the project consistent with this section.
Article 6. Agricultural General Zone (A-1)		
8-2.604.5 Conditional Uses (A-1) Major Use Permit	Upon review and approval, or conditional approval, by the Planning Commission, the following conditional uses shall be authorized by Major Use Permit: (e) Commercial surface mining operations, after the approval of a Special Sand and Gravel Combining Zone (SG) pursuant to Article 23.1 of this chapter. Surface mining operations may be allowed only when located within the Off-Channel Mining Plan area and/or when necessary for agriculture. Such use may include processing plants, batch plants, offices, equipment storage yards, and other facilities appurtenant to the surface mining operations.	(e) Consistent. The Board of Supervisors has the authority to grant a conditional use permit following review of the application and environmental document. The EIR authors cannot determine whether the Commission would grant a permit.
Article 23.1. Special Sand and Gravel Combining Zone (SG)		
8-2.2312 Land Use Regulations	The Special Sand and Gravel Combining Zone (SG) may be combined with any A-1 Zone or A-P Zone located within the boundaries of the Off-Channel Mining Plan as defined by Chapter 4 of Title 10 of this Code pursuant to the following regulations:	

Table 4.11-4 Land Development and Zoning, Title 8 – Yolo County

Section	Regulation Summary	Project Compliance
	(a) No use permit for commercial surface mining operations shall be issued for any land which is not zoned A-1/SG or A-P/SG pursuant to this section. All mining permits for lands zoned SG shall be issued in accordance with the requirements of Chapters 4 and 5 of Title 10 of this Code. (b) This article is not intended and shall not be construed as allowing any use inconsistent with the General Plan and all its elements; any specific plan applicable to the site, or the zoning of the site, nor shall this article limit the existing discretion of the Commission or the Board to impose conditions on the granting of a use permit for off-channel surface mining. (§ 1, Ord. 488.170, eff. February 22, 1979, as amended by § 7, Ord. 681.164, eff. September 5, 1996)	(a), (b) Consistent. The project is requesting a Zoning Ordinance Amendment to change the current zoning designations from Agricultural Preserve with Sand and Gravel Reserve Combining Zone (A-P/SGR) to Agricultural Preserve with Sand and Gravel Zone (A-P/S-G) and from General Agriculture with Sand and Gravel Reserve Combining Zone (A-1/SGR) to General Agricultural with Sand and Gravel Zone (A-1/S-G). Currently, the SG Zone does not apply to the project site. If the zoning amendment is approved, the project would be consistent with the SG Combining Zone.
Article 23.8. Sand and Gravel Reserve Combining Zone (SGR)		
8-2.2382 Land Use Regulations (SGR)	The Sand and Gravel Reserve Combining Zone (SGR) may be combined with any A-1 and A-P Zones located within the boundaries of the Off-Channel Mining Plan as defined by Chapter 4 of Title 10 of this Code, pursuant to the following regulations: (a) This article is intended and shall be construed to designate land areas where future surface mining operations shall be considered after 2026. The SGR classification is an indication to surrounding property owners and lead agencies of areas that are targeted by the County for future extraction after 2026. (c) No commercial surface mining operations shall be conducted on lands classified with the SGR Zone. Commercial surface mining operations shall only be permitted in accordance with Article 23.1 of this chapter and the requirements of Chapter 4 of Title 10 of this Code. (§ 8, Ord. 681.164, eff. September 5, 1996)	(a), (b) Consistent. The project is requesting a rezoning amendment to change the current zoning designations from Agricultural Preserve with Sand and Gravel Reserve Combining Zone (A-P/SGR) to Agricultural Preserve with Sand and Gravel Combining Zone (A-P/S-G) and from General Agriculture with Sand and Gravel Reserve Combining Zone (A-1/SGR) to General Agricultural with Sand and Gravel Combining Zone (A-1/S-G). If the rezoning is granted, project would be consistent.

Table 4.11-5 In-Channel Maintenance Mining Ordinance

Section	Regulation Summary	Project Compliance
10-3.401 Access Roads	(a) All unpaved roads used during in-channel maintenance mining operations shall be adequately watered to keep soil moist at all times, in order to control fugitive dust.	(a) Consistent. Implementation of Mitigation Measure 4.4-2a would control fugitive dust.
	(b) Upon cessation of use, operational areas and haul roads that are not required for future use of the site shall be ripped and prepared to prevent compaction and allow for revegetation.	(b) Consistent. This regulation would apply after the mining operations are complete.
	(c) In-channel haul roads shall be located along the toe of the streambank, in order to provide additional bank stabilization and to minimize disturbance of the low-flow channel. Each operation may have no more than two (2) haul roads at one time that cross the low-flow channel. Construction of the haul roads shall not result in excavation of the toe of the streambank, and shall be designed to avoid existing or restored riparian habitat.	(c) Consistent. No in-channel haul roads have been proposed.
	(d) No new haul roads shall constructed through significant riparian vegetation. Haul roads shall be realigned or redesigned to avoid established habitat.	(d) Consistent. No new haul roads have been proposed.
	(e) Haul roads shall comply with all applicable requirements and conditions of approval.	(e) Consistent. The County will require conformity with codes and conditions through inspections and enforcement during implementation.
10-3.403 Agency Approvals	All work within the channel shall comply with the requirements of all agencies of jurisdiction, including but not limited to: Yolo County Building Division (engineered plans for dams or sills), Yolo County CCRMP and CCIP (all applicable standards), the State Department of Conservation (SMARA compliance), the State Department of Fish and Game (Section 1601 Streambed Alteration Agreement), the State Regional Water Quality Control Board (Section 401 and stormwater discharge), Caltrans (protection of bridges and highways), the U.S. Army Corps of Engineers (Section 404), the U.S. Fish and Wildlife Services (Endangered Species Act), and the Federal Emergency Management Agency (Flood Hazard Development Permit). These requirements may take the form of programmatic ("general") permits issued for the entire CCRMP/CCIP for a multi-year period if proposed activities are deemed consistent with the provisions of those permits by the Director.	Consistent. The Applicant must obtain all applicable permits prior to project implementation.
10-3.404 Cultural Resources	(a) If human skeletal remains are encountered during excavation, all work within seventy-five (75) feet shall immediately stop, and the County Coroner shall be notified within twenty-four (24) hours. If the remains are of Native American origin, the appropriate Native American community identified by the Native American Heritage Commission shall be contacted, and an agreement for treating or disposing, with appropriate dignity, of the remains and associated grave goods shall be developed. If any cultural resources, such as chipped or ground stone, historic debris, building foundations, or paleontological materials are encountered during excavation, then all work within seventy-five feet shall immediately stop and the Director shall be notified at once. A qualified archaeologist shall then examine any cultural resources found on the site and the information shall be submitted to the County.	(a) (b) Consistent. This EIR analyzes potential prehistoric and historic sites. The County will require conformity with codes and conditions through inspections and enforcement during implementation.

Table 4.11-5 In-Channel Maintenance Mining Ordinance

Section	Regulation Summary	Project Compliance
	(b) Damaging effects to cultural resources shall be avoided whenever possible. If avoidance is not feasible, the importance of the site shall be evaluated by a qualified archeologist prior to the commencement of excavation operations. If a cultural resource is determined not to be important, both the resource and the effect on it shall be reported to the County, and the resource need not be considered further. If avoidance of an important cultural resource is not feasible, a mitigation plan shall be prepared and implemented. The mitigation plan shall explain the importance of the resource, describe the proposed approach to mitigate destruction or damage to the site, and demonstrate how the proposed mitigation would serve the public interest.	
10-3-405 Design Guidelines	All in-channel activities shall be consistent with and fully implement the design guidelines for channel stabilization and maintenance contained in Chapter 5.0 of the CCIP.	Consistent. The project proposes bank stabilization activities that are consistent with these requirements (Cunningham Engineering 2007).
10-3.408 Hazards and Hazardous Materials	(a) All heavy equipment used for channel improvement projects shall be kept in good working order to reduce emissions and preclude the leakage of oils, fuels, and other substances that may adversely affect property, the environment, or human health and safety. Fueling and maintenance activities shall not occur within one-hundred (100) feet of the active channel. All procedures for handling, storage, and disposal of hazardous materials shall be described in a Storm Water Pollution Prevention Plan if required for the projects. Any long-term project (e.g., extensive erosion control, gravel removal) shall have a chemical spill prevention and emergency plan filed and approved by the appropriate local agency. The plan must include training of the equipment operator and workers in spill reporting and how to minimize environmental damage. (b) Firms or individuals performing work within the channel shall immediately notify the Director and/or the Yolo County Office of Emergency Services of any events such as fires, explosions, spills, land or slope failures, or other conditions at the site which could pose a risk to property, the environment, or human health and safety outside the permitted area. Upon request by any County agency, the firm or individual shall provide a written report of any such event, within thirty (30) days, which shall include, but not be limited to, a description of the facts of the event, the corrective measures used, and the steps taken to prevent a recurrence of the incident. This condition does not supersede nor replace any requirement of any other government agency for reporting incidents. (c) A copy of the approved Business Emergency Response Plans and the approved Spill Prevention Control and Countermeasure Plans, if required, shall be filed with the Yolo County Health Department, prior to the commencement of work within the channel. (d) Wastewater from in-channel projects shall not be directly discharged to Cache Creek. Measures such as berms, silt fences, sediment ponds, hay bales, and/or revegetation shall be used to control erosion. Agricultural tailwater shall be diverted to catchment basins prior to release to the creek.	(a), (b), (c), (d), (e) Consistent. The project would be required to conform with all of the provisions of the ICMMO as a requirement for the mining permit.

Table 4.11-5 In-Channel Maintenance Mining Ordinance

Section	Regulation Summary	Project Compliance
	(e) Sediment fines generated by aggregate processing of in-channel sand and gravel shall be used for agricultural soil enhancement or –stream revegetation projects. In-channel sediment fines shall not be used as backfill material in off-channel habitat restoration, due to potential high mercury content. (f) All internal combustion engine driven equipment and vehicles shall be kept tuned according to the manufacturers specifications and properly maintained to minimize the leakage of oils and fuels. No vehicles or equipment shall be left idling for a period of longer than ten (10) minutes.	
10-3.409 Hours of Operation	All in-channel operations shall be limited to the hours of 8:00 a.m. to 5:00 p.m., Monday through Friday, unless emergency conditions require otherwise as determined by the Director.	Consistent. In-channel activities are proposed to occur between 8 am and 5 pm, Monday through Friday.
10-3.410 Location	Removal of in-channel aggregate materials shall only occur pursuant to this chapter and pursuant to the requirements of the CCRMP/CCIP. Removal of in-channel aggregate materials shall be restricted to locations within the Cache Creek channel that fall within the boundaries of the CCAP.	Consistent. No removal of in-channel materials has been proposed. Proposed improvements fall within the CCAP boundaries.
10-3.411 Noise	Noise levels shall not exceed an average noise level equivalent (Leq) of eighty (80) decibels (dBA) measured at the outermost boundaries of the parcel being excavated. However, noise levels may not exceed an average noise level equivalent (Leq) of sixty (60) decibels (dBA) at any nearby residences or other noise-sensitive land uses, unless emergency conditions require otherwise as determined by the Director.	Consistent. The proposed in-channel work would be conducted within these constraints.
10-3.412 Permit Life	FHDPs shall be approved for the period of time identified by the Director as necessary to complete the proposed in-channel activity, up to a maximum period of two years. A permit may be extended for an additional two years, subject to further review and approval by the Director. All FHDPs shall be subject to annual adjustment by the Director to address the amount of materials that can be extracted from the site based on data obtained through the annual monitoring program.	Consistent. Implementation of the Streambank Stabilization Plan (SSP) must be accompanied by approval of a Flood Hazard Development Permit (FHDP) from Yolo County (ICMMO Section 10-3.209).
10-3.413 Processing Prohibition	Processing of in-channel excavated material shall occur only at approved off-channel plant facilities. No new plant facilities shall be established for the purposes of processing in-channel materials.	Consistent. No removal of in-channel materials has been proposed. Any ancillary excavated material would be processed at the proposed off-channel plant facilities consistent with the County Code.
10-3.414 Regrading	Streambed regrading after excavation shall leave behind an undulating surface outside of the low-flow channel, so that the resulting surface depressions expose the shallow water table and encourage the colonization of riparian trees. Features such as channels and pools maximize the diversity of environmental conditions for the establishment of riparian habitat, and are therefore encouraged.	Not applicable. The proposed in-channel improvements would realign the creek bank consistent with the CCIP and do not propose excavation of the channel floor. This regulation applies to channel floor excavations (e.g. bar removal).
10-3.415 Revegetation	(a) Approved projects requiring excavation of channel banks and removal of riparian vegetation shall be revegetated consistent with Performance Standards 4.5-1 through 4.5-23 of the CCRMP, and with the CCAP, upon the completion of excavation activities.	(a) Consistent. The project would realign the channel banks and restore riparian habitat within the stream channel following Performance Standards 4.5-1 through 4.5-23 of the CCRMP.

Table 4.11-5 In-Channel Maintenance Mining Ordinance

Section	Regulation Summary	Project Compliance
	(b) Vegetated buffers should be placed between restored habitat areas and adjoining farmland, in order to minimize the potential for riparian areas to serve as reservoirs for agricultural pests. Said buffers will also reduce the effects of noise, dust, and spraying generated by agricultural operations on wildlife and riparian vegetation. (c) Species and water features included in habitat areas should be designed to discourage the proliferation of agricultural pests and weeds that would impair local crops. (d) Species shall be selected to encourage the biological control of agricultural and native habitat pests and weeds.	(b), (c), (d) Consistent. As a result of reclamation associated with the proposed project there will be buffers vegetated with native species located between the in-channel improvements and future agriculture to the north. As required by these regulations, biological controls will be factored into species lists and features.
	(e) Trees that are suitable for wildlife perching near agricultural fields dedicated to row crop production should be incorporated into habitat design, in order to provide foraging habitat for Swainson's hawks and other birds of prey.	(e) Consistent. Oaks and other native trees suitable for perching are proposed for planting on the berms south of the haul road.
	(f) As an alternative to on-site revegetation where such cannot be feasibly and successfully implemented, habitat restoration or creation at a suitable off-site location and/or non-native removal and other habitat enhancement at a suitable off-site location will be required.	(f) Consistent. If on-site revegetation is not successfully implemented the project would restore offsite (on the proposed mining site) at a 1: 1 ratio.
10-3.416 Seasonal Restrictions	Pursuant to the CCIP, the deadline for submittal of applications for an FHDP in the Cache Creek channel is May 31. The deadline for completion of approved in-channel work is November 1, unless an extended period for completion is recommended by the TAC, consistent with applicable general permit conditions imposed by other agencies of jurisdiction (see Section 10-3.403), and approved by the Director.	Consistent. Implementation of the Streambank Stabilization Plan (SSP) requires approval of a Flood Hazard Development Permit (FHDP) from Yolo County (ICMMO Section 10-3.209) r. Work would be completed by November 1; unless an extension is granted.
10-3.417 Setbacks	(a) No excavation shall take place within one-hundred and fifty (150) feet of the centerline of the low-flow channel, where the creek is contained within a single channel. Where the creek is braided or contains multiple channels, no excavation shall take place within one-hundred and twenty-five (125) feet of each channel.	(a) Consistent. The project proposes no removal of materials from the channel.
	(b) No excavation shall take place within twenty-five (25) feet of any mature trees to be retained within the channel.	(b) Consistent. The project proposes no removal of materials from the channel. The proposed fill area may require removal of trees in order to implement the CCIP/Test 3 requirements.
	(c) For the purposes of this Section and CCRMP Performance Standard 6.5-8, channel stabilization and/or restoration activities that are otherwise consistent with the CCRMP and CCIP, but would encroach within these setbacks, are allowed subject to the review of the TAC and approval by the Director.	(c) Consistent (see above). This project will be required to be reviewed by the TAC and the Director. The project proposes no excavation within 150 feet of the centerline of the low-flow channel.

Table 4.11-5 In-Channel Maintenance Mining Ordinance

Section	Regulation Summary	Project Compliance
10-3.418 Slopes	(a) Final slopes for in-channel excavations shall conform to the channel slope and sinuosity guidelines shown in Figure 11 of the CCRMP. Excavations shall be sloped in a downstream direction, towards the low-flow channel. When recommended by the TAC, alternate grading plans may be approved by the Director. (b) In-channel excavations shall generally conform to the cross-section profiles shown in Figures 12 through 16 of the CCRMP. When recommended by the TAC, alternate grading plans may be approved by the Director.	(a), (b) Consistent. The project proposes bank stabilization activities that conform with these requirements (Cunningham Engineering 2007).
10-3-419 Surveys	The applicant shall ensure that completed projects are surveyed to provide a record of as-built conditions. This survey shall be completed in a form acceptable to the TAC, and shall be submitted to the TAC within thirty days of completion of the project as determined by the Director.	Consistent. The County will require conformity with codes and conditions through inspections and enforcement during implementation.

Table 4.11-6 Off-Channel Surface Mining Ordinance

Section	Regulation Summary	Project Compliance
10-4.402 Access Roads	The first 100 feet of access road intersecting a County-maintained road shall be surfaced in a manner approved by the Public Works Department, with an approach constructed to County standards. Traffic control and warning signs shall be installed as required by the Public Works Department. (§ 1, Ord. 1190, eff. September 5, 1996)	Consistent. The access roads to the project site are already paved and have appropriate traffic control and warning signs, as required by the Public Works Department.
10-4.403 Accident Reporting	The operator shall immediately notify the Director of any events such as fires, explosions, spills, land or slope failures, or other conditions at the site which could pose a hazard to life or property. Action shall be immediately undertaken to alleviate the hazard. Upon request by any County agency, the operator shall provide a written report of any such event, within thirty (30) days, which shall include, but not be limited to, a description of the facts of the event, the corrective measures used, and the steps taken to prevent a recurrence of the incident. This condition does not supersede nor replace any requirement of any other governmental entity for reporting incidents. A copy of the operators' approved Business Emergency Response Plans and the approved Spill Prevention Control and Countermeasure Plans shall be submitted to the Yolo County Health Department, prior to the commencement of mining. (§ 1, Ord. 1190, eff. September 5, 1996)	Consistent. The Applicant would submit a Business Emergency Response Plan and approved SPCC Plan to the County before mining begins. The condition for a written report would not be met until after a fire, explosion, spill, land or slope failure, or other condition at the site which could pose a hazard to life or property has occurred.
10-4.404 Aesthetics	The visibility of mining operations, facilities, and landform alterations from public and viewpoints and nearby residences shall be minimized, based on an assessment of site specific visual characteristics and viewing conditions. The use of berms, vegetative screens, seeding, special plant materials and contouring the sides and top surfaces of modified landforms, or other measures, shall be incorporated into the individual mine and reclamation plans as appropriate. (§ 1, Ord. 1190, eff. September 5, 1996)	Consistent. The project proposes landscaped berms to minimize the visibility of the project.
10-4.405 Annual Production Limits	Each surface mine shall operate within the limits of the annual production level established in the use permit. Annual aggregate production may not exceed the established annual level, except to meet temporary market demand. Individual producers may exceed their maximum annual allocation by up to twenty (20%) percent in any one calendar year, so long as their running ten (10) year average does not exceed the maximum level. Aggregate sold in excess of the established annual level shall be subject to a ten (10¢) cents/ton surcharge. Monies generated by the surcharge shall be divided evenly between the CCIP fund and the Maintenance and Remediation Fund. The maximum cumulative amount of aggregate sold annually shall not exceed 5.97 million tons, plus the twenty (20%) percent market demand exception allowed for permits issued under the OCMP. Waste concrete and asphalt that is processed as recycled materials for use in construction shall not be counted as part of an operation's maximum annual production. (§ 1, Ord. 1190, eff. September 5, 1996)	Consistent. The Applicant is requesting a permit to mine 1 million tons annually with a request to exceed by 20 percent in any given year. When added to approved/allocated tonnage under the CCAP the project would result in a slight exceedance of the cumulative tonnage analyzed in the OCMP EIR (see discussion of cumulative mining assumptions in Section 5.1, Cumulative Effects). Additional cumulative analysis has been included to provide CEQA clearance for this request should it be granted.

Table 4.11-6 Off-Channel Surface Mining Ordinance

Section	Regulation Summary	Project Compliance
10-4.406 Benches	During mining operations, a series of benches may be excavated in a slope provided that the excavations are made in compliance with the requirements of the State Mine Safety Orders (California Code of Regulations, Title 8, Subchapter 17). The vertical height and slope of the benches constructed for permanent reclaimed slopes shall not exceed maximum standards for the specific soil types presented in the California Code of Regulations, Title 8, Article 6. In general, vertical cutslopes between benches shall not exceed four (4') feet in height in topsoil and overburden sediments. Benching shall be allowed in cohesive soil (clay, sandy or silty clay, clayey silt) only. Slopes above the elevation of groundwater (determined at the time of the excavation by the level of exposed water in the excavation) that exceed the maximum vertical height shall be excavated and maintained at slopes not greater than 2:1 (horizontal: vertical). Slopes located five (5') feet or less below the average summer low ground-water level shall not be steeper than 2:1 (horizontal:vertical). Slopes located more than five (5') feet below the average summer low groundwater level shall not be steeper than 1: 1 (horizontal to vertical). Vertical cutslopes in excess of four (4') feet in height may be approved for the development of special habitat (e.g., bank swallows) if a site-specific slope stability analysis, performed by a licensed engineer, indicates that the slope does not exceed critical height for the on-site soil conditions. Projects proposing such slopes shall submit a long-term maintenance plan to ensure that the function of the slopes as habitat is met. (§ 1, Ord. 1190, eff. September 5, 1996)	Consistent. The slopes of the margins of the mining area would generally be excavated to maintain a maximum gradient of 2:1. The slopes extend to depths greater than 5 feet below the low groundwater level would be maintained at a maximum gradient of 1.5:1. The mining slopes adjacent to the West Adams Canal and extending 500 linear feet south along County Road 87 from the canal would be no steeper than 3:1 to depths less than 5 feet below the groundwater level and 1.5:1 or 2:1 below that depth.
10-4.407 Conveyor Systems	Wherever practical and economically feasible, portable or movable conveyor systems shall be used to transport raw materials and overburden. (§ 1, Ord. 1190, eff. September 5, 1996)	Consistent. The project proposes to use a conveyor system to transport extracted sand and gravel deposits to the processing plant site.
10-4.408 County Road Improvements	Each operator shall pay its fair share toward improvements required to maintain Level of Service (LOS) "C" operations on County roads of LOS "D" operations on State Highways within the OCMP planning area. Fair share mitigation shall also be required to improve existing operational deficiencies of the transportation system. Specific locations shall be identified through the project specific environmental review process for each operator's long-term mining permit application. Each operator shall participate in a funding program operated by the County which is designed to ensure that all improvements are made in a timely manner and that a reimbursement mechanism is in place to ensure repayment of any costs contributed in excess of fair share amounts. The program shall be initiated upon the approval of the long-term mining permits and shall be updated biennially by the County to ensure any new or modified impacts or funding sources are being addressed. Each operator shall have the option to complete the work at their expense without triggering the competitive bid process, as long as they comply with the applicable legal requirements of the County. If the operator declines the option, the County shall utilize the competitive bid process. (§ 1, Ord. 1190, eff. September 5, 1996)	Consistent. The Applicant would assume joint pavement maintenance responsibility with the County on County Road 87 from the project access road to County Road 19, and on County Road 19 from County Road 87 to I-505, for the permit period (see Mitigation Measures 4.13-1 and 4.13-2).

Table 4.11-6 Off-Channel Surface Mining Ordinance

Section	Regulation Summary	Project Compliance
10-4.409 County Road Maintenance	The operator shall agree to assume joint pavement maintenance responsibility with the County (or shared with another producer using the same roadway) for all County roads along a designated haul route from the access point of the surface mining operation to an appropriate State Highway. The operator shall agree to submit an evaluation of the structural integrity of the identified roadways on or before December 1 of each year in which mining operations are permitted. The report shall be prepared by a Registered Civil Engineer and/or County staff with expertise in the area of roadway pavement and shall be subject to the approval of the Public Works Department. Based on the results of this annual evaluation, the Public Works Department shall identify the improvements required to maintain safe and efficient traffic operations on the road for the upcoming year. The County agrees to implement maintenance improvements similar to other County roads (i.e. fill cracks and chip seal). The operator agrees to implement the improvements beyond the typical County improvements in a timeframe set forth by the Public Works Department. The operator does not assume the liability for the roadway, except for cases where the operator has not fulfilled its maintenance obligations. If a subsequent mining operation utilizes a road previously required to be improved pursuant to this subsection, then the subsequent operator shall be responsible for compliance with the agreements and requirements of the previous operator. (§ 1, Ord. 1190, eff. September 5, 1996)	Consistent. The Applicant would assume joint pavement maintenance responsibility with the County on County Road 87 from the project access road to County Road 19, and on County Road 19 from County Road 87 to I-505, for the permit period (see Mitigation Measures 4.13-1 and 4.13-2).
10-4.410 Cultural Resources	(a) All resource records shall be checked for the presence of and the potential for prehistoric and historic sites. Damaging effects on cultural resources shall be avoided whenever possible. If avoidance is not feasible, the importance of the site shall be evaluated by a qualified professional prior to the commencement of mining operations. If a cultural resource is determined not to be important, both the resource and the effect on it shall be reported to the Agency, and the resource need not be considered further. If avoidance of an important cultural resource is not feasible, a mitigation plan shall be prepared and implemented. The mitigation plan shall explain the importance of the resource, describe the proposed approach to mitigate destruction or damage to the site, and demonstrate how the proposed mitigation would serve the public interest. (b) If human skeletal remains are encountered during excavation, all work within seventy-five (75') feet shall immediately stop, and the County Coroner shall be notified within twenty-four (24) hours. If the remains are of Native American origin, the appropriate Native American community identified by the Native American Heritage Commission shall be contacted, and an agreement for treating or disposing of, with appropriate dignity, the remains and associated grave goods shall be developed. If any cultural resources, such as chipped or ground stone, historic debris, building foundations, or paleontological materials are encountered during excavation, then all work within seventy-five (75') feet shall immediately stop and the Director shall be notified at once. Any cultural resources found on the site shall be recorded by a qualified archaeologist and the information shall be submitted to the Agency. (§ 1, Ord. 1190, eff. September 5, 1996)	(a), (b) Consistent. This EIR analyzes potential prehistoric and historic sites. The County will require conformity with codes and conditions through inspections and enforcement during implementation.

Table 4.11-6 Off-Channel Surface Mining Ordinance

Section	Regulation Summary	Project Compliance
10-4.412 Dewatering Prohibition	Under no circumstances, shall any off-channel excavation use dewatering as a part of their surface mining operations. (§ 1, Ord. 1190, eff. September 5, 1996)	Consistent. The project does not propose dewatering as part of its surface mining operations.
10-4.413 Drainage	Surface water shall be prevented from entering mined areas, through either perimeter berms or ditches and grading. Appropriate erosion control measures shall be incorporated into all surface water drainage systems. Natural and stormwater drainage systems shall be designed so as to prevent flooding on surrounding properties and County rights-of-way. Storm water runoff from mining areas shall be conveyed to lowered areas (detention basins) to provide detention of runoff generated during a twenty (20) year, one-hour storm event. All drainage conveyance channels or pipes (including spillways for detention areas) shall be designed to ensure positive drainage and minimize erosion. The drainage conveyance system and storm water detention areas shall be designed and maintained in accordance with Best Management Practices for the reduction of pollutants associated with runoff from mined areas. The design and maintenance procedures shall be documented in the Storm Water Pollution Prevention Plan required for mining operations. The drainage system shall be inspected annually by a Registered Civil Engineer, Registered Geologist, or Certified Erosion and Sediment Control Specialist to ensure that the drainage system is functioning effectively and that adverse erosion and sedimentation are not occurring. The annual inspection shall be documented in the Annual Mining and Reclamation Report. (§ 1, Ord. 1190, eff. September 5, 1996)	Consistent. The project proposes perimeter berms and would implement a SWPPP.
10-4.414 Dust Control	The following measures shall be implemented in order to control fugitive dust: (a) All stockpiled soils shall be enclosed, covered, or adequately watered to keep soil moist at all times. Inactive soil stockpiles should be vegetated or adequately watered to create an erosion-resistant outer crust. (b) During operating hours, all disturbed soil and unpaved roads shall be adequately watered to keep soil moist. (c) All disturbed but inactive portions of the site shall either be seeded or watered until vegetation is grown or shall be stabilized using methods such as chemical soil binders, jute netting, or other Yolo-Solano Air Quality Management District approved methods. (§ 1, Ord. 1190, eff. September 5, 1996).	(a), (b), (c) Consistent. Implementation of Mitigation Measure 4.4-2a would control fugitive dust during project construction and operations.
10-4.415 Equipment Maintenance	All internal combustion engine driven equipment and vehicles shall be kept tuned according to the manufacturer's specifications and properly maintained to minimize the leakage of oils and fuel. No vehicles or equipment shall be left idling for a period of longer than ten (10) minutes. Fueling and maintenance activities of heavy equipment (except draglines and floating suction dredges) are prohibited within 100 feet of open bodies of water during mining and reclamation. All Storm Water Pollution Prevention Plans shall include provisions for releases of fuels during fueling activities for draglines and floating suction dredges. (§ 1, Ord. 1190, eff. September 5, 1996)	Consistent. The project would be required to conform with all of the provisions of the ICMMO as a requirements for the Mining Permit.

Table 4.11-6 Off-Channel Surface Mining Ordinance

Section	Regulation Summary	Project Compliance
10-4.416 Flood Protection	All of channel surface mining operations shall be provided with a minimum 100-year flood protection. Off-channel excavations shall be designed to minimize the possibility of levee breaching and/or pit capture. Flood protection shall be provided from flooding associated with overtopping of the alluvial separators or levees along Cache Creek and all tributaries and drainage channels (including, but not limited to, Willow Slough and Lamb Valley Slough). The flood protection upgrades shall be designed and constructed to provide the necessary 100-year protection without creating a net increase of downstream flooding elevations. Downstream flooding could be increased if floodplain storage areas were removed from the drainage system by constructing levees in areas where they did not exist before (or raising levees that are overtopped in floods up to the 100-year event). Alternative flood management design systems (potentially using detention basins, infiltration galleries, and/or floodplain storage in noncritical areas) shall be required as a condition of project approval. New development (such as buildings, levees, or dikes) located within the floodplain shall conform to all applicable requirements of the Yolo County Flood Ordinance, the Federal Emergency Management Agency (FEMA), and the State Reclamation Board. (§ 1, Ord. 1190, eff. September 5, 1996)	Consistent. The project proposes bank stabilization activities that would provide the necessary 100-year protection without creating a net increase of downstream flooding elevations (Cunningham Engineering 2007).
10-4.417 Groundwater Monitoring Programs	All surface mining operations that propose off-channel excavations extending below the groundwater level shall develop and maintain a groundwater monitoring program consisting of two (2) components: water level measurements and water quality testing. A groundwater level monitoring program shall be initiated at least six (6) months prior to the removal of overburden. At a minimum, the groundwater level monitoring program shall consist of three (3) monitoring wells, with at least one well upgradient of the wet pit and one well downgradient of the wet pit. Monitoring programs for proposed mining areas exceeding 100 acres (total proposed mining area over the life of the project) shall include one additional well for each 100 acres of wet pit mining.	Consistent. Currently, the Applicant has five monitoring wells around the site. As part of the initial hydrologic characterization of the site, the Applicant performed groundwater measurements and groundwater quality testing. The analysis of the results is described in detail in Section 4.10, Hydrology and Water Quality.
10-4.418 Habitat Management Plan Compliance	All surface mining operations shall complement the preservation and enhancement measures in the Yolo County Habitat Conservation Plan (HCP). Mining operators with lands designated as having a moderate to high potential for use as mitigation areas in the HCP shall be encouraged to participate in the Developer HCP Participation Options, including use of lands as mitigation sites. (§ 1, Ord. 1190, eff. September 5, 1996)	Not applicable. The Yolo County HCP remains in draft form and is not an adopted document. This EIR addresses the potential for biological impacts from the proposed project in Section 4.5.
10-4.419 Haul Roads	Those portions of designated truck haul routes that include County-maintained roads shall be posted as such, in accordance with the Public Works Department, to facilitate law enforcement and public safety. Private truck haul routes or conveyors shall be used to transport material within the mining site, in order to reduce impacts to public roads. (§ 1, Ord. 1190, eff. September 5, 1996)	Consistent. The existing haul routes are already posted as such. The proposal would involve both.

Table 4.11-6 Off-Channel Surface Mining Ordinance

Section	Regulation Summary	Project Compliance
10-4.420 Lighting	All lighting shall be arranged and controlled so as not to illuminate public rights-of-way or adjacent properties. (§ 1, Ord. 1190, eff. September 5, 1996)	Consistent. The project would introduce new permanent sources of lighting and glare from the rock processing plant and other improvements. Per this code, all lighting would be arranged and controlled so as not to illuminate public rights-of-way or adjacent properties. Standard conditions of approval for Yolo County require lighting to be shielded and/or screened from causing glare on off-site properties and roadways.
10-4.421 Noise: General Standard	From 6:00 a.m. to 6:00 p.m., noise levels shall not exceed an average noise level equivalent (Leq) of eighty (80) decibels (dBA) measured at the property boundaries of the site. However, noise levels shall not exceed an average noise level equivalent (Leq) of sixty (60) decibels (dbA) for any nearby off-site residences or other noise-sensitive land uses. From 6:00 p.m. to 6:00 a.m., noise levels shall not exceed an average noise level equivalent (Leq) of sixty-five (65) decibels (dBA) measured at the property boundaries of the site. At no time shall noise levels exceed a community noise equivalent (CNEL) of sixty (60) decibels (dBA) for any existing residence or other noise-sensitive land use.	Consistent. The project would not exceed an average daytime Leq of 80 dBA and nighttime Leq of 65 dBA at the project boundaries. The project would not exceed a CNEL of 60 dBA for any existing residence or other noise-sensitive land use.
10-4.422 Noise: Sonic Safety Devices	If mining occurs within 1500 feet of residences, equipment used during nighttime activities shall be equipped with nonsonic warning devices consistent with the California Office of Safety Hazard Administration (Cal OSHA) regulations, which may include fencing of the area to avoid pedestrian traffic, adequate lighting of the area, and placing an observer in clear view of the equipment operator to direct backing operations. Prior to commencement of operations without sonic warning devices, operators shall file a variance request with the California OSHA Standards Board showing that the proposed operation would provide equivalent safety to adopted safety procedures, including sonic devices. (§ 1, Ord. 1190, eff. September 5, 1996)	Consistent. A residence is located approximately 1,100 feet north of the northeastern boundary Phase 1B mining area. The project proposes that a variance would be filed with the Cal OSHA Standards Board showing that the proposed project would provide equivalent safety procedures. Such variances have been granted for mining operations along Cache Creek in the past. If variance is granted, the project would be consistent. If variance is not granted, the operator would be prohibited from nighttime activities per the regulation.
10-4.423 Noise: Traffic	Operators shall provide acoustical analysis for future truck and traffic noise associated with the individual operations along County roadways identified as experiencing significant impacts due to increased traffic noise. The study shall identify noise levels at adjacent noise-sensitive receptors and ways to control the noise to the "normally acceptable" goal of a CNEL of sixty (60) dB and reduce the increase over existing conditions to five (5) dB or less. Typical measures that can be employed include the construction of noise barriers (wood or masonry), earthen berms, or rerouting of truck traffic. (§ 1, Ord. 1190, eff. September 5, 1996)	Consistent. The maximum increase in traffic noise within 50 feet of the centerlines of the roads relative to existing conditions would be 1.9 dBA. Although the levels would increase, there are no sensitive receptors that would be expected to be subjected to noise increases in excess of the County-noise standards (greater than 50 dBA).
10-4.424 Other Agency Approvals	Operators shall obtain any and all permits and approvals required by other agencies having jurisdiction over the proposed mining operations and shall provide copies to the County. (§ 1, Ord. 1190, eff. September 5, 1996)	Consistent. The Applicant would obtain all permits and approvals as necessary, and provide copies to the County.

Table 4.11-6 Off-Channel Surface Mining Ordinance

Section	Regulation Summary	Project Compliance
10-4.425 Parking	All operations shall provide sufficient off-street parking to accommodate customers, employees, and all mining equipment. (§ 1, Ord. 1190, eff. September 5, 1996)	Consistent. The project proposes to provide off-street parking for all customers, employees, and mining equipment.
10-4.426 Permit Life	Surface mining permits and permits for aggregate processing facilities shall be approved for a maximum of thirty (30) years. Extensions of the permits, for up to twenty (20) years, may be granted, subject to further environmental review and discretionary approval by the County. All surface mining permits shall be subject to annual reporting requirements, as well as review by the County every ten (10) years, to account for changing regulatory requirements. (§ 1, Ord. 1190, eff. September 5, 1996)	Consistent. The Applicant is requesting a 30-year permit. The Applicant would submit annual reports as required.
10-4.427 Protection of Nearby Drinking Water Wells	If any off-channel excavation proposes to extend below the level of seasonal high groundwater, then six (6) months prior to the commencement of excavation below the average high groundwater level, the operator shall identify and locate all off-site municipal wells within 1,000 feet and all domestic wells within 500 feet of the proposed wet pit mining boundary. If active wells are identified, well characteristics (pumping rate, depth, and locations of screens) shall be determined. If wells are not located within 1,000 feet, the pre-mining impact evaluation shall be considered complete.	Consistent. No domestic or municipal wells are sited within 500 or 1,000 feet of the wet-pit mining boundary, respectively.
10-4.428 Sanitary Facilities	At least one toilet shall be provided for each off-channel mining operation. Chemical toilets shall be properly maintained and serviced regularly. Permanent toilets shall be properly engineered and the design approved by the Yolo County Building Official and the Environmental Health Department prior to installation. All on-site water storage facilities shall be labeled "potable" or "nonpotable". (§ 1, Ord. 1190, eff. September 5, 1996)	Consistent. The project proposes to provide portable toilets for employees and visitors to the site.
10-4.429 Setbacks	All off-channel surface mining operations shall comply with the following setbacks: (a) New processing plants and material stockpiles shall be located a minimum of 1,000 feet from public rights-of-way, public recreation areas, and/or off-site residences, unless alternate measures to reduce potential noise, dust, and aesthetic impacts are developed and implemented. (b) Soil stockpiles shall be located a minimum of 500 feet from public rights-of-way, public recreation areas, and off-site residences, unless alternate measures to reduce potential dust and aesthetic impacts are developed and implemented.	(a) Consistent. The proposed plant and material stockpiles are more than 1,000 feet away from these points. (b) Consistent. The proposed soil stockpiles are more than 500 feet away from these points.

Table 4.11-6 Off-Channel Surface Mining Ordinance

Section	Regulation Summary	Project Compliance
	(c) Off-channel excavations shall maintain a minimum 1,000 foot setback from public rights-of-way and adjacent property lines off-site residences, unless a landscaped buffer is provided or site-specific characteristics reduce potential aesthetic impacts. Where landscaped buffers are proposed, the setback for off-channel excavations may be reduced to a minimum of fifty (50') feet from either the property line or the adjoining right-of-way, whichever is greater. Where mining occurs within 1,000 feet of a public right-of-way, operators shall phase mining such that no more than fifty (50) acres of the area that lies within 1,000 feet of the right-of-way would be actively disturbed at any time, except where operations are adequately screened from public view. Where adequate screening exists in the form of mature vegetation and/or constructed berms that effectively block public views, the area of active disturbance within 1,000 feet of the right-of-way shall not exceed the area that is screened by more than fifty (50) acres at any one time. Actively disturbed areas are defined as those on which mining operations of any kind, or the implementation of reclamation such as grading, seeding, or installation of plant material are taking place.	(c) Consistent. The project proposes new mining areas within 500 feet of County Road 87; however, the proposed landscaping and berms would adequately screen these areas. Because the entire project area would be visually screened from public views, the 50-acre mining restriction would not apply.
	(d) Proposed off-channel excavations located within the streamway influence boundary shall be set back a minimum of 700 feet from the existing channel bank, unless it is demonstrated that a smaller distance will not adversely affect channel stability. The evaluation of the potential for adverse effects of bank erosion or failure of the land separating pits located less than 700 feet from the active channel shall address, at a minimum, the following: (1) The 200 foot setback area shall not include portions of the former historic active floodplain or formerly mined lands separated from the active channel by levees or unmined areas less than 200 feet wide (measured perpendicular to the active channel). (2) Identification of the former historic positions of the Cache Creek channels as delineated in the CCRMP Technical Studies, and determination if the proposed project is located within the limits of the historic channel. (3) Description of current channel hydraulic conditions (based on existing or site-specific hydraulic models) for the Cache Creek channel adjacent to the site and extending not less than 1,000 feet upstream and downstream of the site. (4) Determination of the erosion potential of the stream bank adjacent to the site made on the basis of stream flow velocity and estimated shear stress on bank materials during 100-year flood flows and historic patterns of erosion. (5) Analytical slope stability analysis in conformance with Sections 10-4.426 and 10-5.517 of this title. The analysis of the slopes separating the mining area from the creek channel shall include evaluation of stability conditions during 100-year flood flows in the channel.	(d) Consistent. The proposed streambank stabilization project is designed to provide a smooth transition from the wider channel width upstream to the narrow width defined by the Esparto Bridge abutments. The proposed streambank stabilization project is identified in the CCRMP as a transition zone project. The area behind the berm will be backfilled to an elevation equal to the berm height, which is designed to the 100-year flood elevation. The narrowest portion of the berm and fill is approximately 250 feet, and increases to approximately 450 feet at its widest location. Moreover, there is a 20 foot wide existing haul road between the fill area and the proposed mining pit providing additional protection. The rip-rap toe, the engineered berm plus backfill will function to prevent Cache Creek from eroding the area between the creek and the mining pit. Therefore, the proposed project is consistent with the CCRMP and the Yolo County Off-Channel Mining Ordinance, and has provided sufficient protection against the creek eroding the embankment and capturing the mining pit area.

Table 4.11-6 Off-Channel Surface Mining Ordinance

Section	Regulation Summary	Project Compliance
	(6) Future proposed bank stabilization designs, if recommended, shall not conflict with channel design recommendations of the Cache Creek Resource Management Plan unless approved by the Technical Advisory Committee.	
	(e) Off-channel excavations shall be set back a minimum of twenty-five (25) feet from riparian vegetation.	(e) Consistent. There is no riparian vegetation on the off-channel area of the site.
	(f) Recreational facilities shall be located a minimum of 150 feet from private dwellings, with a landscaped buffer provided to reduce noise and maintain privacy, unless the dwelling is proposed to be an integral component of the recreational facility.	(f) Consistent. No recreational activities are proposed as part of this project.
	(g) No mining activities shall occur within 2,000 feet of the community boundaries of Capay, Esparto, Madison, Woodland, and/or Yolo. This setback may be reduced by up to 500 feet when existing mature vegetation, proposed landscape buffers of a sufficient height and density to create a visual buffer (consisting of native species and fence-row habitat appropriate to the area), or other site-specific characteristics reduce potential incompatibilities between urban land uses and mining. Commercial mining shall not take place east of County Road 96. (§ 1, Ord. 1190, eff. September 5, 1996)	(g) Consistent. The project would be approximately 1 mile from Esparto.
10-4.430 Site maintenance	During operations, the site shall be kept free of debris and maintained in a neat and orderly manner so as not to create any hazardous or unsightly conditions. All overburden shall be stockpiled and all stumps, brush, or other debris resulting from excavation and/or processing shall be properly disposed. (§ 1, Ord. 1190, eff. September 5, 1996)	Consistent. The stockpiles of topsoil, overburden and aggregate would be managed in compliance with these requirements.
10-4.431 Slopes	Except where benches are used, all banks above groundwater level shall be sloped no steeper than 2:1 (horizontal:vertical). Proposed steeper slopes shall be evaluated by a slope stability study, prepared by a Registered Civil engineer. Slopes below the groundwater level shall be no steeper than 1:1 (horizontal:vertical). Slopes located five (5') feet or less below the summer low groundwater level shall not be steeper than 2:1 (horizontal:vertical). (§ 1, Ord. 1190, eff. September 5, 1996)	Consistent. The mining plan proposes that the slopes of the margins of the mining area would generally be excavated to maintain a maximum gradient of 2:1 for depths above the groundwater table and 5 feet below the expected low groundwater.
10-4.432 Soil removal	Soil shall be cut in maximum depths in order to minimize traffic and limit compaction. The handling and transportation of soil shall be minimized. All handling of topsoil shall be accomplished when the soil is dry in order to avoid undue compaction. (§ 1, Ord. 1190, eff. September 5, 1996)	Consistent. The stockpiles of topsoil, overburden and aggregate would be managed in compliance with these requirements.

Table 4.11-6 Off-Channel Surface Mining Ordinance

Section	Regulation Summary	Project Compliance
10-4.433 Soil stockpiles	Topsoil, subsoil, and subgrade materials in stockpiles shall not exceed forty (40') feet in height, with slopes no steeper than 2:1 (horizontal:vertical). Stockpiles, other than aggregate stockpiles, shall be seeded with a vegetative cover to prevent erosion and leaching. The use of topsoil for purposes other than reclamation shall not be allowed without the prior approval of the Director. Slopes on stockpiled soils shall be graded to a 2:1 (horizontal:vertical) slope for long-term storage to prevent use by bank swallows. At no time during the active breeding season (May 1 through July 31) shall slopes on stockpiles exceed a slope of 1:1, even on a temporary basis. Stockpiles shall be graded to a minimum 1:1 slope at the end of each workday where stockpiles have been disturbed during the active breeding season. (§ 1, Ord. 1190, eff. September 5, 1996)	Consistent. The project proposes to manage stockpiles of topsoil, overburden, and aggregate in compliance with these requirements.
10-4.434 Technical Report Recommendations	The recommendations contained within each technical report submitted with a surface mining permit application shall be consistent with the OCMP and with all other technical reports submitted. The recommendations of all technical reports shall be implemented. (§ 1, Ord. 1190, eff. September 5, 1996)	Consistent. The submitted application package includes all required technical reports, such as geotechnical analyses, hydrologic characterization of the site, noise analysis, biological inventory, cultural resources inventory, site plans and a conjunctive use, post-mining reclamation plan, and how they would be implemented.
10-4.436 Vegetation Protection	Existing vegetation and habitat to be retained shall be enclosed by temporary fencing to restrict access, protect against damage and/or provide buffers to reduce the impact of dust. Temporary fencing shall be a minimum of four (4') feet high. The disturbance of riparian or oak woodland vegetation, including identified off-channel vegetation. Replacement habitat and plantings shall be established where complete avoidance is not possible, according to a habitat restoration plan prepared by a qualified biologist, consistent with the goals of this plan. (§ 1, Ord. 1190, eff. September 5, 1996)	Consistent. Implementation of Mitigation Measure 4.5-2 would make the project consistent with this code section.
10-4.437 Wastewater Discharge	No wastewater shall be directly discharged to Cache Creek. Sediment fines generated by aggregate processing shall either be used for agricultural soil enhancement, habitat restoration sites, or shall be placed in settling ponds, designed and operated in accordance with all applicable regulations, and used for backfill materials in off-channel excavations. Agricultural tailwater shall be diverted to catchment basins prior to its release to the creek. (§ 1, Ord. 1190, eff. September 5, 1996)	Consistent. The project would treat wash water from aggregate processing by allowing the sediment contained in the water to settle in on-site settling ponds. The sediment retained in the ponds would be used on site for the reclamation components (i.e., partial filling of excavation areas).
10-4.438 Watercraft	Only motorized dredges and draglines shall be allowed on the wet pit lakes. All other fuel-powered (gasoline or diesel) watercraft shall not be used on the wet pit lakes. Electric-powered or non-motorized boats shall be permissible. (§ 1, Ord. 1190, eff. September 5, 1996)	Consistent. The project does not propose the use of motorized watercraft (other than dredges).
10-4.439 Wetlands	Existing jurisdictional wetlands shall be retained to the extent possible. Replacement wetlands shall be provided where complete avoidance is not possible according to a habitat restoration plan prepared by a qualified wetland specialist and approved by jurisdictional agencies, ensuring no net loss of wetland acreage or habitat value. (§ 1, Ord. 1190, eff. September 5, 1996)	Consistent. The project would not impact state or federal jurisdictional waters or wetlands.

Table 4.11-6 Off-Channel Surface Mining Ordinance

Section	Regulation Summary	Project Compliance
10-4.440 Wildlife Habitat	Avoid disturbance to important wildlife habitat features such as nest trees, colonial breeding locations, elderberry host plants for Valley Elderberry Longhorn Beetle, and essential cover associated with riparian forest and oak woodland habitat. This shall include sensitive siting of haul roads, trails, and recreational facilities away from these features. Essential habitat for special-status species shall be protected and enhanced, or replaced as a part of mitigation plans prepared by a qualified biologist. (§ 1, Ord. 1190, eff. September 5, 1996)	Consistent. The project would not impact state or federal jurisdictional waters or wetlands.
10-4.501 Zoning Requirements	Off-channel surface mining operations shall only be permitted within the Special Sand and Gravel Combining (S-G) Zone defined in Article 23.1 of Chapter 2 of Title 8 of this Code. (§ 1, Ord. 1190, eff. September 5, 1996)	Consistent. The project is requesting a rezoning t from Agricultural Preserve with Sand and Gravel Reserve Combining Zone (A-P/SGR) to Agricultural Preserve with Sand and Gravel Combining Zone (A-P/S-G) and from General Agriculture with Sand and Gravel Reserve Combining Zone (A-1/SGR) to General Agricultural with Sand and Gravel Combining Zone (A-1/S-G). If the rezoning is granted, the project would be consistent.

Table 4.11-7 Surface Mining Reclamation Ordinance

Section	Regulation Summary	Project Compliance*
10-5.501 Reclamation standards: Scope	The general standard for the reclamation of mined lands is to restore the site to a usable condition which is readily adaptable for alternate land uses consistent with the policies of the County expressed in Article 1 of this chapter and in the General Plan, specific plans, and zoning laws.	Consistent. The Applicant proposes a phased reclamation plan that would restore the site to a usable condition consistent with the County's ordinance and General Plan.
10-5.502 Aesthetics	Means of improving the appearance of the landscape after mining has been completed shall be assessed based on site-specific visual characteristics, site lines, and view corridors. The use and placement of berms, vegetative screens, special plant materials, grading slopes, and contouring the sides and top surfaces of modified landforms to mimic surrounding landforms, or other measures, shall be incorporated into the mine reclamation plan as appropriate. (§ 1, Ord. 1191, eff. September 5, 1996)	Consistent. The Applicant proposes to vegetate the reclaimed areas with a mix of native grasses and forbs and planting the margins of the reclaimed surface with scattered clusters of oak woodland trees and shrubs.
10-5.503 Backfilled Excavations: Groundwater Flow Impacts	The area of backfilled off-channel excavations extending below the groundwater table shall be minimized in order to reduce changes to groundwater levels and flow. Backfilled pits shall be oriented with regard to the direction of groundwater flow to prevent localized obstructions. If a backfilled off-channel excavation is proposed to penetrate either fifty (50') feet or one-half (1/2) into the saturated thickness of the shallow aquifer, then at least six (6) months prior to the commencement of excavation below the average high groundwater level, the applicant shall demonstrate in a manner consistent with the Technical Studies that the pit design will not adversely affect active off-site wells within 1,000 feet of the proposed pit boundary. If the application includes a series of backfilled pits, then the applicant shall also demonstrate that the cumulative effects of the multiple backfilled pits will not adversely affect groundwater flow, if there are any active off-site wells within 1,000 feet of the pit boundaries. The applicant shall demonstrate, using MODFLOW (or a similar model of equal capability and proven reliability, as approved by the Yolo County Community Development Director), that the proposed pit design would not adversely impact active off-site wells within 1,000 feet of the proposed pit boundary or result in well failure. Average, historic low groundwater levels, which represent the condition of maximum threat to water levels in the subject well, shall be used for this simulation. If an adverse impact is identified by the MODFLOW (or other approved model) simulation, the mining and reclamation plan shall be modified or the applicant shall submit a written agreement that the well owner has agreed to relocate or redesign the well, or accept the potential impact (at no expense to the County). Site-specific aquifer testing shall be conducted, if needed, to determine aquifer properties for the required modeling. (§ 1, Ord. 1191, eff. September 5, 1996)	Consistent. Over the life of the mining operation, wash fines would be directed to five settling ponds. In its current configuration, Settling Pond B, Phase 1A, which would be backfilled with wash fines, does not penetrate 50 feet into the aquifer. All other settling ponds penetrate an average of 40 feet below highest groundwater level. The resulting hydrologic characteristics within the reclaimed areas (former settling ponds) are expected to be measurably different than the original, coarse alluvial material. Change in characteristics within the filled areas are likely to include a lower infiltration rate and reduced transmissivity resulting in more stable groundwater elevations within the filled areas. The overall effect on the upper aquifer of replacing coarse material with fine material in is expected to be negligible, based upon the shallow depth of fill, as well as the small area of fill. Further, within Fluvial Formations, point bar deposits are characterized by lenses of fine material found within coarse bedding. It is expected that filling of the detention basins with wash fines would result in deposits with very similar characteristics to natural facies changes found within typical fluvial deposits. No production wells are sited within 1,000 feet of the proposed backfilled areas.

Table 4.11-7 Surface Mining Reclamation Ordinance

Section	Regulation Summary	Project Compliance*
10-5.504 Backfilled Excavations: Improvements	Improvements, including the construction of buildings, roadways, or other public facilities proposed for construction in reclaimed mining pits shall require a geotechnical investigation of the stability of fills conducted by a Licensed Geotechnical Engineer or a Registered Civil Engineer. A report on the results and recommendations of the investigation shall be submitted to the Yolo County Community Development Agency prior to the issuance of building permits. The recommendations of the geotechnical investigations shall be fully implemented by the applicant. (§ 1, Ord. 1191, eff. September 5, 1996)	Consistent. The Applicant has submitted a site-specific geotechnical report to the County. Applicant proposes no improvements to backfilled areas including construction of buildings, roads, etc. Any construction on backfilled areas in the future would undergo geotechnical investigation and recommendations would be implemented prior to construction.
10-5.505 Backfilled Excavations: Inspections	Backfilled mining areas and slopes shall be inspected by the Yolo County Community Development Agency following strong seismic shaking events. Observable damage shall be reported to the landowner. If the YCCDA determines that the damage requires repair to meet the intended use of the reclaimed land, the landowner shall perform the required repairs. (§ 1, Ord. 1191, eff. September 5, 1996)	Consistent. This regulation would apply to the project after a strong seismic shaking event has occurred. The Applicant would perform required repair.
10-5.506 Bank Stabilization Maintenance	Financial assurances for off-channel mining operations which include mining within 700 feet of the active channel of Cache Creek shall include adequate funding for maintenance during the mining and reclamation period of any bank stabilization features approved for the mining permit. Maintenance of the bank stabilization features following the completion of reclamation shall be the responsibility of the property owners under the Cache Creek Resource Management Plan. The condition of flood protection structures and the integrity of the land within the approved setback zone separating the mining areas and the stream channel shall be inspected annually by a Registered Civil Engineer and reported to the Yolo County Community Development Agency. The annual report shall include recommendations for remedial action for identified erosion problems. Following reclamation, the YCCDA shall inspect the land separating the mining areas and creek channel every five (5) years. Observable damage shall be reported to the property owner. If the YCCDA determines that damage requires repair to meet the intended performance of the separator, the property owner shall perform the required repairs. (§ 1, Ord. 1191, eff. September 5, 1996)	Consistent. Included in the Reclamation Plan is a financial Assurance Estimate, submitted by Applicant to demonstrate adequate funding for maintenance during mining and reclamation. As part of the process, the Applicant would have the proposed section of stream channel inspected annually by either a registered civil engineer. If, upon inspection, erosional problems are identified, and the YCCDA determines repairs should be required, then the Applicant (or the current property owner) would repair the stream bank section.
10-5.507 Drainage	Upon the completion of operations, grading and revegetation shall minimize erosion and convey storm water runoff from reclaimed mining areas to natural outlets or interior basins. The condition of the land shall allow sufficient drainage to prevent water pockets or undue erosion. Natural and stormwater drainage shall be designed so as to prevent flooding on surrounding properties and County rights-of-way. Drainage and detention facilities within the proposed mining areas and vicinity shall be designed to prevent discharges to the wet pits and surface water conveyances (i.e., creeks and sloughs) from the twenty (20) year/one-hour storm or less. For events greater than the twenty (20) year/one-hour storm, runoff from around the perimeter of the mining areas shall be directed into surface water conveyances. Runoff from within the lowered mining area shall be directed away from wet pits to detention/infiltration areas. Drainage plans shall not rely solely	Consistent. Drainage plans designed to comply with this requirement are included as part of the Reclamation Plan. Grading of the finished areas is planned to direct runoff from reclaimed areas to interior basins in a manner that would prevent unintended ponding of water or erosion. Only interior pit slopes surrounding the open water habitat would drain toward the open water habitat. Flooding from stormwater runoff is not anticipated to be a problem, as runoff would be directed toward interior basins.

Table 4.11-7 Surface Mining Reclamation Ordinance

Section	Regulation Summary	Project Compliance*
	on ditches and berms to direct runoff away from the wet pit. Without proper maintenance, berms and ditches may deteriorate with time and become ineffective. Drainage plans shall emphasize the grading of disturbed areas that results in broad gently slopes that drain away from the pits. Grading plans shall be reviewed by the County to evaluate compliance with drainage plan objectives prior to project approval. In addition, a restriction shall be recorded on the deed that requires berms and ditches to be permanently maintained in a condition consistent with the final approval. The deed restriction shall require an inspection easement which allows County staff or other authorized personnel access for the inspection of berms and ditches. If the County determines that evidence of damage to those facilities exist, the County shall require that the owner have an inspection report for the property prepared by a Registered Geologist or Registered Civil Engineer. The inspection report including recommendations for corrective action, if needed, shall be submitted to the Yolo County Community Development Agency. The property owner shall be required to implement recommended corrective action, if any. (§ 1, Ord. 1191, eff. September 5, 1996)	
10-5.508 Erosion Control	The grading of final slopes, the replacement of soil, and associated erosion control measures shall take place prior to November 1 in areas where mining has been completed. To minimize erosion, the finish grading of mining pit slopes above the average seasonal high groundwater level, with the exception of the location of designated haul roads, shall be performed as soon as practical after the mining of overburden and unsaturated aggregate resources has been completed. A drought-tolerant, weed-free mix of native and nonnative grass species shall be established on slopes prior to November 1 or alternate erosion control (mulch or netting) shall be placed on exposed soil on the slopes prior to this date. Phasing of mining to minimize the length of exposed mining slopes during the rainy season is encouraged. (§ 1, Ord. 1191, eff. September 5, 1996)	Consistent. To comply with this regulation, the Applicant would grade soil stockpiles to a 2:1 or gentler slope, and revegetated stockpiled soils with native vegetation until the soils would be replaced during reclamation. Seeding of the stockpiles would take place prior to November 1 whenever feasible. As well, the mining and reclamation are phased to limit the amount and duration of exposure of stockpiles and pit slopes.
10-5.509 Fence Row Habitat	Where fence row or field margin habitat previously existed, reestablish similar habitat as part of reclamation to agricultural use to replace and improve the wildlife habitat value of agricultural lands, allowing for the reestablishment of scattered native trees, shrubs, and ground covers along the margins of reclaimed fields. Reestablished habitat can be located in areas other than where it occurred originally. Restoration plans shall specify ultimate fence row or field margin locations, identify planting densities for trees and shrubs, and include provisions for monitoring and maintenance to ensure establishment. (§ 1, Ord. 1191, eff. September 5, 1996)	Consistent. The Applicant proposes to vegetate the reclaimed areas with a mix of native grasses and forbs and planting the margins of the reclaimed surface with scattered clusters of oak woodland trees and shrubs, as described in the Habitat Restoration and Landscape Visual Screening Plan (Appendix C).

Table 4.11-7 Surface Mining Reclamation Ordinance

Section	Regulation Summary	Project Compliance*
10-5.510 Fencing	Open wet pits shall be fenced with a forty-two (42") inch minimum, four (4) strand barbed wire fence or the equivalent (e.g., welded square "hog" fencing), prior to the commencement of excavation, during excavation, and during reclamation. Fencing may enclose the property of which mining is a part, the mining site, or both. In addition, signs shall be installed at the project site boundaries and access road, indicating that the excavation area is restricted. Additional security (e.g., gates with protected locks and wing fences to prevent drive-arounds) shall be provided at all vehicular routes. The fencing and gates shall be maintained throughout the mining and reclamation period after completion of reclamation. A requirement shall be recorded on the deed of the property which requires the landowner to maintain fences. (§ 1, Ord. 1191, eff. September 5, 1996)	Consistent. Fencing around open wet pits would be placed according to code and maintained throughout the mining and reclamation activities; this requirement would be recorded on the deed of the property.
10-5.511 Field Drainage	Reclaimed agricultural surfaces shall be graded to provide adequate field gradients to allow surface/furrow irrigation of crops and allow for adequate storm water drainage. (§ 1, Ord. 1191, eff. September 5, 1996)	Consistent. This regulation would apply to the 74-acre portion of the project site proposed to be reclaimed to agriculture. The reclamation plans for this area indicate the design reclaimed agricultural fields (with 0.1 to 0.2 percent slopes) would be consistent with this code.
10-5.512 Field Releveling	The operator shall retain a Licensed Land Surveyor or Registered Civil Engineer to resurvey any areas reclaimed to agricultural usage after the last two (2) crop seasons have been completed. Any areas where settling has occurred shall be releveled to the field grade specified in the approved reclamation plan. (§ 1, Ord. 1191, eff. September 5, 1996)	Consistent. This regulation would apply to a portion of the project site after reclamation and the application commits to resurveying in compliance with this requirement.
10-5.513 Floodplain Development	New development proposed within the reclamation plan (such as buildings, levees, or dikes) located within the floodplain shall conform to all applicable requirements of the Yolo County Flood Ordinance, the FEMA, and the State Reclamation Board. (§ 1, Ord. 1191, eff. September 5, 1996)	Consistent. No structures are proposed to be located within the 100-year flood zones designated by FEMA (2002) or any other public entity within or adjacent to the project site.
10-5.514 Habitat Management Plan Compliance	All reclamation plans shall complement the preservation and enhancement measures in the Yolo County Habitat Conservation Plan (HCP). Mining operators with lands designated as having a moderate to high potential for use as mitigation areas in the HCP shall be encouraged to participate in the Developer HCP Participation Options, including use of lands as mitigation sites. (§ 1, Ord. 1191, eff. September 5, 1996)	Not applicable. The Yolo County HCP remains in draft form and is not an adopted document. This EIR addresses the potential for biological impacts from the proposed project in Section 4.5.
10-5.515 Habitat Plan Referral	Proposed habitat restoration or mitigation plans for lands within the OCMP plan area shall be sent to the California Department of Fish and Game, U.S. Fish and Wildlife Service, the U.S. Army Corps of Engineers, and other interested parties for review and comment to ensure that the projects do not conflict with other existing habitat enhancement efforts. (§ 1, Ord. 1191, eff. September 5, 1996)	Consistent. Implementation of Mitigation Measure 4.5-2 would make the project consistent with this code section.

Table 4.11-7 Surface Mining Reclamation Ordinance

Section	Regulation Summary	Project Compliance*
10-5.516 Lowered Elevations for Reclaimed Agricultural Fields	The final distance between lowered surfaces reclaimed to agriculture and the average high groundwater shall not be less than five (5') feet. The average high groundwater level shall be established for each proposed mining area. The degree of groundwater level fluctuation varies with location throughout the basin and within relatively small areas (proposed mining sites). The determination of the average high groundwater level shall be conducted by a Registered Civil Engineer or Certified Hydrogeologist and shall be based on wet season water level elevation data collected at the proposed site or adjacent areas with similar hydrogeological conditions. Water level records prior to 1977 shall not be used since they would reflect conditions prior to the installation of the Indian Valley Dam. The dam caused a significant change in hydrology of the basin and data collected before its installation shall not be used in estimating current average high groundwater levels. The wells shall be adequately distributed throughout the proposed mining site to reflect spatial variation in groundwater levels and fluctuations. (§ 1, Ord. 1191, eff. September 5, 1996)	Consistent. The vertical separation is expected to be 25 feet between the expected high groundwater level and the reclaimed surface.
10-5.517 Mercury Bioaccumulation in Wildlife	Prior to the approval of reclamation of aggregate mining areas to permanent lakes, the County shall commission a sampling and analysis program, to be implemented in one existing wet pit mining area within the OCMP planning area, to evaluate the potential for increased methylmercury production associated with wet pit mining and reclamation of mining areas to permanent lakes. The program shall include the sampling of water and sediments from the bottom of the existing pit and analysis of the samples for organic content; pH; dissolved oxygen content; dissolved carbon content; and total mercury. In addition, samples of predatory fish (preferably largemouth bass) shall be collected and analyzed for mercury and methylmercury content. If the initial sampling indicates either of the following conditions, the County shall perform verification sampling: (a) Average concentrations of total mercury in excess of 0.000012 milligrams per liter (mg/l) in the water; and (b) Average mercury levels in fish samples in excess of 0.5 milligrams per kilogram (mg/kg). If verification sampling indicates exceedance of these mercury criteria, the County shall approve the reclamation of mining areas to permanent lakes only if the average level of mercury in fish collected from the existing mining pits is shown to be equal to or less than ambient (background) mercury levels determined from a representative sample of similar species of fish (of similar size) collected in the Cache Creek channel within the planning area. The determination of the ambient mercury level shall be performed by the County prior to the excavation of any new wet pit mine and at years ten (10), twenty (20) and thirty (30) in the permit time period, and shall be paid for by the mining permit operators on a fair-share basis. The County shall evaluate available data to determine any significant change in ambient concentrations of mercury in fish within the Cache Creek channel.	Consistent. Yolo County has performed a monitoring program (Slotton, Ayers and Reuter 1996) in conformance with the ordinance. The results of the program are evaluated in Section 4.10, Hydrology and Water Quality. Consistent. Yolo County conducted sampling in 1996 to confirm. Consistent. Yolo County conducted sampling in 1996 to confirm. Required continued site-specific monitoring will be performed.

Table 4.11-7 Surface Mining Reclamation Ordinance

Section	Regulation Summary	Project Compliance*
	In the event of approval of reclamation of mined areas to permanent lakes, each mining area to be reclaimed to a permanent lake as part of each approved long-range mining plan shall be evaluated annually by the operator for five (5) years after creation of the lake for conditions that could result in significant methylmercury production. An additional ten (10) years of biennial monitoring shall be performed after reclamation of each lake has been completed. The evaluations shall be conducted by a qualified aquatic biologist or limnologist acceptable to the County and shall include the following analyses:	Consistent. Required site-specific monitoring will be a requirement of approval of the project.
	(c) Lake condition profiling during the period of June through September, including measurements of pH; eH (or redox potential); temperature; dissolved oxygen; and total dissolved carbon.	Consistent. Required site-specific monitoring will be a requirement of approval of the project.
	(d) Collection of a representative sample of fish specimens (including a minimum of five (5) predator fish if available) and analysis of the specimens for mercury content. Sampling and analysis shall be conducted using methodologies which are consistent with the California State Water Resources Control Board Toxic Substances Monitoring Program procedures, or more stringent procedures.	Consistent. Required site-specific monitoring will be a requirement of approval of the project.
	(e) The results of the evaluation shall be summarized in a report and submitted to the County. The report shall include a comparison of the site-specific data to available data on the background concentrations of mercury in fish within the Cache Creek watershed. The County shall be responsible for submitting the data on mercury levels in fish to the California Department of Fish and Game and the Office of Environmental Health Hazard Assessment for a determination of whether a fish advisory should be issued.	Consistent. Site-specific monitoring reporting will be a requirement of approval of the project.
	(f) If a fish advisory is issued, the owner/operator shall be required to post warnings on fences surrounding the mining pit lakes which prohibit fishing in the lakes and describe the fish advisory.	Consistent. Required site-specific monitoring will be a requirement of approval of the project.
	If the average fish specimen mercury content exceeds the statistically verified ambient mercury concentrations for comparable fish species (of similar size) collected within the CCRMP planning area for two (2) consecutive years, wet pit mining on property controlled by the mining operator/owner shall be suspended and the owner/operator shall either:	
	(g) Present a revised reclamation plan to the Yolo County Community Development Agency which provides for filling the reclaimed lake to a level five (5') feet above the average seasonal high groundwater level with a suitable backfill material; or	Consistent. Proposed reclamation surfaces have been determined and designed on the basis of available groundwater data.
	(h) Present a mitigation plan to the Yolo County Community Development Agency which provides a feasible and reliable method for reducing methylmercury production or exposure to elevated mercury levels. Potential mitigation could include permanent aeration of the bottom levels of the lake, alteration of the water chemistry (increasing pH or dissolved organic carbon levels), control of anaerobic bacteria populations, or removal and replacement of affected fish populations. The mitigation plan would require review by	Consistent. Revised project design would be required if monitoring indicates the development of problems.

Table 4.11-7 Surface Mining Reclamation Ordinance

Section	Regulation Summary	Project Compliance*
	the Regional Water Quality Control Board, California Department of Fish and Game, and the Yolo County Department of Environmental Health. (The removal and replacement of fish is not intended to be a long-term solution.) The reclamation plan shall be modified such that the mitigation approved for methylmercury reduction shall be applied to all mining areas proposed for reclamation to permanent lakes within the reclamation plan. (§ 1, Ord. 1191, eff. September 5, 1996)	
10-5.518 Mining In Reclaimed Lands	Once the reclamation plan or any portion thereof has been completed, no further surface mining operations shall be allowed within reclaimed lands, without approval of an amendment to the surface mining permit and reclamation plan. (§ 1, Ord. 1191, eff. September 5, 1996)	Consistent. The Applicant does not propose to continue surface mining on areas of the project site that have been restored.
10-5.519 Motorized Watercraft Prohibition	The use of motorized watercraft on any pond, lake or other body of water created as a part of the approved reclamation plan is prohibited. (§ 1, Ord. 1191, eff. September 5, 1996)	Consistent. To be consistent, the project would need permanent signage indicating the prohibition of motorized watercraft on the open water lake (Phase 2). Mitigation has been included to make the project consistent with this code section.
10-5.520 Operational Areas	Operational areas and haul roads that are not required for future use of the site shall be ripped, resoiled, and prepared accordingly, to allow for replanting. (§ 1, Ord. 1191, eff. September 5, 1996)	Consistent. This will be implemented through the proposed Reclamation Plan.
10-5.521 Permanent Stockpiles	There shall be no permanent piles of mine waste and/or overburden. Berms established for visual screening and noise abatement shall be contoured to conform visually with the surrounding topography. (§ 1, Ord. 1191, eff. September 5, 1996)	Consistent. The Applicant proposes no permanent piles of mine waste and/or overburden. The project would construct berms that are contoured to conform visually with the surrounding topography.
10-5.522 Phasing Plans	All proposed mining and reclamation plans shall present a phasing plan for mining and reclamation activities. The phasing plan shall be structured to minimize the area of disturbed agricultural lands during each mining phase, and encourage the early completion of the reclamation of agricultural land. (§ 1, Ord. 1191, eff. September 5,1996)	Consistent. The Applicant has proposed a phased reclamation plan for the project site.
10-5.523 Planting Plans	Site-specific planting plans shall be developed by a qualified biologist for proposed habitat reclamation projects. Restoration components of reclamation plans shall include provisions to enhance habitat for special-status species, where feasible. (§ 1, Ord. 1191, eff. September 5, 1996)	Consistent. Implementation of Mitigation Measure 4.5-2 would make the project consistent with this code section.
10-5.524 Post-Reclamation Groundwater Monitoring	Monitoring during the mining and reclamation period shall be a condition of the permit. The applicant shall ensure that the groundwater monitoring of wet-pit mining continues for (10) years after the completion of reclamation. (§ 1, Ord. 1191, eff. September 5, 1996)	Consistent. The County would condition the project per applicable County codes.
10-5.525 Prime Farmland Conversion	All mining permit applications that include “prime farmlands” as defined by the provisions of the Williamson Act shall identify the location and acreage of “prime farmlands,” which, as a result of reclamation, would be permanently converted to non-agricultural uses. For each acre of “prime farmland” that would be converted to nonagricultural use, the reclamation plan shall present provisions to offset (at a 1:1 ratio) the conversion of these lands. The potential offsets can included, but not be limited to, one or more of the following options:	Consistent. Implementation of Mitigation Measures 4.3-1a and 4.3-1b would offset the conversion of prime farmland to non-agricultural use.

Table 4.11-7 Surface Mining Reclamation Ordinance

Section	Regulation Summary	Project Compliance*
	(a) Identification of improvements by a qualified soil scientist to the agricultural capability of nonprime lands within or outside the project site that convert nonprime to prime agricultural conditions. These improvements can include permanent improvement of soil capability through soil amendments, reduction of soil limitations (such as excessive levels of toxins), or improvements in drainage for areas limited by flooding or low permeability soils. (b) Placement of permanent conservation easements on land meeting the Williamson Act definition of "prime farmland." The operator shall be encouraged to target property "at risk" of conversion to nonagricultural uses in selecting areas for the offset. Prior to approval of the conservation easement, the operator shall consult with the County and/or an appropriate nonprofit agency to determine the relative risk of conversion, to which the proposed property might otherwise be subject. (c) Demonstration of the ability to provide irrigation to nonprime lands limited only by the lack of an irrigation water supply. The identified water supply cannot be provided at the expense of "prime farmlands" currently using the same water supply. (§ 1, Ord. 1191, eff. September 5, 1996)	
10-5.527 Recreational and Habitat Uses of Permanent Wet Pits	If any permanent wet pit is proposed to be reclaimed for recreational uses and/or riparian habitat, the design shall account for fluctuations in the groundwater table. (§ 1, Ord. 1191, eff. September 5, 1996)	Consistent. The application provides sideslope design and a revegetation plan for the proposed reclaimed lake which account for and accommodate expected fluctuations in groundwater (and lake level). The proposed vegetation at the margins of the lake (and within the range of vertical seasonal changes in lake levels) include relatively shallow and variable slope (2:1 or flatter), adequate slope to prevent pooling, riparian and wetland planting in range of fluctuating levels (i.e., species tolerant of changing water levels) and monitoring of vegetation success.
10-5.528 Sewage Storage Prohibition	The use of off-channel wet pits for the storage and treatment of sewage effluent, or for landfill purposes, is prohibited. (§ 1, Ord. 1191, eff. September 5, 1996)	Consistent. The Applicant does not propose to use wet pits for the storage and treatment of sewage effluent, or for landfill purposes.
10-5.529 Shallow Depths	All permanent wet pits shall be reclaimed to include valuable wildlife habitat as a beneficial use of the water lost from wet pits due to evaporation. (§ 1, Ord. 1191, eff. September 5, 1996)	Consistent. The proposed open water lake would provide "shallow water habitat" of about 5.2 acres. The margins of the lake would be planted with tules, cattails, and rushes; the slopes above the shallow habitat would be planted with riparian woodland trees and shrubs; and the higher portions of the slopes would be planted with oak woodland trees and shrubs.
10-5.530 Slopes	All final reclaimed slopes shall have a minimum safety factor equal to or greater than the critical gradient as determined by an slopes less than five (5') feet below the average summer low groundwater level shall be designed in accordance with the reclaimed use and shall not be steeper than 2:1 (horizontal:vertical). Reclaimed wet pit slopes located five (5') feet or more below the average summer low groundwater level shall not be steeper than 1:1 (horizontal:vertical), in order to minimize the effects of sedimentation and biological clogging	Consistent. Slopes would not exceed recommendations found in the Slope Stability Study or those found in the ordinance (2:1).

Table 4.11-7 Surface Mining Reclamation Ordinance

Section	Regulation Summary	Project Compliance*
	on groundwater flow, to prevent stagnation, and to protect the public health. The maximum slope angle for all final reclaimed slopes shall be determined by slope stability analysis performed by a Licensed Geotechnical Engineer or Registered Civil Engineer and submitted with any mining and reclamation application for review by the Yolo County Community Development Agency. The slope stability analysis shall conform with industry standard methodologies regarding rotational slope failures under static and pseudostatic (seismic) conditions. The minimum factor of safety for all design reclamation slopes located adjacent to levees or below existing structures shall not be less than 1.5 for static and 1.1 for pseudostatic (seismic) conditions. Other reclamation slopes shall meet a minimum factor of safety that is consistent with the post-reclamation use proposed for the mining area. (§ 1, Ord. 1191, eff. September 5, 1996)	
10-5.531 Soil Ripping	Where areas are to be reclaimed to agricultural usage, all A and B horizon soil shall be ripped to a depth of three (3') feet after every two (2') foot layer of soil is laid down, in order to minimize compaction. (§ 1, Ord. 1191, eff. September 5, 1996)	Consistent. The project application indicates that the project would comply with this requirement.
10-5.532 Use of Overburden and Fine Sediments in Reclamation	Sediment fines associated with processed in-channel aggregate deposits (excavated as a result of maintenance activities performed in compliance with the CCIP) shall not be used in the backfill or reclamation of off-channel permanent lakes. Fines that result from the processing of in-channel sand and gravel shall be used for in-channel habitat restoration efforts or as soil amendments in agricultural fields. Overburden and processing fines shall be used whenever possible to support reclamation activities around reclaimed wet pits. These materials may be used in reclamation activities without testing for agricultural chemicals. If topsoil (A-horizon soil), formerly in agricultural production, is proposed for use within the drainage area of a wet pit, the soils must be sampled prior to placement and analyzed for pesticides and herbicides (EPA 8140 and 8150). Samples shall be collected and analyzed in accordance with EPA Test Methods for Evaluating Solid Waste Physical/Chemical Methods, SW-846, Third Edition (as updated). Topsoil that contains pesticides or herbicides above the Maximum Contaminant Levels for primary drinking water (California Code of Regulations) shall not be placed in areas that drain to the wet pits. (§ 1, Ord. 1191, eff. September 5, 1996)	Consistent. The Applicant intends to comply with this ordinance by testing A-horizon soils for pesticides and herbicides prior to placement around the wet pit to assure concentrations are below MCLs. Fines generated during the gravel-washing process are intended for use in areas to be reclaimed for agricultural production.
10-5.533 Wetland Habitat	Off-channel excavations that are proposed to be reclaimed to permanent lakes shall include wetland habitat. The creation of wetland habitat along the perimeter of permanent lakes shall include appropriate features such as: scalloped basin perimeters with extended peninsulas, islands, and stepped benches of various widths at approximately three (3') foot vertical intervals both above and below the groundwater level. Where wetlands are not proposed, either grassland and/or woodland habitat, or agricultural fields separated from the lake by a berm, shall be established in order to provide continuous habitat value around the permanent lakes. (§ 1, Ord. 1191, eff. September 5, 1996)	Consistent. The proposedopen water lake would provide "shallow water habitat" of about 5.2 acres. The margins of the lake would be planted with tules, cattails, and rushes; the slopes above the shallow habitat would be planted with riparian woodland trees and shrubs; and the higher portions of the slopes would be planted with oak woodland trees and shrubs. Addition details regarding the reclamation phase of this project is located in Appendix C.

IMPACTS AND MITIGATION MEASURES

Standards of Significance

The five significance criteria for this analysis were developed from criteria presented in the CEQA Guidelines Appendix G and the 2030 General Plan Final EIR (Yolo County 2009b). The two Appendix G criteria not listed below were previously addressed in the Initial Study, which indicated the project would have a less-than-significant impact on the land use described in those two criteria (see Impacts Found Less-than-Significant in Initial Study below). Other significance criteria used in the General Plan EIR were not included because they are not relevant. The project would result in a significant impact on land use if it would:

- Create substantial incompatibilities between land uses;
- Substantially alter the type or intensity of land use within an area;
- Exacerbate the existing jobs/housing imbalance; fail to achieve the proposed jobs/housing balance and match; or
- Substantially conflict with land use plans, policies, or regulations.

Impacts Found Less than Significant in Initial Study

Potential to disrupt or physically divide a community. The project is in a rural area, and project implementation would not occur within or directly affect any established community. Therefore, the project would not divide an established community.

Potential to conflict with applicable habitat or natural community conservation plan(s). The project's potential to conflict with the Draft Yolo County Natural Habitat Plan is addressed in Section 4.5, Biological Resources.

Analysis of Potentially Significant Impacts

Impact 4.11-1:

The project could create substantial incompatibilities between land uses. (Less than Significant)

The proposed project is located next to an existing aggregate mining site, on lands identified in the CCAP for future use for aggregate extraction. The proposal is consistent with the CCAP and applicable County regulations. Therefore, the project would not result in land use incompatibilities. This impact would be less than significant.

Mitigation Measure 4.11-1:

None required.

Impact 4.11-2:

The project could substantially alter the type or intensity of land use within an area. (Less than Significant)

The project would allow mining to occur on lands currently used primarily for agriculture. This would constitute a change in land use. However, surface mining is an allowed use under the Agriculture (AG) land use designation in the General Plan. Furthermore, with the SGR zoning designation for the site, the County has indicated that gravel mining is appropriate for the site at a future date. In fact, the SGR zone serves to notify existing and future property owners, as well as decision-makers, that mining would likely occur in this area (Yolo County 1996a). The project would not substantially alter the planned land use or intensity, because the County specifically planned for this site to be mined for aggregates. The only change is in the timeline for when the mining would occur, which is a matter of policy to be decided when the County takes action on the project. Therefore, the impact would be less than significant.

Mitigation Measure 4.11-2:

None required.

Impact 4.11-3:

The project would affect the local jobs/housing relationship. (Less than Significant)

The project would create 15 full-time jobs onsite and additional unquantified jobs through the delivery of aggregate products. Nearby Esparto currently has 278 jobs. As shown in Table HO-12 of the 2030 General Plan (Yolo County 2009a), Esparto has more housing than jobs and the jobs/housing ratio (0.31) is well below the General Plan target of 1.2 jobs per unit. At build-out (2030) this relationship worsens slightly to 0.22.

The project could increase Esparto's jobs/housing ratio to 0.32.[1] This would not constitute an adverse environmental impact and would therefore be considered "less than significant". The creation of jobs in this area would be considered a beneficial outcome because the project would improve Esparto's jobs/housing ratio.

Mitigation Measure 4.11-3:

None required.

Impact 4.11-4:

The Project could substantially conflict with applicable plans, policies and regulations where such conflict would result in an adverse physical change in the environment. (Less than Significant)

This project has been analyzed for consistency with applicable plans, policies, and regulations using the following framework:

[1] Calculation: 278 Esparto jobs + 15 full-time local jobs = 293 jobs. 293 jobs / 905 Esparto housing units = 0.32.

- Consistency with SMARA – Addressed in Section 4.11, Land Use (particularly Tables 4.11-3 through 4.11-7).
- Consistency with other applicable state plans, policies and regulations – Addressed in each section of Chapter 4.0 of this EIR, as applicable to the subject matter.
- Consistency with the County General Plan – Addressed in each section of Chapter 4.0 of this EIR, as applicable to the subject matter.
- Consistency with the CCAP – Addressed in each section of Chapter 4.0 of this EIR, as applicable to the subject matter. The analysis examines consistency with both the OCMP and the CCRMP (including the CCIP) as applicable.
- Consistency with the County Zoning Ordinance (Title 8 of the County Code) – Addressed in Section 4.11, Land Use (particularly Tables 4.11-3 through 4.11-7).
- Consistency with the County ICMMO (Title 10, Chapter 3 of the County Code) – Addressed in Section 4.11, Land Use (particularly Tables 4.11-3 through 4.11-7).
- Consistency with the County OCSMO (Title 10, Chapter 4 of the County Code) – Addressed in Section 4.11, Land Use (particularly Tables 4.11-3 through 4.11-7).
- Consistency with the County SMRO (Title 10, Chapter 5 of the County Code) – Addressed in Section 4.11, Land Use (particularly Tables 4.11-3 through 4.11-7).

Assuming approval of the requested approvals, including identified mitigation measures and standard conditions of approval, the project is considered consistent with these plans, policies, and regulations pursuant to CEQA.

Mitigation Measure 4.11-4:

None required.

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4.12 MINERAL RESOURCES

INTRODUCTION

This section analyzes the project impacts on mineral resources. The setting describes the existing conditions of the project site and vicinity. Project-specific impacts are identified and appropriate mitigation measures are recommended to reduce significant impacts to a less-than-significant level.

ENVIRONMENTAL SETTING

The project site occupies the lower Cache Creek Basin, overlying sand and gravel deposits on the historic floodplain of Cache Creek. Major formations in the area consist of Quaternary alluvium, Quaternary stream channel deposits, Quaternary basin deposits and the Pleistocene Modesto Formation. The Modesto Formation is divided into an upper and lower member on the basis of soil horizon formation (Blake et al. 2002). The upper and lower members of the Modesto Formation both consist of fluvially deposited silt, sand, gravel, and clay. Underlying the area, the older Pliocene Tehama formation consists of channel deposits of moderately compacted silt, clay, and fine sand with lenses of sand, gravel, silt, and cemented conglomerate derived from the Coast Ranges. The Tehama formation outcrops along the edges of Capay Valley, and western Yolo County (DWR 2004). Overlying the older formations are alluvium and stream deposits ranging up to 150 feet thick (DWR 2004). The Cache Creek alluvial and stream deposits consist of eroded material from the Tehama, Franciscan, Great Valley, and Cache formations.

MINERAL RESOURCES

The California State Mining and Geology Board uses the Mineral Resources Zone (MRZ) system to classify California's mineral resources. These zones are based on the presence of significant aggregate deposits. Aggregates are used in the production of building materials, such as concrete, asphalt, and cement. Locally produced aggregate is a valuable resource for urban regions, because the cost of transporting these materials makes remote production cost prohibitive. MRZs are defined as follows:

- **MRZ-1.** Areas where adequate information indicates that no significant mineral deposits are present or where it is judged that there is little likelihood for their presence.
- **MRZ-2.** Areas where adequate information indicates significant mineral deposits are present or where it is judged that there is a high likelihood for their presence.
- **MRZ-3.** Areas containing mineral deposits, the significance of which cannot be evaluated from available data.
- **MRZ-4.** Areas where available information is inadequate for assignment to any other MRZ.

The State has surveyed certain areas of California for minerals resources. The project area was evaluated by the California Department of Mines and Geology in Special Report 156 "Mineral Land Classification of Portland Cement Concrete-Grade Aggregate in the Sacramento-Fairfield

Production-Consumption Region [Sacramento, Solano, and Yolo counties], California, 1988" (CDMG 1988). The proposed project site overlies an area classified as MRZ-2.

Mineral resources in Yolo County along Cache Creek are recognized as having high economic value to the region, as the classification of the area as MRZ-2 designates the project site as a resource sector having met or exceeded that state thresholds for statewide significance (Figure 4.12-1). Lower Cache Creek has three mineral resource zones (MRZ-1, MRZ-2, and MRZ-3) which comprise 1,458 acres, 18,452 acres, and 8,220 acres, respectively. Six aggregate operations exist within the County along the streambanks of Cache Creek (Yolo County 2009b).

REGULATORY SETTING

Federal

There are no federal regulations applicable to the project.

State

Surface Mining and Reclamation Act

Project Consistency with SMARA is discussed in Section 4.11, Land Use.

Local

Project consistency with county mining regulations is discussed in Section 4.11, Land Use. Project consistency with General Plan policies, CCAP, and other applicable regulations is discussed below.

2030 Countywide General Plan (2009)

The County's 2030 Countywide General Plan (Yolo County 2009a) contains three policies relevant to the project.

Agriculture and Economic Development Element

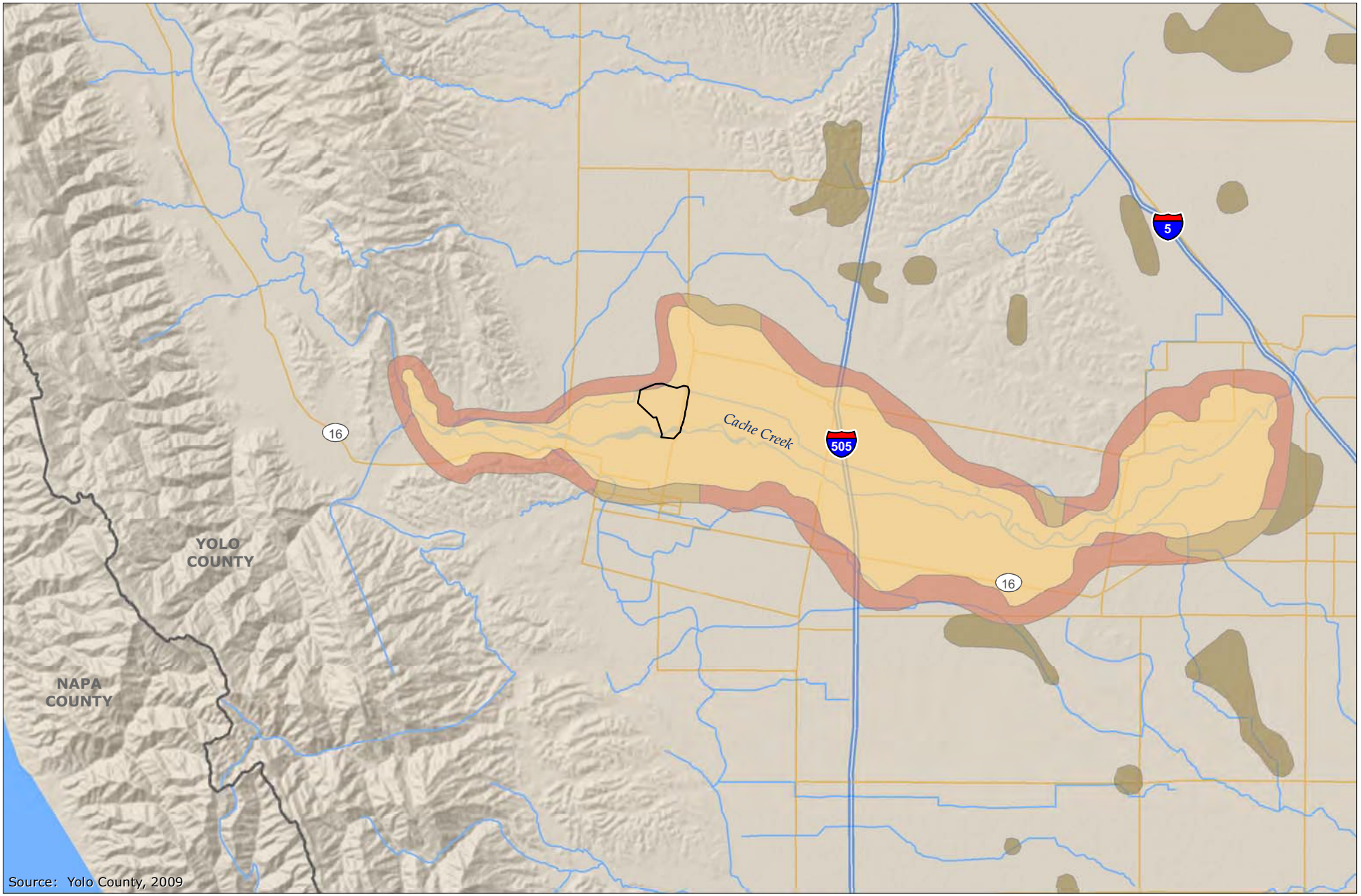
- **ED-1.2.** Support the continued operation of existing aggregate mining activities within the county as well as new aggregate mining in appropriate areas, to meet the long-range construction needs of the region.

The project would develop new aggregate mining to meet the long-range needs of the region. Therefore, the project would be consistent with this policy.

Conservation and Open Space Element

- **CO-3.1.** Encourage the production and conservation of mineral resources, balanced by the consideration of important social values, including recreation, water, wildlife, agriculture, aesthetics, flood control, and other environmental factors.

This EIR analyzes and mitigates for the environmental impacts, including water, wildlife, agriculture, aesthetics, and other environmental factors associated with the project as discussed in the Impacts and Mitigation subsection. Therefore, the project would be consistent with this policy.



MAP LOCATION

CALIFORNIA

MINERAL CLASSIFICATION ZONES

Gas Fields | MRZ-2 | Project Site

MRZ-1 | MRZ-3

N

0 2.5 5

MILES

FIGURE 4.12-1

DRAFT EIR

Granite Esparto Mining and Reclamation Project

MINERAL RESOURCE ZONES

ENTRIX | Environmental and Natural Resource Management Consultants

- **CO-3.2.** Ensure that mineral extraction and reclamation operations are compatible with land uses both on-site and within the surrounding area, and are performed in a manner that does not adversely affect the environment.

The project proposes mineral extraction and reclamation operations in an area with adjacent mineral extraction and agriculture uses that are compatible with the proposed use. This EIR analyzes and mitigates for the adverse environmental impacts associated with the project. Therefore, the project would be consistent with this policy.

IMPACT ASSESSMENT

Significance Criteria

The significance criteria for this analysis were developed from criteria presented in the CEQA Guidelines Appendix G. The criterion not listed below were previously addressed in the Initial Study, which indicated the project would have a less-than-significant impact on the mineral resources described in that criterion (see Impacts Found Less-than-Significant in Initial Study below). The proposed project would result in a significant impact on mineral resources if it would:

- Result in loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan.
- Substantially conflict with applicable plans, policies, and regulations of other agencies where such conflict would result in an adverse physical change in the environment.

Methodology

This analysis was based on a review of Mineral Land Classification maps, the Draft EIR for Granite Capay facility (Yolo County 2002b) and the Yolo County Final OCMP (1996a). Site-specific information prepared for the Applicant was also reviewed and incorporated into the analysis.

Impacts Found Less than Significant in Initial Study

The following impacts were determined to be less than significant in the Initial Study and are not analyzed further in this EIR.

Result in loss of availability of known mineral resource of regional or state value. Rock is an important mineral resource used for construction of buildings, roads, bridges, and other infrastructure components. Aggregate (i.e., bedrock mined and processed to select rock fragment sizes) for construction purposes is the largest mineral commodity in California. The project site is located within a geologic setting that is known to contain important and high-quality aggregate resources. Evaluation of mineral resources by the California Department of Conservation Division of Mines and Geology in the Sacramento-Fairfield Production-Consumption Region (CDMG 1988) classified the mineral resource zones within the area of the project site. The area of the proposed mining and reclamation is classified as MRZ-2. This classification indicates areas underlain by mineral deposits where geologic data demonstrate that significant measured or indicated economic resources are present. These resources are considered to be of value to the region. Within the lower Cache Creek Basin and in the vicinity of the project site, several permitted sand and gravel mining and processing sites are currently operating.

The proposed project would develop a known mineral resource, thereby ensuring its availability of the resource rather than causing the loss of availability. The EIR for the Final OCMP (Yolo County 1996b) determined that the mining of aggregate resource was not a significant impact on the availability of mineral resources, but rather beneficial in achieving the goal.

Analysis of Potentially Significant Impacts

Impact 4.12-1:

The project could result in loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan. (Less than Significant)

The project would result in extraction of important mineral resources, consistent with the County's long term plan for the management of aggregates along Cache Creek. Since the project's requested total tonnage was generally contemplated in the CCAP and was substantively analyzed under CEQA at that time, the requested mining is considered consistent with the CCAP. Similarly, since the proposed project site is zoned SGR, mining on the project site was also contemplated under the CCAP. Rather, the policy issue for the County's approval is the timing of the proposed mining. As previously indicated the project site's SRG zoning reflects an assumption of extraction after 2026, or in other words, after the original long-term mining permits would expire. The proposed project would result in mining of the site 16 years earlier than contemplated under the CCAP.

The timing issue is further underscored by the Williamson Act non-renewal timing discussed in Impact 4.3-2. A significant portion of the site (APN: 048-220-022 or 286.4 acres) will not fall out of Land Use Contract (Agreement No. 69-331; Resolution No. 69 246) until February 10, 2013. Mitigation Measure 4.4-2 restricts mining on the contracted portion of the site until 2013.

The Applicant is requesting a zoning change from SGR to the SG overlay designation, which would allow for the extraction of mineral resources upon approval and thereby make the project substantively consistent with County policies and plans from a procedural and regulatory point of view. Therefore, there would be no environmental impact as defined by CEQA. However, as a policy matter, allowing mining earlier than anticipated in the CCAP will be the subject of additional deliberation outside of the CEQA process, in the staff report and project approval hearings.

Mitigation Measure 4.12-1:

None required.

Impact 4.12-2:

The project could substantially conflict with applicable plans, policies and regulations where such conflict would result in an adverse physical change in the environment. (Less than Significant)

This project has been analyzed for consistency with applicable plans, policies, and regulations using the following framework:

- Consistency with SMARA – Addressed in Section 4.11, Land Use (particularly Tables 4.11-3 through 4.11-7).
- Consistency with other applicable state plans, policies and regulations – Addressed in each section of Chapter 4.0 of this EIR, as applicable to the subject matter.
- Consistency with the County General Plan – Addressed in each section of Chapter 4.0 of this EIR, as applicable to the subject matter.
- Consistency with the CCAP – Addressed in each section of Chapter 4.0 of this EIR, as applicable to the subject matter. The analysis examines consistency with both the OCMP and the CCRMP (including the CCIP) as applicable.
- Consistency with the County Zoning Ordinance (Title 8 of the County Code) – Addressed in Section 4.11, Land Use (particularly Tables 4.11-3 through 4.11-7).
- Consistency with the County ICMMO (Title 10, Chapter 3 of the County Code) – Addressed in Section 4.11, Land Use (particularly Tables 4.11-3 through 4.11-7).
- Consistency with the County OCSMO (Title 10, Chapter 4 of the County Code) – Addressed in Section 4.11, Land Use (particularly Tables 4.11-3 through 4.11-7).
- Consistency with the County SMRO (Title 10, Chapter 5 of the County Code) – Addressed in Section 4.11, Land Use (particularly Tables 4.11-3 through 4.11-7).

Assuming approval of the requested approvals, including identified mitigation measures and standard conditions of approval, the project is considered consistent with these plans, policies, and regulations pursuant to CEQA. As stated in the discussion under Impact 4.12-1, the project would result in extraction of important mineral resources, consistent with the County's long term plan for the management of aggregates along Cache Creek. However, the project would result in mining of the site 16 years earlier than considered under the CCAP. The Applicant's requested zoning change from SGR to the SG overlay designation would allow for the extraction of mineral resources upon approval. Assuming approval of the zoning change, the project would be substantively consistent with County policies and plans from a procedural and regulatory point of view.

Mitigation Measure 4.12-2:

None required.

4.13 TRAFFIC AND CIRCULATION

INTRODUCTION

This section analyzes the impacts associated with the traffic and circulation aspects of the proposed project. The setting describes the existing conditions of the project site and vicinity. Project-specific impacts are identified and appropriate mitigation measures are recommended to reduce significant impacts to a less-than-significant level.

The comments received on the NOP relative to traffic and circulation dealt primarily with addressing impacts to the intersection of SR 16 and County Road 87. These issues are addressed in the impacts and mitigations section of this chapter.

Prior Analysis of Study Area

An EIR was prepared in 1996 and a Traffic Impact Study (TIS) was prepared in 1999 for the Granite Capay facility project located directly west of the proposed project site. The 1996 EIR addressed the long-term effects of operating the Capay facility site with a maximum permitted aggregate production of 1 million tons per year. The 1999 TIS addressed three changes to the Capay facility operations identified in the 1996 EIR. This TIS was used in support of the Capay EIR (Yolo County 2002b). Project changes include:

- Increasing maximum permitted aggregate production from 1 million TPY to 1.2 million TPY,
- The addition of an asphalt plant, and
- The addition of a concrete plant.

The Capay facility operational characteristics/traffic volumes as described in the 1999 TIS are used as part of the background conditions in both the existing and cumulative (2029) conditions for this report. An additional TIS and supplemental pavement study were prepared in 2007 for this project and are the basis for this analysis.

SETTING

Description of Regional Environment

The study area is located in a rural environment characterized by agricultural uses including orchards, field crops, and open land. Residential development is limited in the area, with farm dwellings scattered throughout. The transportation system within the study area is almost entirely dependent upon the roadway system for the movement of goods and people. The automobile is the primary travel mode for most trips. Most regional travel occurs on I-5, I-505, and SR 16.

Description of Local Environment

Transportation within the local environment includes travel on the roadway system and school bus operations. There is little or no travel by transit or pedestrian modes in the project vicinity. The following summarizes the current status of the roadway system within the study area.

Existing Roadway System

Described in Capay 2002 EIR and incorporated by reference herein, the discussion of the roadway system includes a summary of the current roadway conditions and operations, intersection operations, collision history, and truck traffic. It concludes with a summary of existing operational deficiencies in the road system (Yolo County 2002b).

The vicinity roadway system providing local and regional access to the project site is shown in Figure 4.13-1. The key roadway facilities potentially impacted by the project include:

- Roadway segments
  - County Road 87 between Project/Capay Facility Driveway and County Road 19
  - County Road 19 between County Road 87 and I-505
- Intersections
  - Project/Capay Facility Driveway at County Road 87
  - County Road 19 at County Road 87
  - County Road 19 at I-505 SB Ramps
  - County Road 19 at I-505 NB Ramps

Table 4.13-1 describes the street system in the study area including the street classification, number of lanes, and the posted speed limits. Table 4.13-2 lists the existing study intersections and their associated intersection controls.

Table 4.13-1 Description of Existing Roadways

Roadway	Classification	No. of Lanes (2-dir)	Posted Speed Limit (mph)
I-505	Freeway	4	65
County Road 19	County Road	2	55
County Road 87	County Road	2	55

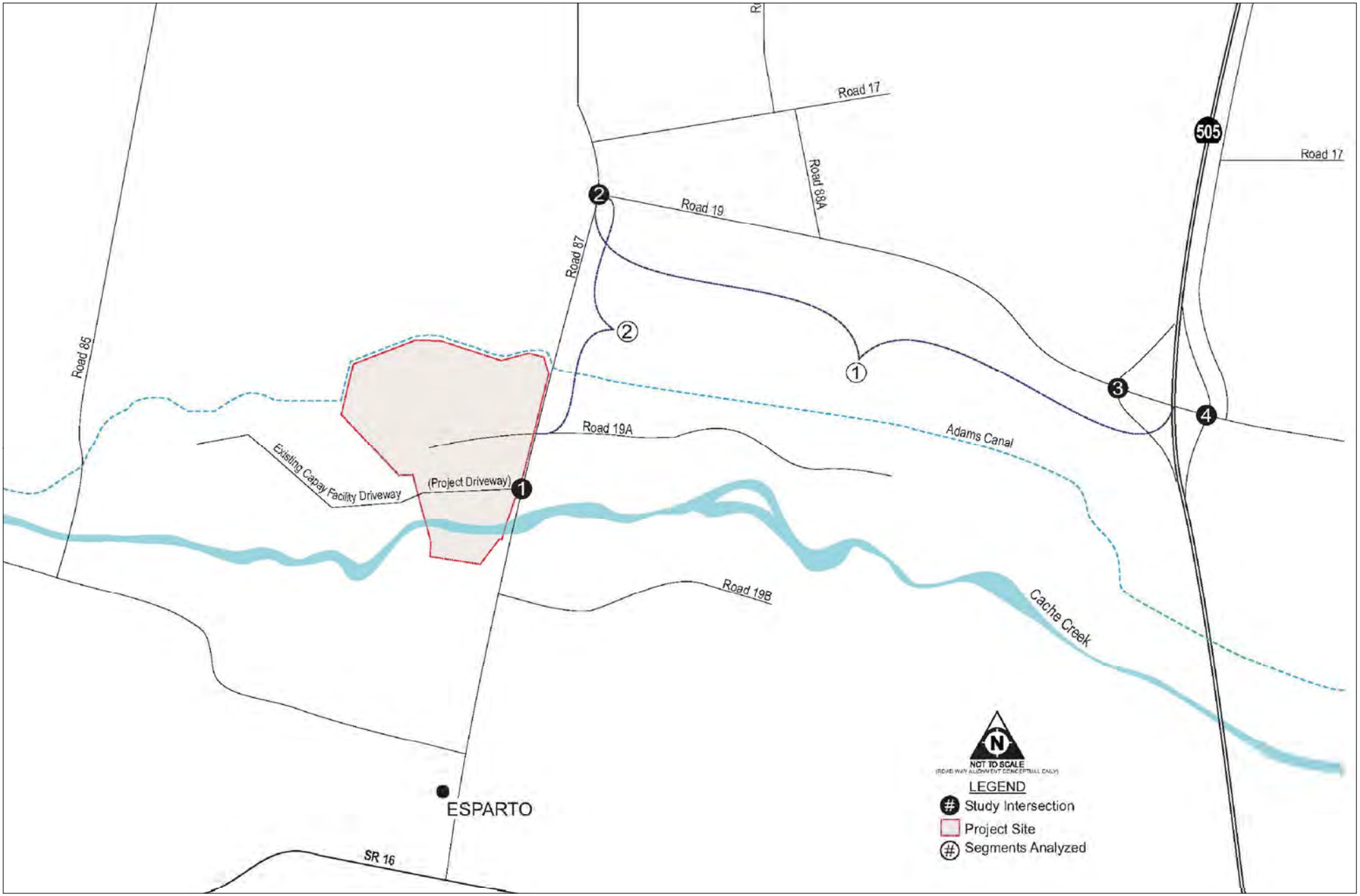
mph = miles per hour

Source: California Highway Patrol, pers. comm. (2009).

Table 4.13-2 Existing Intersection Controls

Intersection	Signalized/Unsignalized	Type
Project/Capay Facility Driveway at County Road 87	Unsignalized	TWSC
County Road 19 at County Road 87	Unsignalized	TWSC
County Road 19 at I-505 SB Ramps	Unsignalized	TWSC
County Road 19 at I-505 NB Ramps	Unsignalized	TWSC

TWSC = Two-Way Stop Control
SB = Southbound
NB = Northbound



Source: TPG Consulting, Inc., 2007

FIGURE 4.13-1

DRAFT EIR
Granite Esparto Mining and Reclamation Project
VICINITY ROADWAY MAP

Interstate 505 is a north-south freeway that connects I-80 near Vacaville in the south and I-5 near Dunnigan in the north. In the project vicinity interchanges exist at SR 16, County Road 19, and County Road 14. County Road 19 is an east-west county road that extends between County Road 87 on the west and County Road 94B on the east. County Road 87 is a north-south road that begins at SR 16 in Esparto and extends beyond County Road 14.

Figure 4.13-2 shows the existing AM and PM peak hour traffic volumes that reflect the Capay facility functioning at its current maximum permitted sales level of 1.2 million tons per year.

Level of Service

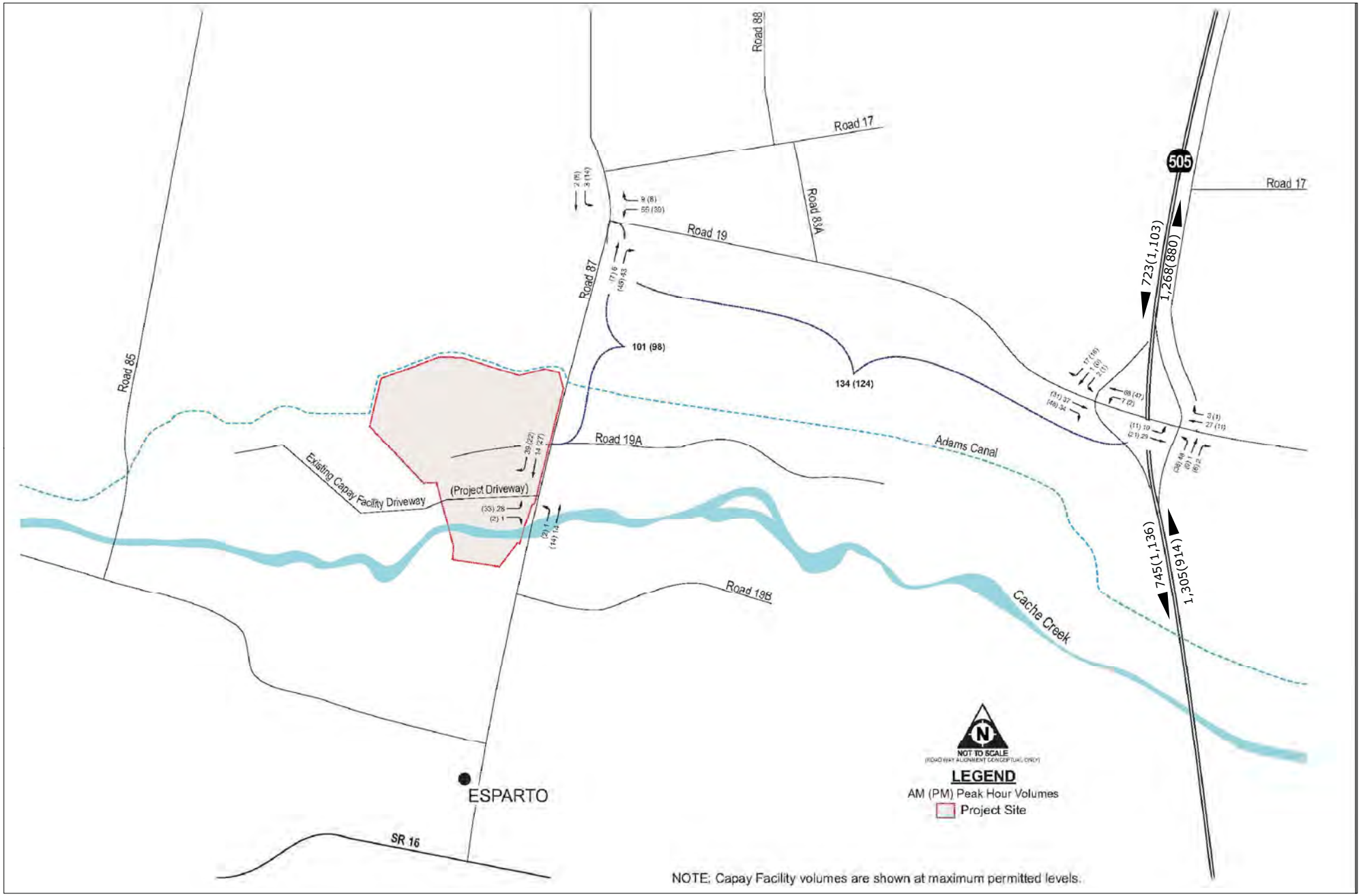
A commonly used descriptor for assessing the flow of traffic on roadway segments and traffic delays at intersections is known as level of service (LOS). LOS qualitatively characterizes traffic conditions associated with varying levels of traffic. A LOS determination is a measure of congestion, which is one method for measuring roadway service. The LOS calculation methodology for intersections is dependent on the type of traffic control device, traffic signals, or stop signs. LOS ranges from free-flowing traffic conditions (LOS A) to forced flow with congested conditions (LOS F). Table 4.13-3 outlines the LOS criteria for signalized and unsignalized intersections. Table 4.13-4 outlines the LOS criteria for roadway segments. Table 4.13-5 outlines the LOS criteria for freeway segments and freeway ramps.

Using the traffic volumes shown on Figure 4.13-2, the intersections and roadway facilities were analyzed for Existing (2007) levels of service. The current LOS on key roadway segments and at the key intersections is presented in Table 4.13-6. The current LOS on the key freeway segments and ramps is presented in Table 4.13-7. These results show that all of the key intersections, roadway segments, and freeway facilities are currently operating with peak hour levels of service that are in the acceptable range (LOS C or better). The levels of service calculation worksheets are included in the Freeway LOS Worksheets (TPG 2000).

Truck Traffic

On a daily basis, heavy vehicles make up about 44 percent of the traffic on County Road 87 from Project/Capay Facility Driveway to County Road 19 and about 47 percent of the traffic on County Road 19 from County Road 87 to I-505.

During the morning peak hour, heavy vehicles account for about 62 percent of the traffic on County Road 87 and about 58 percent of the traffic on County Road 19. In the afternoon peak hour, heavy vehicles account for about 38 percent of the traffic on County Road 87 and about 58 percent of the traffic on County Road 19.



MAP LOCATION

Source: TPG Consulting, Inc., 2007

FIGURE 4.13-2

DRAFT EIR
Granite Esparto Mining and Reclamation Project
EXISTING PEAK HOUR TRAFFIC VOLUMES

ENTRIX | Environmental and Natural Resource Management Consultants

Table 4.13-3 Intersection Level of Services Criteria

LOS	Conditions	Signalized Intersection Description	Intersections	
			Signalized Delay (sec/veh)	Unsignalized[1] Delay (sec/veh)
A	Free Flow	Users experience very low delay. Progression is favorable and most vehicles do not stop at all.	≤10.0	≤10.0
B	Stable Operations	Vehicles travel with good progression. Some vehicles stop, causing slight delay.	> 10.0 to 20.0	>10.0 to 15.0
C	Stable Operations	Higher delays result from fair progression. A significant number of vehicles stop, although many continue to pass through the intersection without stopping. Congestion is noticeable. Progression is unfavorable, with more vehicles stopping rather than passing through the intersection.	>20.0 to 35.0	>15.0 to 25.0
D	Approaching Unstable	Progression is unfavorable, with more vehicles stopping rather than passing through the intersection.	>35.0 to 55.0	>25.0 to 35.0
E	Unstable Operations	Traffic volumes are at capacity. Users experience poor progression and long delays.	>55.0 to 80.0	>35.0 to 50.0
F	Forced Flow	Intersection's capacity is oversaturated, causing poor progression and unusually long delays.	>80.0	>50.0

[1]Unsignalized intersections include Two-Way Stop Control and All-Way Stop Control

LOS = level of service

sec/veh = seconds per vehicle

Source: Transportation Research Board 2000 (Highway Capacity Manual)

Table 4.13-4 Roadway Segment Level of Services Criteria

LOS	Percent-Time Spent Following	Average Travel Speed (mi/h)
A	≤35	>55
B	>35-50	>50-55
C	>50-65	>45-50
D	>65-80	>40-45
E	>80	≤40

LOS F applies whenever the flow rate exceeds the segment capacity.

mi/h = miles per hour

Source: Transportation Research Board, 2000 (Highway Capacity Manual), Exhibit 20-2

Table 4.13-5 Freeway Segments & Ramps Level of Services Criteria

LOS	Freeway Segments V/C Ratio Range	Ramps Density (pc/mi/ln)
A	≤0.32	≤10
B	>0.32 to 0.53	>10 to 20
C	>0.53 to 0.74	>20 to 28
D	>0.74 to 0.90	>28 to 35
E	>0.90 to 1.00	>35
F	>1.00	demand exceeds capacity

V/C = volume to capacity

pc/mi/ln = passenger car per mile per lane

Source: Transportation Research Board 2000 (Highway Capacity Manual), Exhibit 20-2

Table 4.13-6 Existing Intersection and Segment Peak Hour Levels of Service

	AM LOS	PM LOS
Intersections		
Project Driveway at County Road 87		
EB Approach	A	A
NB Approach	A	A
County Road 19 at County Road 87		
WB Approach	A	A
SB Approach	A	A
County Road 19 at I-505 SB Ramps		
WB Approach	A	A
SB Approach	A	A
County Road 19 at I-505 NB Ramps		
EB Approach	A	A
NB Approach	A	A
Segments		
County Road 87 between Project Driveway and County Road 19	B	B
County Road 19 between County Road 87 and I-505	B	B

Analysis assumes Capay facility site at maximum production levels

LOS = level of service

EB = eastbound

WB = westbound

NB = northbound

SB = southbound

Table 4.13-7 I-505/County Road 19 Interchange Peak Hour Levels of Service

Mainline Segment or Ramp	Frwy Lanes	Aux Lanes	Existing		2029 No Project		2029 with Project	
			AM	PM	AM	PM	AM	PM
Freeway Segment Traffic Volumes								
SB -- North of County Road 19	2	0	864	1,317	1,196	1,825	1,213	1,835
SB -- South of County Road 19	2	0	892	1,359	1,236	1,879	1,260	1,901
NB -- South of County Road 19	2	0	1,559	1,092	2,155	1,517	2,181	1,534
NB -- North of County Road 19	2	0	1,515	1,052	2,098	1,456	2,110	1,470
Freeway Segment Volume to Capacity (V/C)								
SB -- North of County Road 19			0.20	0.30	0.27	0.41	0.28	0.42
SB -- South of County Road 19			0.20	0.31	0.28	0.43	0.29	0.43
NB -- South of County Road 19			0.35	0.25	0.49	0.34	0.50	0.35
NB -- North of County Road 19			0.34	0.24	0.48	0.33	0.48	0.33
Freeway Segment Level of Service								
SB -- North of County Road 19			A	A	A	B	A	B
SB -- South of County Road 19			A	A	A	B	A	B
NB -- South of County Road 19			B	A	B	B	B	B
NB -- North of County Road 19			B	A	B	B	B	B
Freeway Ramp Merge and Diverge LOS								
SB Off Ramp	1	0	A	A	A	A	A	B
SB On Ramp	1	0	A	A	A	A	A	A
NB Off Ramp	1	0	A	A	B	A	B	A
NB On Ramp	1	0	A	A	A	A	A	A

Frwy = Freeway
Aux = Auxiliary

Of the total existing daily heavy vehicle traffic, about 9 to 10 percent occurs in the morning peak hour and 6 to 9 percent occurs in the afternoon peak hour.

Figure 4.13-3 shows the hourly pattern of traffic flow throughout the day on County Road 87 from the Project/Capay Facility Driveway to County Road 19. This chart shows separate plots for all traffic and for only the heavy vehicle traffic. Most of the truck activity occurs between 5 am and 3 pm.

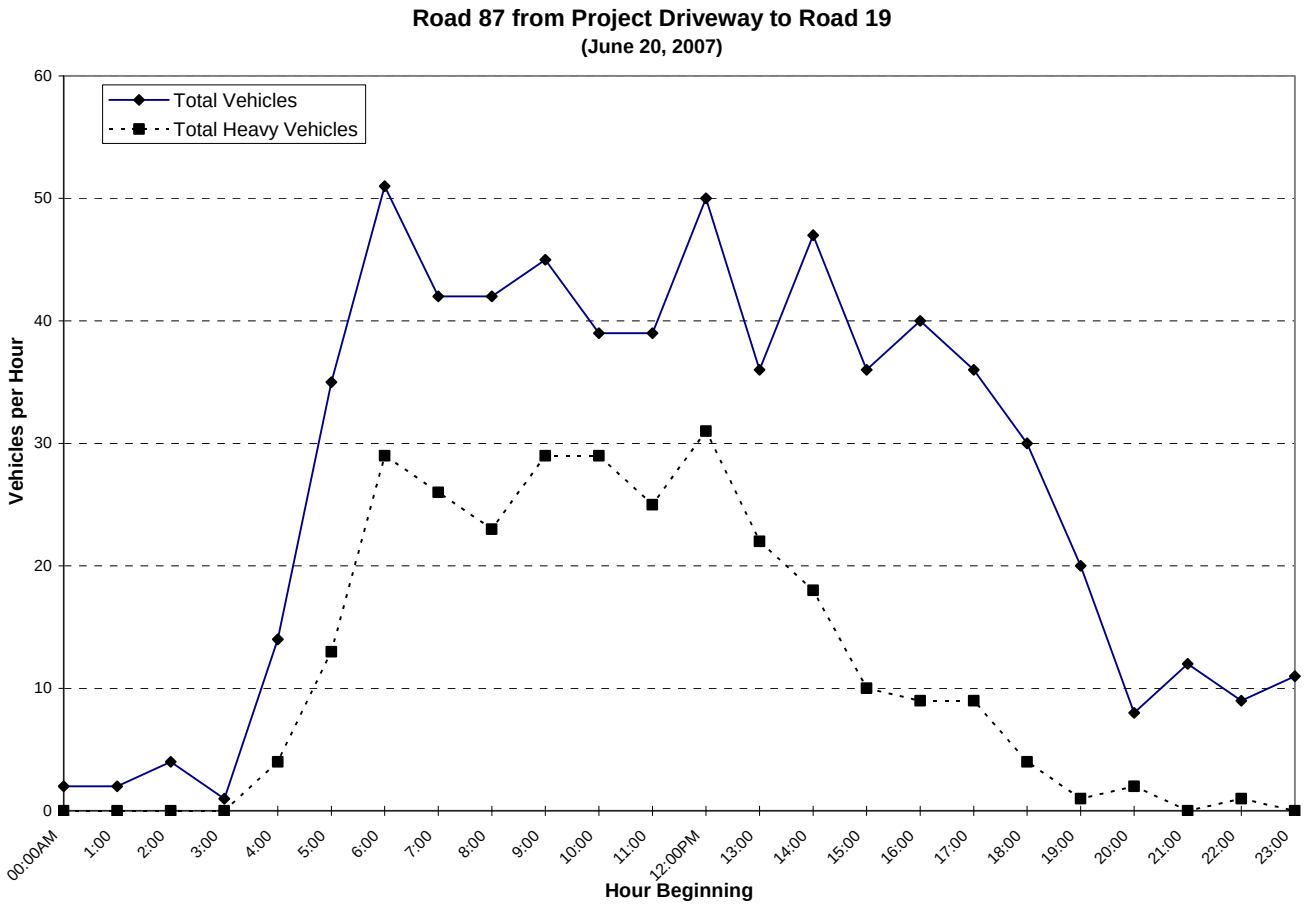


Figure 4.13-3 Existing Truck and Auto Traffic Patterns

Collision History

Collision data on county roads from January 2004 to most current available date (mid 2006) were obtained from the Statewide Integrated Traffic Record System (SWITRS) maintained by the California Highway Patrol.

Table 4.13-8 summarizes the reported collisions by study location. Based on the data shown in Table 4.13-8, one of the study locations experienced four or more collisions in a 12-month period. The County Road 19 at County Road 87 intersection experienced four collisions between April 2004 and March 2005. Since that time period, only one reported collision has occurred at this intersection. Within the last two years the County installed a stop-ahead sign with flashers on County Road 19 on the approach to County Road 87. The decrease in collision frequency is likely due to the remedial measures implemented by the County. The County Road 19, between County Road 87 and I-505 segment, also experienced four collisions in the same 12-month period. However, two of those collisions occurred at County Road 19 at County Road 88A intersection. Since these collisions involved vehicles from County Road 88A entering County Road 19, they are not considered collisions occurring “on” the study segment of County Road 19. Therefore, these two collisions have been excluded from the analysis of the County Road 19 study segment. Since the 12-month study period, only one reported collision has occurred at this segment.

A January 2006 report titled "Yolo County Multiple Casualty Incident (MCI) Task Force, A Report to the Board of Supervisors" (Yolo County 2006) presented lists of the Top 20 Injury & Fatal Collision Intersections and Road Sections for 2003-2005. The intersection of County Road 19 and County Road 87 does not appear in the report as a high collision location. The segment of County Road 87 south of County Road 19 does not appear in the report as a high collision location.

The segment of County Road 19 from County Road 87 to Interstate 5 does appear on the list of the Top 20 Injury & Fatal Collision Road Sections. It is shown with 4 injury collisions and no fatal collisions. None of these collisions involved a multiple collision incident. This is consistent with the TIS (TPG 2007), which reported 5 collisions for the January 2004 to June 2006 time period.

The report's recommendations do not include any specific improvements to the segment of County Road 19 from County Road 87 to Interstate 505. The report points out that Yolo County uses the warrants contained in the Caltrans Traffic Manual to determine the need for intersection improvements based on accident data. The report also states that in some cases, accidents are caused by driver behavior and cannot be corrected solely by safety improvements.

Table 4.13-8 Collision History for the Study Locations (January 2004 to June 2006)

Location	Number of Collisions	Type	Cause
County Road 19 at County Road 87	5	Overturn Hit Object Overturn Hit Object Hit Object	Unknown Unsafe Speed Improper Turn Unsafe Speed Improper Turn
County Road 19 at I-505 SB Ramps	0		
County Road 19 at I-505 NB Ramps	2	Head-On Broadside	Failure to Yield Failure to Yield
County Road 19 between County Road 87 and I-505[1]	5[1]	Broadside Broadside[1] Broadside[1] Hit Object Overturn[1]	Improper Pass Failure to Yield[1] Failure to Yield[1] Unsafe Speed Improper Turn[1]
County Road 87 between Project Driveway and County Road 19	3	Hit Object Hit Object Rear-End	Driving Under the Influence Unsafe Speed Unsafe Speed

[1]Includes collisions associated with the intersection of Road 19 at Road 88A

Source: California Highway Patrol 2007

REGULATORY SETTING

Project consistency with county regulations is discussed in Section 4.2, Land Use.

Federal

There are no federal regulations that address the transportation impacts associated with the project.

State

Surface Mining and Reclamation Act

Project Consistency with SMARA is discussed in Section 4.11, Land Use.

Local

Project consistency with county mining regulations is discussed in Section 4.11, Land Use. Project consistency with General Plan policies, CCAP, and other applicable regulations is discussed below.

2030 Countywide General Plan (2009)

The County's 2030 Countywide General Plan (Yolo County 2009a) contains two policies relevant to the project:

Circulation Element

- **CI-3.1.** Maintain Level of Service (LOS) C or better for roadways and intersections in the unincorporated county. In no case shall land use be approved that would either result in worse than LOS C conditions, or require additional improvements to maintain the required level of service, except as specified below. The intent of this policy is to consider level of service as a limit on the capacity of the County's roadways.

The project would not cause any road segment or intersection to have an LOS of C or worse (see Impact 4.13-3 for analysis). Therefore, the project would be consistent with this policy.

- **CI-3.4.** Define level of service consistent with the latest edition of the Highway Capacity Manual and calculate using the methodologies contained in that manual. At a minimum, weekday AM and PM peak hour traffic volumes will be used in determining compliance with the level of service standard. For recreational and other non-typical peak hour uses, weekday afternoon, weekday late evening, or weekends shall be considered.

As shown in the TIS (TPG 2007), all LOS calculations were performed using the methodologies of the latest version of the Highway Capacity Manual for the study intersections and roadway segments. Both AM and PM weekday peak hour traffic volumes were used in determining the levels of service. Therefore, the project would be consistent with this policy.

- **CI-3.7.** Consider designs for planned roadway capacity improvements that recognize the unique conditions associated with rural and agricultural areas in accordance with established standards including, but not limited to, the following:

- American Association of State Highway and Transportation Officials (AASHTO) publication "A Policy on Geometric Design of Highways and Streets;"
- Caltrans' Main Streets: Flexibility in Design and Operations;
- Federal Highway Administration's Flexibility in Highway Design;
- 2007 California Fire Code; and
- Institute of Transportation Engineers' Context Sensitive Solutions in Designing Major Urban Thoroughfares for Walkable Communities

The TIS (TPG 2007) does not identify or recommend any roadway capacity improvement measures. Therefore, the project would be consistent with this policy.

- **CI-3.9.** To the greatest feasible extent, require new development to construct safety improvements consistent with current design standards on existing roadways that are anticipated to accommodate additional traffic from planned development.

County Public Work's staff indicates that Roads 19 and 87 do not currently meet the County design standards (Campbell 2009). Therefore if the project would substantially increases traffic on these roadways, it should be required to contribute the cost of upgrading these roadways to current County design standards in an amount to be determined by and to the satisfaction of the County Engineer. See Impact 4.13-3 for complete discussion.

- CI-3.10. Upgrade the existing County road system to be consistent with current County design standards (such as horizontal curvature, site distance, etc.) as transportation funding allows. Roadways that require design improvements to accommodate projected future traffic, as identified in Table CI-1, shall have the highest priority to be upgraded. Safety shall be a key factor in prioritizing specific projects.

  These roadways also represent targeted trucking corridors for agricultural ("farm-to-market") transport and other goods movement. By attracting truck trips to these corridors, other roadways throughout the County are more available for movement of agricultural equipment and farm workers thus supporting more efficient and safe agricultural operations countywide.

  Exceptions to design standards may be allowed where circumstances warrant special treatment of the roadway including, but not limited to, the following:

  - Extraordinary construction costs due to terrain, roadside development, or unusual right-of-way needs.
  - Environmental constraints that may otherwise preclude road improvement to the adopted standards.
  - Exceptions to the level of service policy specified in Policy CI-3.1.

The project would not add traffic to any of the roadway segments listed in Table CI-1 referenced by this policy. Therefore, the project would be consistent with this policy.

- **CI-3.11** Require new development to finance and construct all off-site circulation improvements necessary to mitigate a project's transportation impacts (including public transit, pedestrian and bicycle mobility, safety and level of service-related impacts).

The TIS (TPG 2007) does not identify or recommend any off-site circulation improvements. Therefore, the project would be consistent with this policy. Therefore, the project would be consistent with this policy.

- **CI-3.11.1**. Collect the fair share cost of all feasible transportation improvements necessary to reduce the severity of cumulative transportation impacts (including public transit, pedestrian and bicycle mobility, safety and level of service-related impacts).

As shown in the TIS (TPG 2007), all study intersections and segments are projected to operate at or above the appropriate adopted level of service standard in the Cumulative (2029) Project conditions scenario with maximum permitted conditions for both the Project and existing Capay facility. Therefore, the project would be consistent with this policy.

- **CI-3.12**. Ensure that transportation and circulation improvements (including improvements to comply with County design standards) are constructed and operational prior to or concurrent with the need, to the extent feasible.

The requirements of the CCAP, County mining regulations, and the mitigation measures in this section satisfy this policy. Therefore, the project would be consistent with this policy.

- **CI-3.15.** Ensure that funding for the long term maintenance of affected roads is provided by planned development.

The requirements of the CCAP, County mining regulations, and Mitigation Measure 4.13-1 require the Applicant to be responsible for pavement maintenance for the hauling roads. Therefore, the project would be consistent with this policy.

- **CI-7.2.** Encourage movement of goods by truck on freeways and other appropriate designated routes.

According to the TIS (TPG 2007), most of the project traffic would travel via County Roads 87 and 19 to and from the I-505 freeway. Therefore, the project would be consistent with this policy.

IMPACTS AND MITIGATION MEASURES

Standards of Significance

The four significance criteria for this analysis were developed from criteria presented in the CEQA Guidelines Appendix G and the General Plan Final EIR (2009b). There are four other criteria not listed below that were previously addressed in the Initial Study, which indicated the project would have a less-than-significant impact on the traffic and circulation issues described in those four criteria (see Impacts Found Less-than-Significant in Initial Study below). The proposed project would result in a significant impact on traffic and circulation if it would:

- Cause substantial increases in traffic,
- Substantially increase traffic hazards or result in inadequate emergency access, or
- Exceed a LOS for an intersection or roadway segment.

- Substantially conflict with applicable plans, policies and regulations where such conflict would result in an adverse physical change in the environment.

Methodology

To assess whether the project would cause substantial increases in traffic, the following conditions were analyzed:

- Whether the project would add substantial (e.g., 10 or more per day) vehicle trips to a roadway facility that does not currently meet the following standards:
  - non-standard road design according to county and state design standards,
  - bridges less than 20 feet in width or those identified by the federal or state government as being in need of structural repair,
  - pavement that has deteriorated to the degree that it may affect public health and safety, or
  - intersections in which limited curve radii cause a truck to access an on-coming lane while making a turning movement.
- Whether the project would add substantial (e.g., 50 or more per day) loaded truck trips to a county-maintained roadway in which the pavement will deteriorate and require repair during the life of the permit.

To assess whether the project would exceed a LOS for an intersection or roadway segment, the following conditions were analyzed:

- Whether the project would change the LOS on a roadway segment or at an intersection from acceptable levels of service (i.e., LOS A, B, or C) to unacceptable levels of service (i.e., LOS D, E or F), or
- Whether the project would worsen conditions on a roadway or an intersection that currently operates at an unacceptable LOS.

Impacts Found Less-than-Significant in Initial Study

Potential to change air traffic patterns. The project would have no effect on any air traffic patterns or any airport facilities. The closest airport is approximately 6.5 miles west of the project site. The proposed mining and reclamation activities and reclaimed use of the mined areas (i.e., open space/habitat and agriculture) would not be expected to substantially increase air transportation of workers or visitors. The project does not propose any structures or other facilities with sufficient height to interfere with air traffic. Therefore, no new flight obstructions would be created.

Potential to result in inadequate emergency access. Emergency access to the project site would be provided by a two-lane, paved roadway. The roadway currently serves the same purpose for access to the exiting Capay facility west of the project site; and no problems with emergency access have occurred.

Potential impacts on parking capacity. As required by Section10-4.425 of the OCSMO, the project would provide off-street parking for all customers, employees, and mining equipment.

Potential conflicts with alternative transportation plans or policies. The project would have no direct impact on plans, programs, or policies supporting alternate transportation. There is currently no transit service operating on public roads that provide access to the site. The Yolo County Transportation District operates bus service on State Highway 17. However, the project proposes that trucks exiting its proposed facility would only use the route of County Road 87 south and connections to SR 16 for local deliveries. The occasional trips would not be expected to adversely affect transit service.

Analysis of Potentially Significant Impacts

Impact 4.13-1:

The project would cause substantial increases in traffic. (Significant but Mitigable)

The project area is rural and sparsely populated. Current agricultural activities at the project site generate very few vehicle trips; however, Granite currently uses a paved driveway that crosses the center of the project site as the main access for trucks going to and from the existing Capay facility, a mining and processing site located adjacent to and west of the project site. Previous traffic studies estimated that, when operating at full permitted capacity (1.2 million tons per year), the Capay facility could generate 480 daily trips (including 58 AM peak hour and 48 PM peak hour trips).

The proposed project would result in additional vehicle trips associated with operation of the processing plant. The trips would include trips generated by up to 15 employees and truck trips for pickups and deliveries of processed aggregate products. As indicated in Table 4.13-9, below, if the proposed project were operating at maximum requested capacity (i.e., 1.044 million tons/year or 120 percent of 870,000 tons/year), the project would generate 384 additional truck trips per day and trips by 15 additional employee. During the peak AM hour, about 30 trips would enter the project site and 23 trips would exit. The peak PM hour would see 19 trips entering and 26 trips exiting (see Table 4.13-10). The project would likely operate at peak production for 10 to 15 days per year between the months of May and November.

The project's trips would use the study area streets and intersections in a manner similar to the existing traffic. The existing haul routes for the Granite Capay facility would be utilized for the proposed project's trips, as shown in Figure 4.13-4. With these trip generation and distribution assumptions, the project's added, peak-hour trips are shown in Figure 4.13-5.

The TIS (TPG 2007) concluded that the additional loaded truck trips to be generated by the proposed project would accelerate the deterioration of the roadway pavement on these roads and could result in uneven pavement surfaces that could affect driving conditions. An analysis of the roadway conditions on the segments of County Roads 19 and 87 that would be affected by the project was conducted (TRC 2007c). The analysis indicated that the pavement conditions on both roads were "good to fair." Visual inspections documented pavement distress in some areas, including pavement cracking and surface depressions.

Table 4.13-9 Project Daily Trip Generation Data

Project Components	Average Annual Operations	Maximum Annual Operations*
Annual Aggregate Production		
tons mined	1,000,000	1,200,000
tons sold	870,000	1,044,000
Average Annual Truck Loads		
Aggregate	39,545	47,455
Average Daily Truck Loads		
Aggregate	160	192
Average Daily Truck Trips		
Aggregate	320	384
Number of Employees	15	15

*Includes 20 percent exceedance.

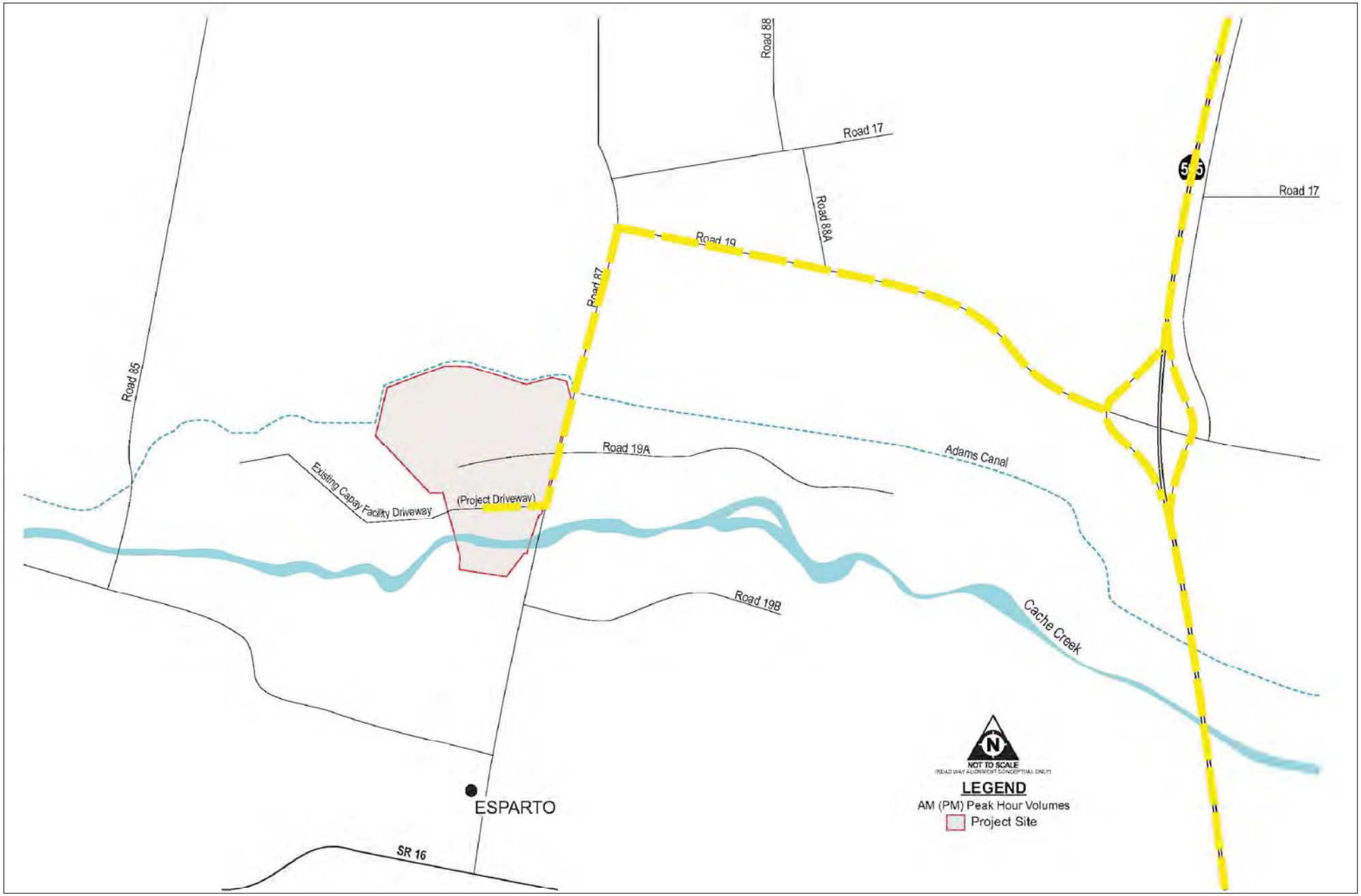
Source: TPG 2007

Table 4.13-10 Project Peak Hour Trip Estimates

Project Uses	AM Peak Hour		PM Peak Hour	
	Enter (trips)	Exit (trips)	Enter (trips)	Exit (trips)
Aggregate Trucks	23	23	19	19
Employees	7	0	0	7
Total	30	23	19	26

The project would intensify pavement wear and tear related to increased gravel truck use. Pursuant to Section 10-4.409 of the Mining Ordinance, the Applicant would be required to assume joint pavement maintenance responsibility with the County on County Road 87 from the project access road to County Road 19 and on County Road 19 from County Road 87 to I-505 for the permit period. The Applicant would be required to submit an annual evaluation of the structural integrity of the road and implement pavement improvements to maintain safe and efficient traffic operation on the road for each upcoming year.

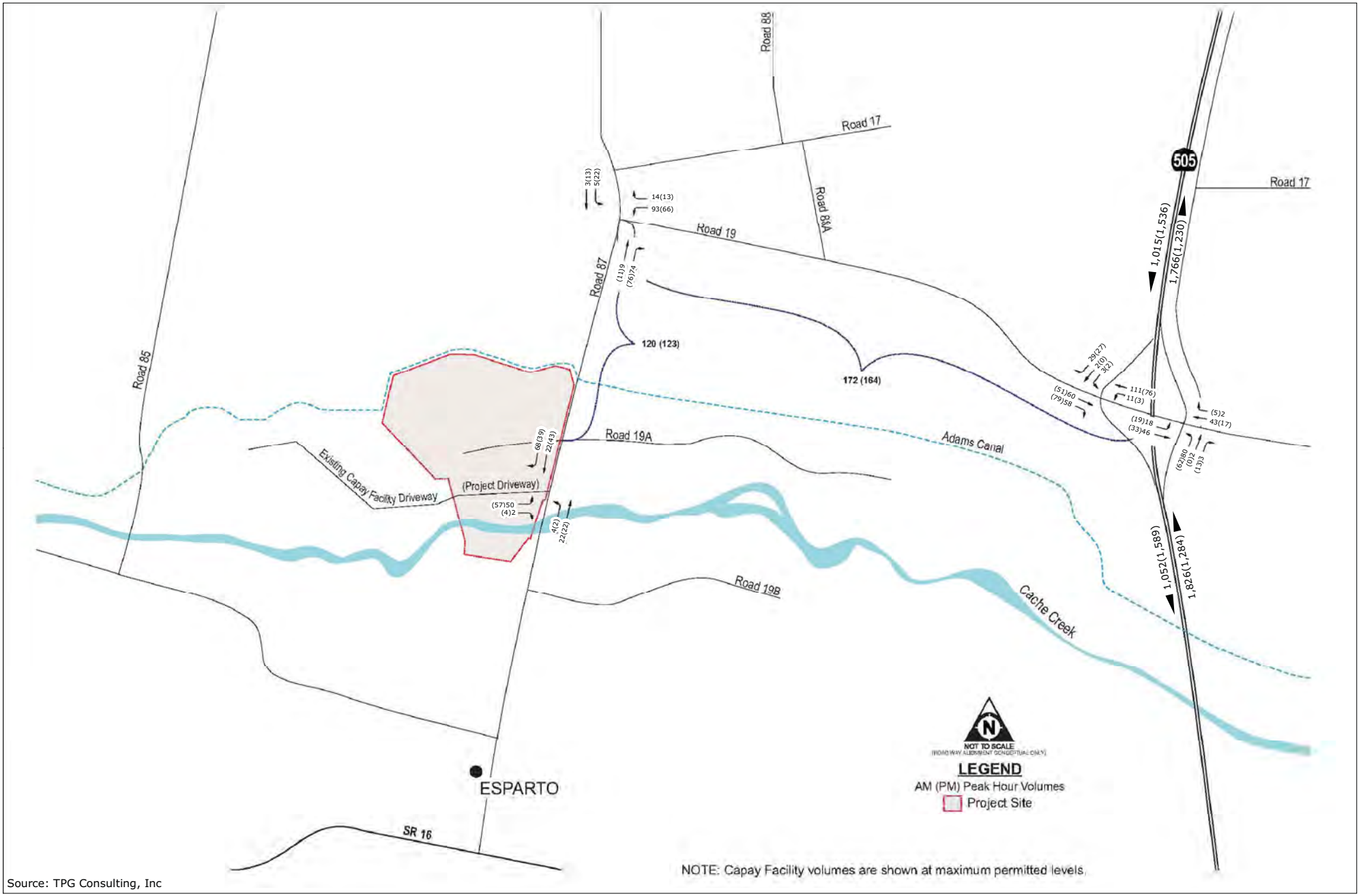
Since the project could add about 385 (maximum) loaded truck trips per day to the study area roadways and would accelerate the deterioration of pavements on these roadways, the project would have a significant impact on traffic based on two of the criteria used herein to determine significant impact on traffic and circulation due to substantial increases in traffic.



Source: TPG Consulting, Inc., 2007

FIGURE 4.13-4

DRAFT EIR
Granite Esparto Mining and Reclamation Project
PROJECT'S TRAFFIC DISTRIBUTION TO VICINITY ROADWAYS AND INTERSECTIONS



Source: TPG Consulting, Inc

N

0 750 1,500 3,000

FEET

FIGURE 4.13-5

DRAFT EIR

Granite Esparto Mining and Reclamation Project

PROJECT'S PEAK HOUR TRIPS

ENTRIX | Environmental and Natural Resource Management Consultants

Mitigation Measure 4.13-1:

Initial road improvements to County Road 87 from the project access road to County Road 19 and County Road 19 from Road 87 to the Teichert (Esparto) driveway, including widening and improving the structural pavement section to support the calculated traffic index (TI) to meet current County standards, shall be designed and constructed by the Applicant, to the satisfaction of the County Engineer, within one year of commencement of mining.

The Applicant shall maintain the pavement structural section on County Road 87 from the project access road to County Road 19, and on County Road 19, from Road 87 to the Teichert (Esparto) driveway.

Joint maintenance of the pavement structural section for County Road 19, from the Teichert (Esparto) driveway to I-505, shall be proportionally shared between the Applicant and Teichert Aggregates or its successor in interest. Proportional maintenance costs shall be determined based upon the previous year's sales figures for each of the two operations, as reported to the County.

At such time as the Teichert (Esparto) agreement for maintenance responsibility terminates, responsibility for the maintenance of the pavement structural section of the portion County Road 19, from the Teichert (Esparto) driveway to I-505 shall become the sole responsibility of the Applicant.

With the exception of normal County maintenance pursuant to Section 10-4.409 of the County Code, maintenance of the pavement structural section shall include all work required to maintain pavement surfaces with a pavement condition index (PCI) of 80 or above, and all work required to maintain the pavement surface in a safe condition. The Applicant's maintenance responsibility for the roads specified above shall continue throughout the life of the mining permit.

The County will provide annual striping of the county roads and maintenance of existing county-maintained roadside drainage ditches. Due to the significant increase in truck traffic expected, it is anticipated that more frequent and extensive pavement maintenance will be required on these county roads. In addition to the County's normal roadway inspections, the Applicant shall be responsible for inspecting pavement conditions and completing the required maintenance on an ongoing basis. The Applicant shall obtain an annual County encroachment permit for this work (at no cost to Applicant). If necessary maintenance and repairs are not completed by the Applicant in a timely manner, as determined by the County, and the County must respond and make emergency pavement repairs, and/or must make repairs when the public's safety is considered at risk by the County Engineer, then the Applicant will be billed for the county's repair work on a time and materials basis.

By August 15 of each year, the Applicant shall submit to the County an annual evaluation report documenting the structural integrity of the pavement structural section and the PCI of the roads maintained by the Applicant. The annual report shall be signed and sealed by a civil engineer licensed in the State of California. The report shall contain a proposed action plan for pavement maintenance and pavement improvements to maintain safe and efficient traffic operation on the roads, and a PCI of 80 or more, for each upcoming year. The County will review the report and recommend revisions, if necessary. Following acceptance of the report, the Applicant shall secure a County encroachment permit specific to the action plan

(at no cost to Applicant) and complete the proposed pavement maintenance and improvement activities by September 30 each year, to allow County striping activities to be completed by October 15. Once the work is completed, the Applicant will resubmit the annual evaluation report by October 31 each year, and include the scope and dates that work was completed.

If the Applicant does not complete initial road improvement work, provide an annual evaluation report acceptable to the County, meet the deadline dates above, or complete pavement structural section maintenance work as required by this mitigation measure, the County may pursue revocation of the Applicant's mining permit in accordance with the Off-Channel Surface Mining Ordinance of Yolo County (YCC § 10-4.101 et seq.).

Implementation of this mitigation measure would reduce this impact to a less-than-significant level.

Impact 4.13-2:

The project would add trips to the roadway system. (Less than Significant)

The site-specific TIS (see TPG 2007) evaluated the impact of the project's additional trips on roadway segments and intersections, traffic safety, and road conditions and is the basis for the impact and mitigation discussion that follows. The TIS evaluated the LOS under existing conditions (for AM and PM peak hours) and under future conditions with and without the project. The future condition was analyzed for the year 2029 and assumed maximum production rates at both the existing Capay facility and the proposed project.

The EIR authors peer reviewed the TIS results to determine the level of potential project traffic impacts. The review found that TIS estimates of project trip generation, trip distribution, and assignment to the study roadways and intersections were appropriate and correctly performed. The study's growth rate assumptions and calculations were also found to be reasonable and correctly done. Similarly, the LOS and capacity calculations were also correctly done, with appropriate use of key parameters such as peak hour factors (PHF), heavy vehicle percentages, and percent no-passing on segments. The study's reported traffic volumes and LOS results were internally consistent with the calculation worksheets presented in the study's appendix.

A description of the existing truck and auto traffic patterns throughout the day was derived from the traffic count data in the TIS appendix and is presented above under the heading of Truck Traffic in the Setting section.

Under existing conditions, the TIS found that during the peak hours all of the key intersections operated at LOS A and the County Road 19 and 87 segments operated at LOS B. Under the future condition without the project, some intersection LOS were reduced to B. Adding the project traffic resulted in additional intersections experiencing LOS B conditions. The roadway segments remained at LOS B. Table 4.13-11 shows the Cumulative (2029) peak hour levels of service for the study area key intersections and roadway segments with the project, and illustrates that all locations would have LOS B or better under peak hour conditions. Table 4.13-7 shows the Cumulative (2029) peak hour LOS for the study area key freeway

segments and ramps and also indicates that all locations would have LOS B or better peak hour conditions.

Thus, the TIS found that the project's added traffic would not cause any study area location to experience unacceptable peak hour levels of service, even at the projected Cumulative (2029) traffic levels. The project would, therefore, have less-than-significant impact on exceeding acceptable levels of service for intersections and roadway segments.

Mitigation Measure 4.13-2:

None required.

Table 4.13-11 Cumulative (2029) with Project Intersection and Segment Weekday LOS

	AM LOS	PM LOS
Intersections		
Project Driveway at Road 87		
EB Approach	B	B
NB Approach	A	A
Road 19 at Road 87		
WB Approach	B	B
SB Approach	A	A
Road 19 at I-505 SB Ramps		
WB Approach	A	A
SB Approach	B	A
Road 19 at I-505 NB Ramps		
EB Approach	A	A
NB Approach	B	B
Segments		
Road 87 between Project Driveway and Road 19	B	B
Road 19 between Road 87 and I-505	B	B

Analysis assumes Esparto and Capay facility sites at maximum production levels.

LOS = level of service

EB = eastbound

WB = westbound

NB = northbound

SB = southbound

Impact 4.13-3:

The project could substantially conflict with applicable plans, policies and regulations where such conflict would result in an adverse physical change in the environment. (Less than Significant)

This project has been analyzed for consistency with applicable plans, policies, and regulations using the following framework:

- Consistency with SMARA – Addressed in Section 4.11, Land Use (particularly Tables 4.11-3 through 4.11-7).
- Consistency with other applicable state plans, policies and regulations – Addressed in each section of Chapter 4.0 of this EIR, as applicable to the subject matter.
- Consistency with the County General Plan – Addressed in each section of Chapter 4.0 of this EIR, as applicable to the subject matter.
- Consistency with the CCAP – Addressed in each section of Chapter 4.0 of this EIR, as applicable to the subject matter. The analysis examines consistency with both the OCMP and the CCRMP (including the CCIP) as applicable.
- Consistency with the County Zoning Ordinance (Title 8 of the County Code) – Addressed in Section 4.11, Land Use (particularly Tables 4.11-3 through 4.11-7).
- Consistency with the County ICMMO (Title 10, Chapter 3 of the County Code) – Addressed in Section 4.11, Land Use (particularly Tables 4.11-3 through 4.11-7).
- Consistency with the County OCSMO (Title 10, Chapter 4 of the County Code) – Addressed in Section 4.11, Land Use (particularly Tables 4.11-3 through 4.11-7).
- Consistency with the County SMRO (Title 10, Chapter 5 of the County Code) – Addressed in Section 4.11, Land Use (particularly Tables 4.11-3 through 4.11-7).

Assuming approval of the requested approvals, including identified mitigation measures and standard conditions of approval, the project is considered consistent with these plans, policies, and regulations pursuant to CEQA. Specifically regarding Traffic and Transportation, implementation of Mitigation Measures 4.13-1 and 4.13-2 would ensure that the project would be consistent with OCSMO Sections 10-4.408 and10-4.409.

However, the project would not be consistent with General Plan Policy CI-3.9, in which new development to the greatest feasible extent is required to construct safety improvements consistent with current design standards on existing roadways that are anticipated to accommodate additional traffic from planned development. Therefore, mitigation measures would be required.

Mitigation Measure 4.13-3:

Initial road improvements to County Road 87 from the project access road to County Road 19 and County Road 19 from Road 87 to the Teichert (Esparto) driveway, including widening and improving the structural pavement section to support the calculated traffic index (TI) to meet current County standards, shall be designed and constructed by the Applicant, to the satisfaction of the County Engineer, within one year of commencement of mining.

If the Applicant does not complete initial road improvements as required by this mitigation measure, the County may pursue revocation of the Applicant's mining permit in accordance with the Off-Channel Surface Mining Ordinance of Yolo County (YCC § 10-4.101 et seq.).

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CHAPTER 5.0
CEQA CONSIDERATIONS

5.1 CUMULATIVE EFFECTS

INTRODUCTION

The California Environmental Quality Act (CEQA) Guidelines require that all environmental impact reports (EIRs) contain an analysis of cumulative effects for the project. CEQA Guidelines Section 15355 defines cumulative effects as "*two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts.*" A cumulative impact "*consists of an impact which is created as a result of the combination of the project evaluated in the EIR together with other projects causing related impacts*" [Section 15130(a)(1)]. The Guidelines also specify that the discussion of cumulative impacts "*shall reflect the severity of the impacts and their likelihood of occurrence, but the discussion need not provide as great detail as is provided for the effects attributable to the project alone*" [Section 15130(b)].

The Guidelines state that "*Lead agencies should define the geographic scope of the area affected by the cumulative effect and provide a reasonable explanation for the geographic limitation used*" [Section 15130(b)(1)(B)(3)]. The cumulative effects analysis "*shall examine reasonable, feasible options for mitigating or avoiding the project's contribution to any significant cumulative effects*" [Section 15130(b)(3)]. With some projects, "*the only feasible mitigation for cumulative impacts may involve the adoption of ordinances or regulations rather than the imposition of conditions on a project-by-project basis*" [Section 15130(c)].

SETTING

The Off-Channel Mining Plan (OCMP) described the setting for consideration of cumulative effects. The setting included all existing and potential mining operations along the Cache Creek corridor, an increase in processing of recycled materials, other developments (e.g., the Wild Wings residential development and the Pheasant Glen golf course), and growth in the Woodland area consistent with the Woodland General Plan. The time horizon for the OCMP cumulative condition is 2027 (the approximate date of the termination of mining associated with the long-term permits issued to the aggregate operations along the Cache Creek corridor).

A summary of the tonnages analyzed in the OCMP EIR and approved in the OCMP are provided in Table 5-1. The OCMP EIR analyzed the potential adverse environmental effects associated with "reasonably foreseeable maximum annual production" in the amount of 7,589,955 tons mined per year (Table 3-1, pages 3-22 to 3-23, OCMP EIR). Ultimately the County approved an annual allocation of 6,780,000 tons mined countywide with the potential for an additional 913,534 tons mined in any given year associated with the approved 20 percent exceedences, for a total of 7,693,534 tons mined per year. This indicates that the approved allocations to date slightly exceed the total cumulative annual tonnages analyzed in the OCMP EIR by 103,579 tons mined or a little over one tenth of 1 percent. The OCMP EIR analyzed the potential adverse environmental effects

associated with a total tonnage over the life of the permits (through 2027) of 179.48 million tons mined. The CCRMP EIR examined another 11.0 million tons associated with maintenance activities in Cache Creek, for a total clearance of 190.48 tons through 2027. Ultimately the County approved a total of 153.66 million tons which is considerably less than the amount analyzed in the 1996 EIRs.

The 1996 OCMP EIR concluded that implementation of the Cache Creek Area Plan (CCAP) would mitigate many of the potential cumulative effects, but that impacts would remain significant and unavoidable in the following areas:

- Permanent loss of agricultural land (Impact 4.5-2)
- Temporary loss of agricultural productivity (Impact 4.5-3)
- Cumulative loss of productive agricultural land (Impact 4.5-7)
- Emissions of PM_{10} (Impact 4.7-1)
- Emissions of ozone precursors (ROG and NO_x) (Impact 4.7-2)
- Cumulative impacts to air quality (Impact 4.7-3)
- Increased vehicle trips (Impact 4.8-2)
- Impacts to views and vistas (Impact 4.10-1)

Tables 5-2 through 5-6 contain cumulative impacts analyses which are explained and discussed in the following sections.

Table 5-1 Summary of Tonnages Analyzed in OCMP EIR and OCMP

TONS	OCMP EIR [8]				OCMP [9]					
					Annual Permitted		Annual 20% Exceedence [18]		Total Permitted [20]	
	Annual Sold	Annual Mined	Total Sold [21]	Total Mined [21]	Tons Sold	Tons Mined	Tons Sold	Tons Mined	Tons Sold [21]	Tons Mined [21]
CEMEX [1]	1,200,000	1,445,783	27.91	33.63	1,000,000 [15]	1,204,819 [15]	200,000	240,964 [15]	26.70	32.17
Granite Capay [6, 2]	1,000,000	1,075,269	30.0	32.28	1,000,000 [15]	1,075,269 [15]	200,000 [7]	215,054 [19]	30.00	32.26
Granite Woodland [11, 3]	0	0	0	0	370,000 [14]	420,000 [14]	None [23]	None [23]	None [22]	None [22]
Maintenance Mining/County	1,080,000 [3]	1,200,000 [3]	9.90 [3, 4, 13]	11.00 [3, 4, 13]	180,000 [13]	200,000 [13]	N/A	N/A	9.90 [8]	11.00 [8]
	180,000 [4]	200,000 [4]								
Schwarzgruber	108,300 [3]	114,000 [3]	4.51	4.75	100,000 [14]	110,000 [4]	None [23]	None [23]	1.08 [8]	1.14 [8]
	158,650 [4]	167,000 [4]								
Syar [12]	1,950,000	2,166,667	58.43	65.06	1,000,000 [15]	1,111,111 [15]	200,000	222,222 [15]	30.00	33.33
Teichert-Esparto	1,000,000	1,176,471	19.5	22.94	1,000,000 [15]	1,176,471 [15]	None [23]	None [23]	22.00	25.88
Teichert-Woodland	1,200,000	1,411,765	17.7	20.82	1,000,000 [15]	1,176,471 [15]	200,000	235,294 [15]	15.20	17.88
Unallocated	0	0	0	0	500,000	505,859 [16]	N/A	N/A	0	0
Recycled	0	0	0	0	Unlimited	N/A	N/A	N/A	N/A	N/A
Total	7,538,300 [3]	8,589,955 [3]	158.05	179.48	6,150,000 [14]	6,980,000 [14]	800,000	913,534	134.88	153.66
	6,638,300 [10, 4]	7,589,955 [10, 4]	167.95 [17]	190.48 [17]						

[1] Previously Rinker, originally Solano

[2] Previously R.C. Collet aka Cache Creek Aggregates

[3] 1997 – 2001

[4] 2002 – 2026

[5] Operation assumed to cease after 1996; mine has been subsequently classified as "idle"

[6] Project revised in 2002 (1999 application withdrawn) – no change to tonnage

[7] 20% exceedence added in 2002 in a process subsequent to revision noted in Note 6

[8] Cumulative total tonnage for which CEQA clearance was provided in 1996 Program EIR, OCMP DEIR, p. 3-22 and 3-23

[9] Total allocated/approved by County in 1996

[10] Uses lower Schwarzgruber number consistent with apparent error in Table 3-1, OCMP EIR.

[11] The subject Applicant proposes to "relinquish" this tonnage and have it "reallocated" to the proposed Granite Esparto Project

[12] Project revised in 1998 – no change to tonnage

[13] Not included in OCMP EIR and OCMP totals because authorization for this was provided through the Cache Creek Resource Management Plan (CCRMP) EIR and CCRMP

[14] OCMP, p. 12 and maintenance mining

[15] Development Agreement

[16] 6,780,000 minus sum of all other items in column = 505,859

[17] OCMP and CCRMP combined (CCRMP DEIR, p. 3-27)

[18] In any given year, if exercised by Applicant

[19] 20% of 1,075,269 tons mined

[20] Through 2006

[21] In million tons

[22] No mining assumed in OCMP EIR beyond 1996

[23] Not approved to utilize the 20% exceedence

Table 5-2 Additional Allocation Needed for Granite Esparto

Line Item	Annual Quantities	
	tons mined	tons sold
New Granite Esparto Request	1,000,000	870,000
Less Granite Woodland Surrender	(420,000)	(370,000)
Less Unallocated	(505,859)	(500,000)
Additional Allocation Needed*	74,141	0
20% Maximum Exceedence	200,000	174,000
Maximum Allocation Needed	274,141	174,000
Maximum Annual**	1,200,000	1,044,000
30-Year Lifetime (million tons)	30.0	26.1

* Tonnage requested in excess of available allocation

** Maximum Annual = Annual Permitted + 20% Exceedence

Table 5-3 Cumulative Analysis of OCMP EIR Assessment Totals

Line Item	Annual Permitted		20% Exceedence		Maximum Annual**	
	tons mined	tons sold	tons mined	tons sold	tons mined	tons sold
Other Commercial Permits*	5,854,141	5,100,000	913,534	800,000	6,767,675	5,900,000
Maintenance Mining	200,000	180,000	n/a	n/a	200,000	180,000
Subtotal*	6,054,141	5,280,000	913,534	800,000	6,967,675	6,080,000
Add Granite Esparto Request	1,000,000	870,000	200,000	174,000	1,200,000	1,044,000
All Permits & County Total	7,054,141	6,150,000	1,113,534	974,000	8,167,675	7,124,000
OCMP EIR Assessment	8,589,955	7,538,300			8,589,955	7,538,300
Assessment Balance***	1,535,814	1,388,300			422,280	414,300
Less Allocation Needed****	(74,141)	0			(74,141)	0
Final Assessment Balance*****	1,461,673	1,388,300			348,139	414,300

* CEMEX, Granite Capay, Schwarzgruber, Syar, Teichert Esparto, Teichert Woodland

* also assumes Granite Woodland permit surrendered

** assumes all eligible mines (100% worst case) would exceed permitted allocations by 20% in any given year

*** Assessment Balance = OCMP EIR Assessment - Permits & Maintenance Mining Subtotal

**** represents tonnage requested by project that is in excess of available allocation

*****excess tonnage, beyond allocations, for which CEQA clearance is provided in the CCAP EIRs

IMPACTS AND MITIGATION MEASURES

Impact 5-1:

The annual tonnage requested by the project is adequately covered by the OCMP cumulative analysis. (Less than Significant)

As shown in Table 5-2, the pending application is for a base amount of 1,000,000 tons mined (870,000 tons sold) plus the 20 percent exceedence which would add the potential for another 200,000 tons mined (174,000 tons sold). The base amount is 92.6 percent covered in the cumulative totals by the Granite Woodland tonnage (420,000 tons mined; 370,000 tons sold) proposed to be relinquished, plus the remaining unallocated tonnage (505,859 tons mined; 500,000 tons sold). Total base tonnage requested by the Applicant (1,000,000 tons mined) is 74,141 tons greater than the combined "available" allocation of 925,859 tons mined (420,000 tons at Granite Woodland plus 505,859 tons unallocated). This difference is minor (7.4 percent of the requested total) and can be reasonably attributed to differences in assumptions regarding waste materials. This is within an acceptable margin of error for generalized cumulative assumptions regarding waste. The requested total tons sold (870,000) is exactly covered by the Granite Woodland allocation (370,000 tons) plus the unallocated tonnage (500,000 tons). The Applicant is requesting 870,000 tons sold as compared to 870,000 tons "available" for allocation – a difference of zero.

As shown in Table 5-3 and explained below, the OCMP EIR cumulative analysis accounts for the base tonnage requested under the subject application because the EIR assessed a base surplus of 1,461,673 tons mined per year, taking into account all operations exclusive of the Granite Woodland relinquishment. This analysis covers the proposed project's 74,141 annual tons mined.

Regarding the 20 percent exceedence tonnage, assuming all eligible operators were to use their 20 percent annual exceedence in the same year (worst case scenario), a total of 8,167,675 tons annually could be mined. This is 348,139 fewer tons than the OCMP EIR analyzed on a maximum annual basis. Therefore, the proposed project would be covered by the original OCMP EIR analysis.

Mitigation Measure 5-1:

None required.

Impact 5-2:

The total requested tonnage over the life of the permit is covered by the OCMP and CCRMP cumulative analysis. (Less than Significant)

In terms of total tonnage over the life of the permits (through 2027) the project requests approval for a total of 30.0 million tons (26.1 million tons sold) for a 30-year period that would begin January 2010 (year one) and end in December 2040. As shown in Table 5-4, the requested tonnage would increase the total cumulative program tonnage from 153.66 million tons mined to 183.66 million tons mined. Since the OCMP and CCRMP EIRs provided clearance for a total of 190.48 million tons mined, no further cumulative analysis of maximum tonnage over the life of the permits is necessary since the total amount permitted is less than the total amount analyzed for cumulative impact.

Table 5-4 Cumulative Tonnages Analyzed in OCMP with Granite Esparto Added

Mining Operations	Annual Permitted		Project Lifetime				
	tons mined	tons sold	mmt mined	mmt sold	start date	years	end date*
CEMEX	1,204,819	1,000,000	32.17	26.70	1997	27	2024
Granite Capay	1,075,269	1,000,000	32.26	30.00	1997	30	2027
Granite Esparto (per request)	1,000,000	870,000	30.00	26.10	2010	30	2040
County Maintenance	200,000	180,000	11.00	9.90	1997	55	2052
Schwarzgruber	110,000	100,000	1.14	1.08	1997	10	2007
Syar	1,111,111	1,000,000	33.33	30.00	1997	30	2027
Teichert Esparto	1,176,471	1,000,000	25.88	22.00	1997	22	2019
Teichert Woodland	1,176,471	1,000,000	17.88	15.20	1997	15	2012
All Permits & County Total	7,054,141	6,150,000	183.66	160.98			

* earliest end date at permitted rates, actual end date may be later, up to January 1, 2027 for commercial operations

Mitigation Measure 5-2:

None required.

Impact 5-3:

The requested 30-year term of the permit may be determined to be inconsistent with the successful implementation of the OCMP. (Potentially Significant and Mitigable)

The OCMP assumes a program life that will end in 2026. Pursuant to the terms of the development agreements executed to date, all mining permits expire on January 1, 2027.

The requested permit term for the subject project would extend well beyond that date which is a time horizon that was not analyzed in either the OCMP EIR of the General Plan EIR. In addition, while the OCMP has a “fifty year horizon” (OCMP, p. 11) only the first 30-year “phase” through 2026 is authorized for implementation.

Of concern is the argument that having all permits on the same “cycle” subject to the same interim reviews and sunset dates is integral to the full and effective implementation of the adaptive management components of the CCIP. Should the Board of Supervisors reach such a determination, then this project should not be approved for a period that exceeds 17 years (2009 through 2036).

The subject project would have a permit term that differs from and extends beyond the terms of all other permits issued under the OCMP. This potentially would limit the County’s ability to collectively control and regulate mining along Cache Creek, which appears to be a fundamental component of the adaptive management strategy embodied in the CCAP. For example, Action 2.4-13 of the OCMP speaks to sunsetting all mining after 30 years unless subsequent permits are issued. For existing permits issued to date, the sunset date is January 1 2027 which coincides with the planning horizon of the OCMP that is analyzed in the OCMP EIR. For this permit, if approved as proposed, the sunset date would be 13 years later, in 2039.

Similarly, each of the existing permits is accompanied by a Development Agreement. Each Development Agreement identifies the effective date for the permit as January 1, 1997 with expiration January 1, 2027. Interim reviews required under the CCAP, County ordinance, and conditions of approval are set as follows for all existing permits:

Jan 1, 1007 10-year interim review

Jan 1, 2012 15-year discretionary review

Jan 1, 2017 20-year interim review

Jan 1, 2027 30-year interim review which coincides with permit expiration

Similarly, the Fee Ordinance, the mandatory plan updates, the TAC reports, and the cycle for CCAP project review are all tied to a synchronized schedule with iterative feedback loops that allow for adaptive management. The intent was to allow the County to re-evaluate different aspects of the program based on the results of regularly occurring reviews and analyses, and prior to consideration of continuing the program in 2027 (assuming the permittees apply for subsequent permits). While the plan does anticipate future mining between 2027 and 2047, it was assumed it would be subject to additional analysis and CEQA review performed close in time to the current OCMP sunset date. The subject project would be the first project reviewed under CEQA and approved outside of these parameters, with a permit term that is not synchronized with any of these adaptive management features.

Because the Applicant has requested a 30-year permit that would extend beyond the horizon year of the CCAP or the General Plan, this EIR must analyze the project's potential cumulative impacts through 2039. It is speculative to describe what the land use and environmental setting might be at a future year beyond the CCAP horizon year of 2026 and beyond the General Plan horizon year of 2030. Therefore, this analysis could only reasonably be performed at a qualitative level for impacts past the horizon year for either document. For the purposes of looking at this future cumulative impact, this EIR assumes that all current mining permits are extended and that a similar pattern and rate of growth occurs under the General Plan. Under these assumptions, all cumulative impacts identified in the OCMP EIR and General Plan EIR are assumed to continue through 2039, with the proposed project contributing incrementally to those impacts. These impacts are generally significant and unavoidable.

Mitigation Measure 5-3a:

In order to remain consistent with the synchronized permit period and adaptive management contemplated by the OCMP, restrict the term of the requested approval to no more than 17 years with an expiration of December 31, 2026, with interim reviews consistent with all other long-term mining permit approvals.

Mitigation Measure 5-3b:

The County shall find that synchronized permits are not necessary for the success of the program; and therefore, with the additional cumulative analysis provided by this EIR, the requested permit period could be approved.

Implementation of Mitigation Measure 5-3a would mitigate this impact to less-than-significant levels. Implementation of Mitigation Measure 5-3b would result in additional cumulatively considerable significant and unavoidable impacts to which the project would contribute.

Impact 5-4:

The project would contribute to cumulative climate change. (Significant and Unavoidable)

The Yolo County 2030 Countywide General Plan EIR (2009b) includes an analysis of local and regional/cumulative impacts associated with increased emissions of greenhouse gases (GHG) and global climate change. That analysis assumed build-out of the General Plan (including the CCAP), as well as other planned growth in the region. Potential impacts were found to be significant and unavoidable.

The California Air Resources Board has estimated that on a statewide basis, the mining and quarrying industry (sector) emits about 366,000 tons of CO_2 equivalents per year, excluding fuel combustion (CARB 2009). As shown in Table 5-5, the proposed project would cause to be emitted about 7,400 tons per year of CO_2 equivalents from direct and indirect sources combined, including fuel combustion. This quantity represents about 2 percent of the statewide sector total which does not factor in fuel combustion. Since fuel combustion accounts for about 80 percent of GHG emissions from the proposed project, the overall contribution of the proposed project to the statewide sector total would be about 0.4 percent, which is relatively small. Locally, the proposed project would contribute about 15 percent of total greenhouse gas emissions from permitted mining operations on an annual basis.

Table 5-5 Estimated Projected Cumulative GHG Emissions through 2026

Project Emissions	Factor* lbs/ton	Granite** tons/yr	Others*** tons/yr	Combined tons/yr	Excess**** tons/yr	Cumulative tons/yr	Excess percent
Carbon Dioxide (GHG - CO_2)	14.6721	7,336	42,946	50,282	8,169	58,451	16%
Nitrous Oxide (GHG - N_2O)	0.0004	0.2	1.1	1.3	0.2	1.5	16%
Methane (GHG - CH_4)	0.0006	0.3	1.7	1.9	0.3	2.3	16%
Carbon Dioxide Equivalents (CO_2 eqv)	14.7984	7,399	43,316	50,715	8,239	58,954	16%

* lbs pollutant / ton mined; for 1 million tons mined per year by Granite Esparto as typical

** sum of direct and indirect GHG emissions

** CEMEX, Granite Capay, Schwarzgruber, Syar, Teichert Esparto, Teichert Woodland

*** assumes all eligible mines (100% worst case) would exceed permitted allocations by 20% in any given year

Although the proposed project would contribute only a small fraction of greenhouse gas emissions for the sector, the contribution would nevertheless be cumulatively considerable under the General Plan. The General Plan EIR will be certified and the new General Plan will be adopted prior to certification of this EIR or final action on the subject project. This EIR hereby incorporates that analysis by reference (SCH #2008102034).

Mitigation Measure 5-4:

Implement Mitigation Measure 4.6-1.

Even with implementation of this mitigation measure, impacts on cumulative climate change would remain significant and unavoidable.

5.2 GROWTH-INDUCING EFFECTS

The CEQA Guidelines [Section 15126(d)] require that any growth-inducing effects of a project be addressed in an EIR. 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 by eliminating obstacles to growth, or by encouraging and/or facilitating other activities that would induce new growth. Examples of projects likely to have significant growth-inducing impacts include extensions or expansions of infrastructure systems (e.g., roads, sewerage) beyond what is needed to serve project-specific demand, or development of new residential subdivisions or industrial parks in areas that are currently only sparsely developed or are undeveloped.

The project would not directly induce population growth because it does not propose to construct housing. Nor does it propose to employ a significant number of people that would induce workers to move from outside the county. However, the project would provide construction materials to the region which would indirectly induce population growth by facilitating building homes. Because this site is not the only source of these materials, and planned construction projects would be expected to proceed with or without materials from the project site, the project would not measurably induce population growth in the region. Therefore, the project would have no growth-inducing effect.

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CHAPTER 6.0
ALTERNATIVES

This chapter presents the approach and findings regarding alternatives to the proposed Granite Esparto Mining and Reclamation Project (the project). It presents results of the alternatives screening analysis, as well as an evaluation of the alternatives selected for detailed analysis. This chapter contains the following elements:

- California Environmental Quality Act (CEQA) Requirements for Alternatives Analysis
- Selection of Alternatives
- Overview of the proposed project's Significant Impacts
- Environmental Analysis of Alternatives
- Environmentally Superior Alternative
- Possible Alternatives Considered But Rejected for Further Analysis

6.1 CEQA REQUIREMENTS FOR ALTERNATIVES ANALYSIS

Section 15126.6(a) of the CEQA Guidelines states that an environmental impact report (EIR) must describe and evaluate a range of reasonable alternatives to the project that 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.

An EIR need not consider every conceivable alternative to the project. Rather, it must consider a reasonable range of potentially feasible alternatives that will foster informed decision-making and public participation.

CEQA Guidelines Section 15126.6(e) states that "[t]he specific alternative of 'no project' shall also be evaluated along with its impact." The EIR must evaluate the comparative merits of the alternatives and include sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison with the proposed project.

Specifically, the CEQA Guidelines set forth the following criteria for selecting and evaluating alternatives:

- "[T]he 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 should 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" (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. 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 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 CEQA Guidelines also require that the "no project" "analysis shall discuss the existing conditions at the time the [EIR] notice of preparation is published … as well as what would reasonably be expected to occur in the foreseeable future if the project were not approved, based on current plans …" (CEQA Guidelines Section 15126.6[e][1] and [2]); and
- "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 determines could feasibly attain most of the basic objectives of the project. The range of feasible alternatives shall be selected and discussed in a manner to foster meaningful public participation and informed decision-making" (Section 15126.6[f]).

If there is a specific proposed project or a preferred alternative, the EIR must explain why other alternatives considered in developing the proposed project were rejected in favor of the proposal. The State CEQA Guidelines Section 15126.6(c) states: "The EIR should 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."

6.2 SELECTION OF ALTERNATIVES

The alternatives selected for detailed analysis were developed based on technical feasibility, project goals and objectives, avoidance of environmental effects, and input received from the resource agencies and the public during the EIR scoping process. This section describes and evaluates four alternatives to the proposed project, including the No Project Alternative.

The four alternatives (summarized in Table 6-1) include: 1) the No Project Alternative, 2) the Reduced Tonnage/Acreage Alternative, 3) the Alternate Location Alternative, and 4) the Off-site Processing Alternative (Sequential Mining). Each of these alternatives is described and evaluated below. The three "build" alternatives represent a range of feasible alternatives, both within and outside the project site. These alternatives were selected for detailed analysis because 1) they would meet most or all of the Applicant's objectives, and 2) they would avoid or result in lesser environmental impacts when compared to the proposed project.

Table 6-1 Alternatives Selected for Detailed Analysis

Alternative	Description	Rationale for Consideration
1. No Project	Under this alternative, no mining would occur at the proposed new site. The allocation of 420,000 tons per year would remain assigned to the Granite "Woodland (Reiff) site", the other requested tonnage (505,859 tons mined) would remain unallocated, and the 115-acre Granite Woodland site would remain under the ownership of the Applicant. Implementation of streambank stabilization along Cache Creek may occur under this scenario, consistent with the Cache Creek Resource Management Plan (CCRMP).	Required by CEQA.
2. Reduced Tonnage/Acreage	This alternative pertains to a reduced extraction over a smaller acreage. Under this alternative, one half of the requested tonnage would be extracted on a total and annual basis, approximately 500,000 tons mined annually (a maximum of 435,000 tons sold), assuming about one half the project area (approximately 156 acres) mined to the full depth of the resource. This alternative addresses several issues. It provides valuable information for future decision making in that it will examine the environmental impacts associated with a project of reduced intensity. It also corresponds generally to the equivalent of the transfer the Woodland site tonnage allocation, plus only a portion of the remaining unallocated tonnage that was studied under the Cache Creek Area Plan (CCAP).	Smaller project
3. Alternate Location	This alternative assumes the same requested tonnage but at an alternate Sand and Gravel Reserve (SGR) zoned site within the CCAP study area.	Different location Avoids impacts from construction adjacent to Cache Creek
4. Off-site Processing (Sequential Mining)	This alternative would sequentially mine first the existing Granite Capay site, then the adjacent proposed Granite Esparto site. Aggregate resources from both sites would be processed at the Granite Capay processing facilities. A new mining plant at the Granite Esparto site would not be assumed. This alternative assumes that the annual allotment of 1 million tons sold at the Granite Capay site would be increased by 870,000 tons sold annually which would allow for an accelerated pace of mining at both of the sites.	Avoids impacts associated with processing plant construction Avoids agricultural impacts from Williamson Act conflicts

6.3 OVERVIEW OF THE PROJECT'S IMPACTS

As described above in Section 6.1, CEQA Requirements for Alternatives Analysis, alternatives should reduce or avoid significant environmental impacts associated with the project as proposed. Project implementation would result in the following impacts (before mitigation):

Aesthetics

The project could substantially change the existing visual character or quality of the County site and its surroundings.

Agriculture

The project would remove 154 acres of Prime Farmland and 133 acres of Unique Farmland from production for up to 30 years, permanently converting 95 acres of "Prime" and 118 acres of "Unique" to non-agricultural use. The project would also conflict with an existing Williamson Act contract.

Air Quality

The project could violate an air quality standard or contribute substantially to an existing or projected air quality violation. The project could also result in a cumulatively considerable net increase in criteria pollutants for which the project region is nonattainment under an applicable federal or state ambient air quality standard.

Biological Resources

The project would adversely affect sensitive wildlife species including Northwestern pond turtle, migratory birds, non-listed raptors, and burrowing owls, Swainson's hawk, and bank swallows. Project construction and mining operations could have a significant impact on riparian vegetation and habitat.

Climate Change

The project would result in new net increases in GHG emissions and has the potential to conflict with an applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases. The project may also experience significant adverse physical effects from future effects of Global Climate Change. The project would also contribute to cumulative climate change.

Cultural Resources

The project could result in impacts to previously undiscovered prehistoric and historic resources and human remains.

Geology and Soils

Ground shaking from earthquakes could damage project facilities and pose a safety risk to site visitors.

Hazards

The project could result in exposure of the public or the environment from accidental releases of hazardous materials. Also, excavation of contaminated soil during mining or reclamation could result in exposure and demolition and removal of existing site structures may result in exposure to asbestos, lead, or other hazardous building materials.

Hydrology and Water Quality

The project could result in an increase in mercury loading to Cache Creek from erosion of sediments. The project could deplete groundwater supplies from backfilling areas with fine sediments. In-stream stabilization structures could contribute to downstream erosion. The project could substantially degrade water quality by pumping groundwater. Creation of open water surfaces could increase the potential for degradation of water quality by discharge of chemicals (diesel, petroleum, etc.). Presence of mercury in site soils could result in bioaccumulation of mercury in reclaimed water bodies.

Mineral Resources

The project could result in loss of availability of a locally important mineral resource. However, if the zoning change is granted, the proposed aggregate extraction would not constitute a significant impact because it is within the CCAP's extraction amount as analyzed in the Draft EIR (Yolo County 1996b). The significance of this impact cannot be determined at this time.

Traffic and Transportation

The project would cause substantial increases in traffic.

Mitigation measures would reduce most of the significant impacts listed above to less than significant. Of the potentially significant impacts listed in this EIR, those identified as significant and unavoidable include effects on attainment of the federal and state ambient air quality standards by either violating or contributing to an existing violation and a cumulatively considerable net increase in criteria pollutants. These impacts would remain significant and unavoidable even after implementation of mitigation measures.

6.4 ENVIRONMENTAL ANALYSIS OF ALTERNATIVES

The following subsections provide a description and an environmental impact analysis of each alternative in sufficient detail to allow meaningful evaluation, analysis, and comparison with the proposed project.

The alternatives evaluation presented below compares alternatives based on their feasibility and their ability to meet most of the basic project objectives as well as avoid or substantially lessen the project's significant effects. The project objectives are summarized below:

The Applicant has defined the overall project objective to be as follows:

- To secure permitting to mine and process 1 million tons of unprocessed aggregate (870,000 tons sold) from the project site for a 30-year mining period to supply the demand for construction aggregate. Construction aggregate is necessary for a broad range of public- and private-sector construction, infrastructure, and maintenance projects. The cost of aggregate is largely dependent on the transportation costs. Therefore, shorter transportation distances afforded by local sources of aggregate contribute to maintaining an adequate supply at a reasonable cost to the consumer while minimizing transport of material.

The Applicant has stated that the other project objectives are as follows:

- To maximize its ability to provide a secure source of high-quality construction aggregates to meet regional demand for these materials,
- To minimize the impacts of mining on adjacent property owners and the public,
- To maximize the benefits of land dedication to the County, and
- To provide for a diverse range of reclamation uses for mined lands.

ALTERNATIVE 1: NO PROJECT ALTERNATIVE (EXISTING CONDITIONS)

This alternative analyzes the effects of taking no action. The allocation of 420,000 tons per year would remain assigned to the Granite "Woodland (Reiff) site", the other requested tonnage (505,859 tons mined) would remain unallocated; and the 115-acre Granite Woodland site would remain under the ownership of the Applicant. Implementation of streambank stabilization along Cache Creek may occur under this scenario, consistent with the CCRMP.

Consistency with Project Objectives

The No Project Alternative would not achieve the project objectives.

Impacts of the Alternative

The CEQA Guidelines require that an EIR evaluate and analyze the impacts of the No Project Alternative. This allows decision makers to compare the impacts of a proposed project to the impacts or benefits of not building the project as well as to evaluate what would be reasonably expected to occur in the foreseeable future if the project were not built (CEQA Guidelines Section 15126.6[e][1] and [2]).

Aesthetics

The No Project Alternative would not involve construction of mining facilities or aggregate extraction. It is assumed that the existing structure on the site would remain; however, under this alternative existing vegetation (agricultural, natural, riparian, etc.) could be removed or changed as part of farming operations. Therefore, the No Project Alternative could result in impacts on aesthetic or visual resources, although less than the project.

Agriculture

The No Action Alternative would leave 287 acres of Prime or Unique Farmland in crop production. No agricultural land would be converted to nonagricultural use at the site. The No Action Alternative would result in no conflicts with the Williamson Act contract.

Air Quality

Under the No Project Alternative, agricultural activities would continue on the site, thus ongoing soil disturbance and associated dust generation would occur.

Biological Resources

Under the No Project Alternative, use of the site could result in changes from row crops to orchards which would eliminate Swainson's hawk habitat. Other biological impacts would be similar as well if the property owner chose to implement streambed stabilization along Cache Creek. Compliance with identified measures would mitigate these impacts; however, the Applicant would be under no obligation to improve habitat.

Climate Change

Under the No Project Alternative, agricultural equipment operating at the site would continue to generate greenhouse gas (GHG) emissions, although not likely to occur at the same level as

under the project. The area could still be affected by hydrologic changes resulting from climate change, including increased flooding and increased threat of wildfire.

Cultural Resources

Under the No Project Alternative, impacts to previously undiscovered prehistoric and historic resources, human remains, or paleontological resources would be similar to the proposed project as a result of continued agricultural activities and associated soil disturbance.

Geology and Soils

The No Project Alternative would not involve excavation or processing of soils or aggregate. Therefore, no geological or soils impact would occur. Because no facilities would be constructed, seismic events would not result in significant damage. Continued agricultural use would result in erosion but likely not more than the project. There would be no impacts from expansive soil or subsidence from the No Project Alternative.

Hazards

Depending on the nature of ongoing agricultural activities the potential for accidental releases of hazardous materials would be similar under this alternative. If demolition of on-site structures occurred, associated hazardous materials impacts would be similar. Continued agricultural operations would expose people and the environment to agricultural chemicals at existing levels.

Hydrology and Water Quality

Under the No Project Alternative, impacts on water quality could be similar due to agricultural runoff and associated discharge of sediments. No groundwater impacts would occur resulting from backfilling of excavations, although groundwater pumping could still occur in association with farming. If the property owner chose to implement streambank stabilization along Cache Creek, potential hydrologic changes resulting in downstream erosion could be similar. Without streambank stabilization, this alternative could result in increased bank erosion, increased sediment loads, and increased contribution of mercury to Cache Creek and the Sacramento-San Joaquin River Delta. Because no water bodies would be created during aggregate extraction, no methylation of mercury or bioaccumulation would occur.

Land Use

This alternative would have no land use impacts. Current agricultural use of the site would continue.

Mineral Resources

The No Project Alternative would preserve aggregate on the site for extraction after 2026 consistent with the existing SGR zoning.

Traffic and Circulation

The No Project Alternative would avoid increased traffic associated with an additional 385 loaded truck trips daily on the existing haul routes. However, truck traffic associated with farming and harvest would continue under existing conditions.

Conclusion

Under this alternative, many of the same impacts could occur, although likely at a lower level of intensity. However, the land uses that could continue on the project site under this alternative require no discretionary permits and therefore, no mitigation measures would apply under this alternative.

ALTERNATIVE 2: REDUCED TONNAGE/ACREAGE ALTERNATIVE

This alternative analyzes a project of reduced intensity. Under this alternative, one half of the requested tonnage would be extracted on a total and annual basis - approximately 500,000 tons mined annually (a maximum of 435,000 tons sold) - assuming about one half the project area (approximately 156 acres) is mined to the full depth of the resource (see Figure 6-1).

Material processing techniques would be the same as for the project. This alternative assumes implementation of a Streambank Stabilization Plan (SSP) along the north bank of Cache Creek and within the project site.

As with the proposed project, mined aggregate would be processed at a new rock processing plant on the southern portion of the reduced mining area. This alternative would be mined in two phases (one fewer phase than the proposed project), beginning with the northeastern corner or the project area. This area (Phase 1) would be reclaimed for agricultural use. Phase 2 would become an open lake surrounded by associated habitat. Under this alternative, the existing residence would not be demolished.

Consistency with Project Objectives

This alternative would meet most of the project objectives except the specified total tonnage.

Impacts of the Alternative

Aesthetics

Similar to the project, Alternative 2 would change the visual quality of the site and its surroundings. This alternative would require construction of processing facilities of the same height (72 feet). These facilities would be visible from County Road 87. Similar to the proposed project, the site would be reclaimed. Significant impacts would be reduced to less than significant through mitigation of berms and trees along the southern and eastern edges of the property

Agriculture

Alternative 2 would remove approximately 118 acres of Prime or Unique Farmland from production and convert 157 acres of agricultural land to nonagricultural use for up to 30 years, permanently converting 44 acres of Prime or Unique Farmland to nonagricultural use. The conversion would result in a reduction in productivity. Similar to the project, these impacts would be significant and would need to be offset by permanent preservation of agricultural land elsewhere. Similar to the project, Alternative 2 would result in conflict with a Williamson Act contract. As with the project, this conflict would be mitigated by modifying the mining schedule.

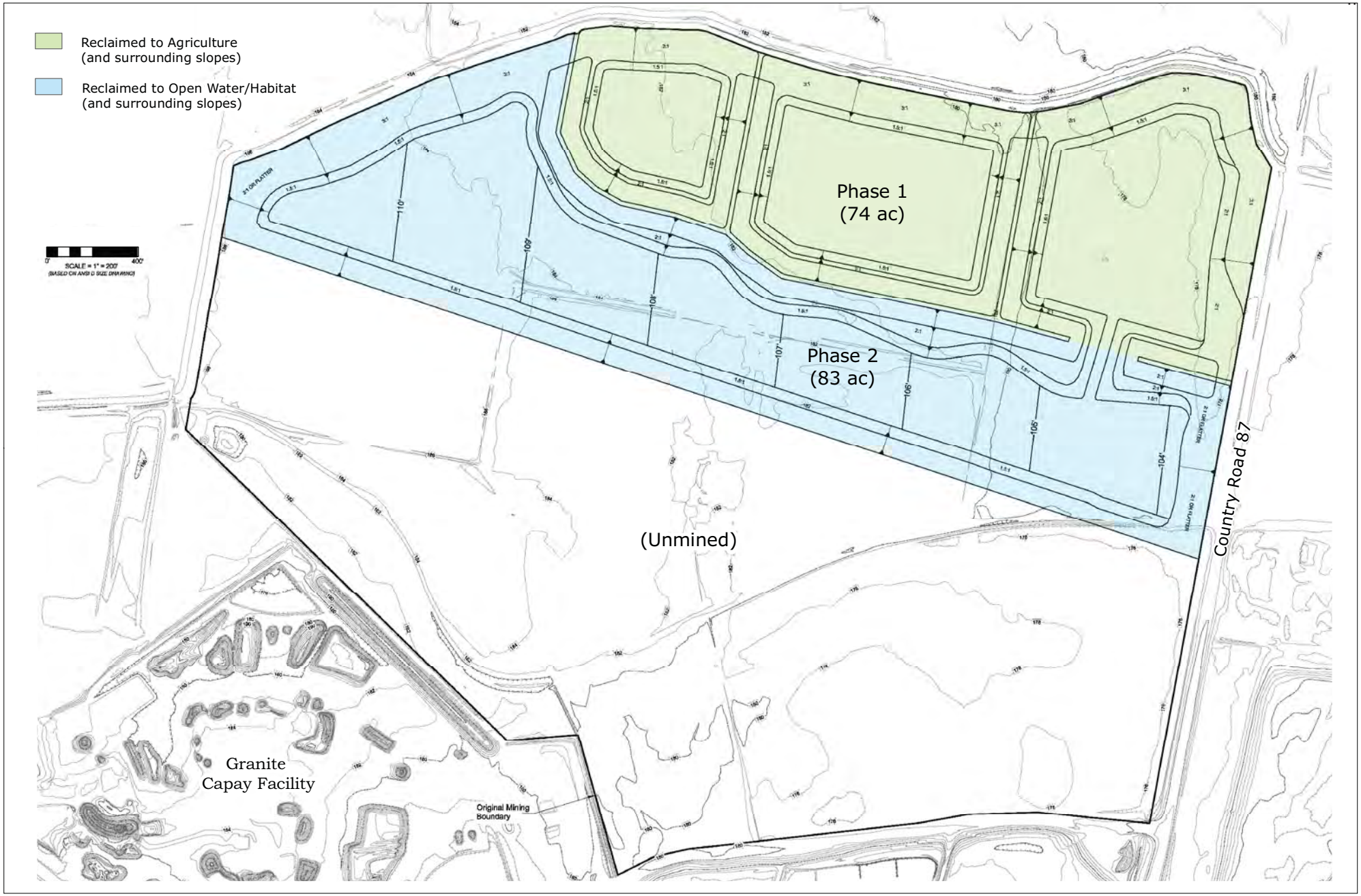

FIGURE 6-1

DRAFT EIR
Granite Esparto Mining and Reclamation Project
REDUCED TONNAGE/ACREAGE ALTERNATIVE

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Air Quality

Alternative 2 emissions would be proportionately lower than the proposed project, affecting attainment of the federal and state ambient air quality standards by either violating or contributing to an existing violation (significant and unavoidable). Although one half the aggregate would be produced, Alternative 2 would require similar equipment and would contribute significantly to air emissions of ozone (O_3) precursors and PM_{10} from mobile equipment, vehicles, and fugitive dust. As with the proposed project, implementation of a variety of measures would reduce emissions, but these impacts would remain significant and unavoidable.

Biological Resources

Biological impact of Alternative 2 would be similar to the proposed project. Loss of habitat would adversely affect special-status wildlife species, including nesting birds and Swainson's hawk. Construction of streambank stabilization measures near Cache Creek to maintain setbacks and flood protection would affect riparian habitat, including cottonwood stands and willow scrub. Construction adjacent to Cache Creek could result in impacts on western pond turtle and bank swallow. Mitigation of these impacts would include pre-construction surveys, nest avoidance, agency consultation, participation in the Yolo County Habitat Conservation Plan (HCP) mitigation fee program for Swainson's hawk, protection of other migratory birds including bank swallow, and restoration of riparian habitat.

Climate Change

Alternative 2 would result in slightly lower GHG emissions. Likewise it could be affected by hydrologic changes resulting from climate change. These would include the potential for sea level rise and changes in weather and flooding patterns. Climate change could also cause an increased risk of wildfire in the area. This alternative would be subject to the same mitigation measures as identified for the project.

Cultural Resources

Like the proposed project, Alternative 2 could affect previously undiscovered prehistoric and historic resources, human remains, or paleontological resources. Although Alternative 2 would affect only one half the area, the region is sensitive for resources and potentially significant impact of discovering resources during construction. Similar to the proposed project, the Applicant would be responsible for monitoring, contacting Yolo County, and mitigation of artifacts and fossils if found per County code.

Geology and Soils

Because Alternative 2 would be implemented on the same parcels, it would have similar potential for slope failure or significant erosion and other geological impacts. Under Alternative 2, ground shaking and related liquefaction from earthquakes could damage facilities and pose a safety risk to site visitors. Alternative 2 would also have a potential for slope failure or significant erosion. Like the proposed project, these impacts would be mitigated to less than significant by stabilizing equipment, design of slopes to avoid slope failure, use of safety equipment, assessment of fill stability, adherence to the channel improvement strategy, and flood protection. Overall, Alternative 2 would have less than significant impacts on geology and soils, similar to the project.

Hazards

Alternative 2 could result in exposure of the public or the environment from accidental releases of hazardous materials similar to the project. Also, excavation of contaminated soil during mining or reclamation could result in exposure. However, under this alternative, the existing residence would not be demolished, because it is not within the area that would be disturbed, which would reduce the potential for exposure to asbestos, lead, or other hazardous building materials.

Hydrology and Water Quality

Alternative 2 would result in hydrologic and water quality impacts similar to the proposed project. Excavation and aggregate processing under Alternative 2 would discharge sediments in site storm water. Groundwater pumping and backfilling of excavations could affect groundwater quality and quantity. Streambank stabilization could result in hydrologic changes, downstream erosion, and mercury loading in Cache Creek. Creation of on-site water bodies would create the risk of aquatic exposure to chemical spills and methylation of mercury. This alternative would be subject to the same mitigation measures as identified for the project.

Land Use

Alternative 2 would be similar to the project in that it would create no incompatibilities between land uses, would not significantly alter the type or intensity of land use within an area, and would not substantially change the existing jobs/housing imbalance. Additionally, assuming approval of requested entitlements, and implementation of identified mitigation measures and conditions of approval, Alternative 2 would not conflict with any plans, policies, and regulations.

Mineral Resources

As compared to the project, this alternative would make 50 percent of the SGR tonnage available for mining prior to 2026. The change in zoning from SGR to Sand and Gravel (SG) is the same under both scenarios; however, Alternative 2 would require fewer acres to be rezoned to SG.

Traffic and Circulation

Alternative 2 would result in less intense traffic increases from deliveries and truck trips for hauling of processed aggregate. This impact would be less than significant; however, the Applicant would be required to maintain pavement in the area. Similarly, Alternative 2 would increase traffic hazards on rural roads near the site due to additional vehicle trips associated with operation of the processing plant. Accordingly, the Applicant would be responsible for road improvements.

Conclusion

Alternative 2 would have impacts generally similar to the project but less intense. Because less aggregate would be mined and processed, air quality, biology, climate change, geology, hydrology, and traffic impacts would be similar but less intense. Aesthetics impacts would be nearly identical to the proposed project because of the height of the equipment and changes to the site character. Agriculture and cultural resources impacts would be similar but reduced to the proposed project because much of the same land area and acreage of Prime Farmland would be affected. This alternative would meet the basic project objectives but would not meet the project tonnage goal.

ALTERNATIVE 3: ALTERNATIVE LOCATION

This alternative assumes the same requested tonnage but at an alternate SGR zoned site within the CCAP study area. The acreage currently zoned SGR is limited to about 853 acres in the same general area as the project, on both the north and south sides of the creek (see Figure 6-2). This analysis assumes the project would implement creek restoration and/or stabilization measures, pursuant to the CCRMP and CCIP, along the creek banks at the alternative locations as shown on Figure 6-2.

Material processing techniques would be the same as for the project. As with the proposed project, mined aggregate would be processed at a new on-site rock processing plant; its location would depend on which alternative site was chosen. Mined areas would be reclaimed in a manner similar to the project.

Consistency with Project Objectives

The CEQA Guidelines encourage the evaluation of alternate locations as alternatives (CEQA Guidelines Section 15126.6[b]), if the alternative site would reduce or eliminate significant impacts on the environment. Consideration of an alternate location would comply with this guideline and could generally meet the project objectives.

Impacts of the Alternative

Aesthetics

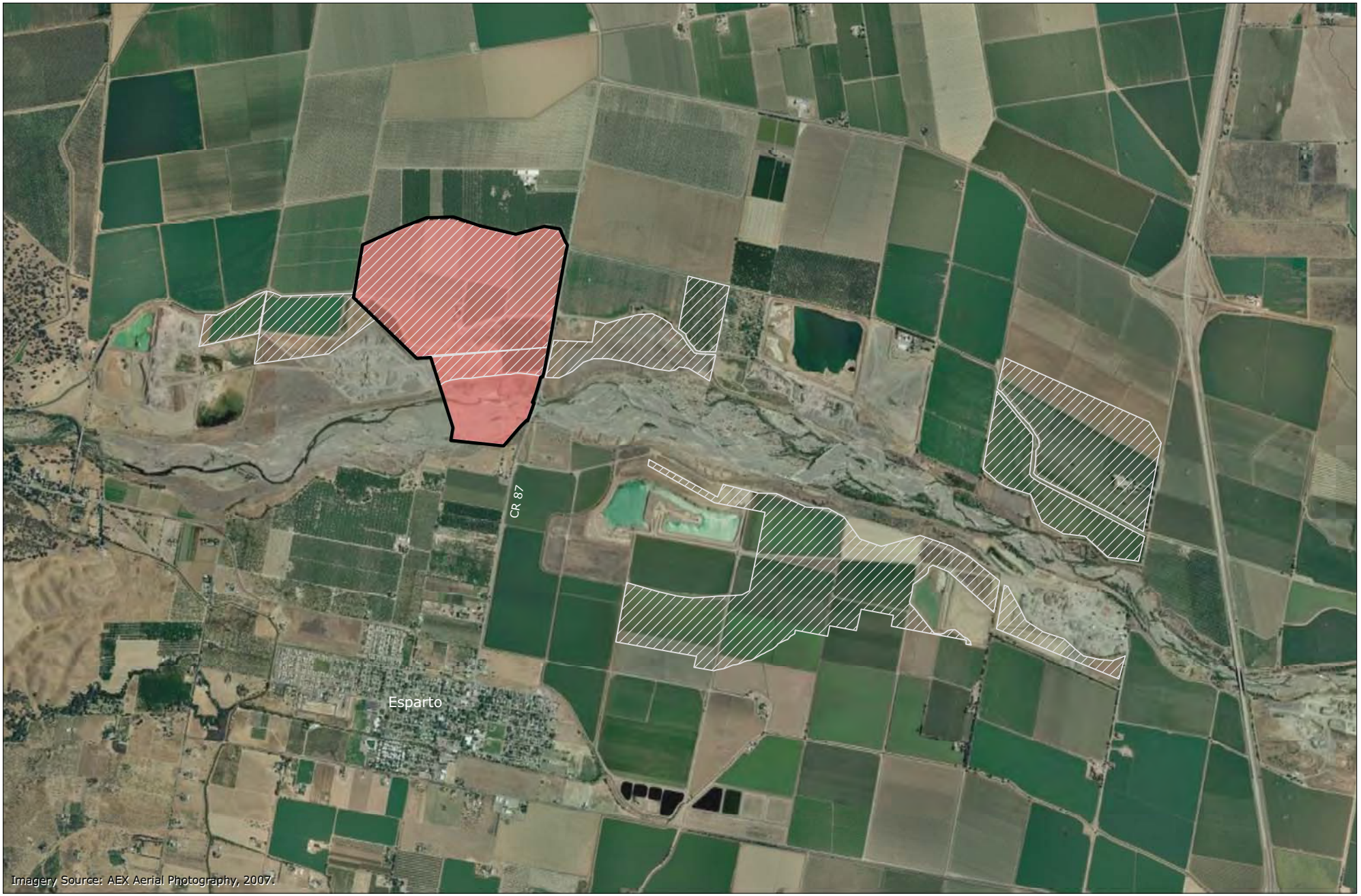
Similar to the project, Alternative 3 would change the visual character of the area. This alternative would require construction of processing facilities of the same height (72 feet). Several sites to the east and southwest of the proposed project would be visible from State Route (SR) 16, a locally-designated scenic highway. Similar to the proposed project, the site would be reclaimed. Significant impacts would be reduced through visual screening. No additional mitigation measures would be required under this alternative.

Agriculture

Alternative 3 would likely remove Prime or Unique Farmland from production and convert agricultural land to nonagricultural use. The conversion would result in a reduction in productivity. Similar to the project, these impacts would be significant and would need to be mitigated by off-site land preservation. A potential Williamson Act conflict associated with this alternative would depend on whether the specific site is covered under a contract and whether it is in place at the time mining would commence. Mitigation Measure 4.3-2 (or its equivalent) regarding the Williamson Act contract and mining schedule would apply.

Air Quality

Alternative 3 emissions would be similar to the proposed project, affecting attainment of the federal and state ambient air quality standards by either violating or contributing to an existing violation (SU). Alternative 3 would use the same equipment as the project and would contribute significantly to air emissions of O_3 precursors and PM_{10} from mobile equipment, vehicles, and fugitive dust. Sensitive receptors may be located closer to the alternative locations, which would increase the potential impacts of exposing those receptors to pollutants as compared with the project. As with the proposed project, implementation of a variety of measures would reduce emissions; but these impacts would remain significant and unavoidable regardless of location.



LEGEND

Offsite Alternative Locations (Sand & Gravel Reserve)

Proposed Project Site

N

0 750 1,500 3,000

FEET

FIGURE 6-2

DRAFT EIR

Granite Esparto Mining and Reclamation Project

ALTERNATIVE LOCATION

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Biological Resources

Biological impacts of Alternative 3 would likely be similar to the proposed project. Loss of habitat would adversely affect special-status wildlife species, including nesting birds and Swainson's hawk. Mitigation of these impacts would include pre-construction surveys, nest avoidance, and participation in the Yolo County HCP mitigation fee program for Swainson's hawk. Implementation of CCRMP streambank stabilization measures would likely be similar, resulting in the potential for impacts on riparian vegetation adjacent to Cache Creek and on western pond turtle and bank swallow. Compliance with identified measures would mitigate these impacts.

Climate Change

Climate change impacts of Alternative 3 would be identical to the project. The same mitigation measures would apply.

Cultural Resources

Like the proposed project, Alternative 3 could affect previously undiscovered prehistoric and historic resources, human remains, or paleontological resources. Mitigation would include monitoring, contacting Yolo County, and mitigation of artifacts and fossils if found.

Geology and Soils

Geological impacts of Alternative 3 would be similar to the project. Soil types would likely be comparable. Like the proposed project, these impacts would be mitigated to less than significant by stabilizing equipment, design of slopes to avoid slope failure, and use of safety equipment, assessment of fill stability, and flood protection.

Hazards

Alternative 3 could result in exposure of the public or the environment from accidental releases of hazardous materials similar to the project. Also, excavation of contaminated soil during mining or reclamation could result in exposure. Under this alternative, the existing residence would not be demolished which would reduce the potential for exposure to asbestos, lead, or other hazardous building materials; however there may be structures or residences on the alternative sites that would require demolition, in which case these impacts would be the same.

Hydrology and Water Quality

Alternative 3 would result in hydrologic and water quality impacts similar to the proposed project. Similar to the proposed project, excavation and aggregate processing under Alternative 2 would discharge sediments in site storm water. Groundwater pumping and backfilling of excavations could affect groundwater quality and quantity. Creation of on-site water bodies would create exposure to potential risk of spills and methylation of mercury. These effects would be mitigated through erosion control, aquifer testing, equipment maintenance, and other best management practices.

Land Use

Depending on precise location, Alternative 3 may result in land use impacts not expected to occur under the project. Impacts could include incompatibilities between land uses, significantly altered type or intensity of land use within an area, displacement of existing housing, substantial

changes to the existing jobs/housing imbalance, and/or conflicts with applicable plans, policies, and regulations. However, because the alternative sites are planned for future mining, it is assumed that consistency with the CCAP and related ordinances, approval of requested entitlements, and implementation of identified mitigation measures and conditions of approval would likely fully mitigate land use impacts.

Mineral Resources

Like the project, this alternative would result in SGR zoned lands being mined in 2010 instead of after 2026. The change in zoning from SGR to SG is the same under both scenarios.

Traffic and Circulation

Except for site-specific issues, such as truck turnouts, traffic and circulation impacts would be generally the same as for the project. The Applicant would be required to maintain pavement wherever the loaded truck trips would occur. Alternative 3 would increase traffic hazards on rural roads near the alternate site, as compared to existing conditions. Accordingly, the Applicant would be responsible for road improvements.

Conclusion

The impacts associated with Alternative 3, Alternate Location, would generally be the same as the proposed project. This alternative could achieve most of the project objectives; however, the Applicant does not own or control the alternative locations and therefore has no ability to carry out the project under this alternative. It is unknown whether the Applicant could reasonably acquire or control these alternative sites. Therefore, pursuant to Section 15126.6(f)(1) of the CEQA Guidelines this alternative may not be feasible.

ALTERNATIVE 4: OFF-SITE PROCESSING ALTERNATIVE (SEQUENTIAL MINING)

This alternative analyzes sequential mining of the existing Granite Capay site first, followed by the adjacent proposed Granite Esparto site. Mining at the proposed Esparto site would be assumed to commence in 2021. Aggregate resources from both sites would be processed at the Granite Capay processing facilities. A new mining plant at the Granite Esparto site would not be included. This alternative assumes that the annual allotment of 1 million tons sold at the Granite Capay site would be increased by 870,000 tons sold annually which would allow for an accelerated pace of mining at each of the sites (see Figure 6-3).

Mined areas of the project site would be reclaimed in the same manner as the proposed project and the SSP would be implemented along the north bank of Cache Creek.

Consistency with Project Objectives

Alternative 4 would meet all of the project objectives.

FIGURE 6-3

DRAFT EIR
Granite Esparto Mining and Reclamation Project
OFF-SITE PROCESSING ALTERNATIVE (SEQUENTIAL MINING)

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Impacts of the Alternative

Aesthetics

Similar to the project, Alternative 4 would change the visual character of the area. These significant impacts would be mitigated through the use of berms and trees along the southern and eastern edges of the property. This alternative would not require construction of processing facilities and therefore, no facilities would be visible from County Road 87. Overall aesthetic impacts from this alternative would be less than the project.

Agriculture

Agricultural impacts of Alternative 4 would generally be the same as the proposed project. Prime or Unique Farmland would be removed from production, and agricultural land would be converted to nonagricultural use. Similar to the project, these impacts would require offsets. Because this alternative would sequentially mine the project site, land under Williamson Act contract would not be mined until after its nonrenewal period has expired (2013). Therefore, Alternative 4 would not conflict with a Williamson Act contract.

Air Quality

Air emissions at any given point in time would be less under this alternative than under the proposed project because the Esparto site would not have a second separate processing facility operating at the same time as the existing plant at the adjacent Capay site. Material from the Capay site and the Esparto site would be consolidated on the Capay site. However, cumulative emissions would be the same because that same total amount of aggregate material would be processed under either scenario. These emissions would still affect attainment of federal and state ambient air quality standards by either violating or contributing to an existing violation (SU). As with the proposed project, implementation of a variety of measures would reduce emissions, but these impacts would remain significant and unavoidable.

Biological Resources

Biological impacts of Alternative 4 would be similar to the proposed project as the same site would be mined. This alternative would affect nesting birds, Swainson's hawk, riparian habitat, western pond turtle and bank swallow. Mitigation requirements for Alternative 4 would include pre-construction surveys, nest avoidance, agency consultation, participation in the Yolo County HCP mitigation fee program for Swainson's hawk, protection of other migratory birds including bank swallow, and restoration of riparian habitat.

Climate Change

GHG emissions at any given point in time would be less under this alternative than under the proposed project because the Esparto site would not have a second separate processing facility operating at the same time as the existing plant at the adjacent Capay site. Material from the Capay and Esparto sites would be consolidated on the Capay site. However, cumulative GHG emissions would be the same because that same total amount of aggregate material would be processed under either scenario.

Similar to the project, Alternative 4 could be affected by hydrologic changes resulting from climate change. These would include the potential for sea level rise and changes in weather and

flooding patterns. Climate change could also cause an increased risk of wildfire in the area. Compliance with identified measures would mitigate these impacts.

Cultural Resources

Cultural resources impacts of Alternative 4 would be identical to the proposed project. Alternative 4 could affect previously undiscovered prehistoric and historic resources, human remains, or paleontological resources. Significant impacts from discovery of resources during construction would require monitoring, contacting Yolo County, and mitigation of artifacts and fossils if found.

Geology and Soils

Because Alternative 4 would be implemented on the same parcels as the project, it would have similar slope failure or erosion potential. Under Alternative 4, ground shaking and related liquefaction from earthquakes could damage facilities and pose a safety risk to site visitors. Like the proposed project, these impacts would be mitigated to less than significant by stabilizing equipment, design of slopes to avoid slope failure, and use of safety equipment, assessment of fill stability, adherence to the channel improvement strategy, and flood protection. Overall, impacts on geology and soils from Alternative 4 would be less than significant, similar to the project.

Hazards

Impacts from accidental releases of hazardous materials, excavation of contaminated soil and demolition of the existing residence would be similar to the project.

Hydrology and Water Quality

Alternative 4 would result in hydrologic and water quality impacts similar to the proposed project. Excavation would result in sediment discharges in storm water. Backfilling of excavations could affect groundwater quantity. Streambank stabilization could result in hydrologic changes, downstream erosion, and mercury loading in Cache Creek. Creation of on-site water bodies would create exposure to risk of spills and methylation of mercury. These effects would be mitigated through erosion control, aquifer testing, equipment maintenance, and other best management practices.

Land Use

Alternative 4 would be similar to the project in that it would create no incompatibilities between land uses, would not significantly alter the type or intensity of land use within an area, would displace only one existing house, and would not substantially change the existing jobs/housing imbalance. Additionally, assuming approval of requested entitlements, and implementation of identified mitigation measures and conditions of approval, Alternative 4 would not conflict with any plans, policies, and regulations.

Mineral Resources

Like the project, this alternative would result in mining of SGR zoned lands prior to 2026. The change in zoning from SGR to SG is the same under both scenarios, although under this scenario mining of the SGR lands would not commence until 2021, which would be 11 years later than under the project and only five years sooner than anticipated under the SGR zoning.

Traffic and Circulation

Alternative 4 would result in generally the same traffic increases from deliveries and truck trips for hauling of processed aggregate. The Applicant would be required to maintain pavement in the area and would be responsible for road improvements.

Conclusion

The impacts associated with Alternative 4 are generally the same as the proposed project because Alternative 4 would be implemented on the same site. Biological, cultural, geological, and mineral impacts would be identical to the proposed project. Aesthetics impacts would be reduced because no new processing plant would be constructed, affecting views from County Road 87. Air quality and climate change impacts may be lower at any given point in time because plant operations would be consolidated at Capay, but cumulative emissions would remain the same. As with the project, cumulative climate change impacts would be significant and unavoidable because the same amount of material would be processed. This alternative would achieve the project objectives.

ENVIRONMENTALLY SUPERIOR ALTERNATIVE

Pursuant to CEQA Guidelines Section 15126.6(e)(2), an environmentally superior alternative must be identified from among the other alternatives if the "No Project" alternative would otherwise be the environmentally superior alternative. The environmentally superior alternative is the alternative that would result in the fewest or least significant environmental impacts. The No Project Alternative could be viewed as the environmentally superior alternative because it would avoid all of the potentially significant impacts of the proposed project, including significant and unavoidable air quality and potential climate change impacts. However, the No Project Alternative would not accomplish the objectives.

Table 6-2 provides a summary comparison of significance levels for identified impacts under each alternative. The proposed project and all the other construction alternatives would result in similar impacts. Under Alternative 2, Reduced Tonnage, several impacts would be less intense but they would remain significant. Depending on the location, Alternative 3 could avoid several impacts; however, most of the significant impacts (e.g., biological) and unavoidable significant impacts (e.g., climate change) would remain. Overall, this alternative is infeasible because the Applicant does not own or control any of the alternative locations. Alternative 4, Sequential Mining, is essentially identical to the proposed project, but it would reduce several impacts associated with the processing plant and conflicts with a Williamson Act contract given the altered extraction schedule. Therefore, Alternative 4 (Sequential Mining) is the environmentally superior alternative.

Alternatives Considered but Rejected for Further Analysis

The following additional project alternative was considered but rejected from further comparative analysis for the reasons given below:

Reduced Acreage Alternative. This alternative would analyze the requested tonnage on one half of the proposed mining site, approximately 156 acres. This alternative assumes the same tonnage as requested for the project. As a result, mining over time would be assumed to extend twice as deep as proposed.

This alternative was rejected as infeasible. The Applicant has provided technical data demonstrating the existence of a 30-foot thick layer of clay at the depth currently proposed for excavation (Wallace-Kuhl & Associates, Inc. 2007d). Existing extraction methods would not allow economically feasible penetration of this layer and excavation beneath it. Therefore, this alternative is technologically and economically infeasible. Additionally, further, excavation to this depth may not comply with SMARA safety limits on side slopes. The potential advantages of this alternative were captured in Alternative 2 which examines both reduces tonnage and reduces acreage.

Off-site Processing (Concurrent Mining). This alternative would analyze processing or proposed tonnage from the proposed site at the adjacent Capay processing plant rather than at a separate second plant as proposed under the project. Under this alternative the proposed mining, phasing, and reclamation would all remain the same as under the project.

This was rejected in favor of Alternative 4 (sequential mining) because Alternative 4 would achieve the project objectives and has the added environmental advantage of reducing impacts associated with the processing plant. It also avoids conflicts with a Williamson Act contract given the altered extraction schedule.

Table 6-2 Comparison of Project and Alternatives Impacts

Resource Area	Project Impact	Impact Conclusion	Alternative 1: No Project	Alternative 2: Reduced Tonnage/Acreage Alternative	Alternative 3: Alternative Location	Alternative 4: Off-site Processing Alternative (Sequential Mining)
Aesthetics	4.2-1: Block a scenic area, vista, or view	LS	<	=	=	=
	4.2-2: Substantial impacts to scenic resources along a scenic corridor	LS	<	=	=	=
	4.2-3: Change the existing visual character or quality	S	<	=	=	<
	4.2-4: Conflict with applicable plans, policies, and regulations that would result in an adverse physical change in the environment	LS	<	=	=	=
Agriculture	4.3-1: Remove 287 acres of Prime or Unique Farmland for up to 30-years, permanently converting 213 acres to non-agricultural use	SU	<	<	=	=
	4.3-2: Conflict with an existing Williamson Act contract	S	<	=	=	<
	4.3-3: Conflict with applicable plans, policies, and regulations that would result in an adverse physical change in the environment	LS	<	=	=	=
Air Quality	4.4-1: Conflict with or obstruct an air quality plan	LS	<	=	=	=
	4.4-2: Violate an air quality standard or contribute to an existing or projected air quality violation	SU	<	=	=	=

Table 6-2 Comparison of Project and Alternatives Impacts

Resource Area	Project Impact	Impact Conclusion	Alternative 1: No Project	Alternative 2: Reduced Tonnage/Acreage Alternative	Alternative 3: Alternative Location	Alternative 4: Off-site Processing Alternative (Sequential Mining)
	4.4-3: Net increase of any criteria pollutant for which the project region is in nonattainment	SU	<	=	=	=
	4.4-4: Expose sensitive receptors to substantial pollutant concentrations	LS	<	=	>	=
	4.4-5: Conflict with applicable plans, policies, and regulations that would result in an adverse physical change in the environment	LS	<	=	=	=
Biological Resources	4.5-1: Activities would adversely affect sensitive wildlife species	S	>	=	=	=
	4.5-2: Impact riparian vegetation and habitat	S	>	=	=	=
	4.5-3: Impact federally protected wetlands	S	<	=	=	=
	4.5-4: Conflict with applicable plans, policies, and regulations that would result in an adverse physical change in the environment	LS	<	=	=	=
Climate Change	4.6-1: Result in net new increases in GHG emissions	S	<	<	=	=
	4.6-2: Conflict with an applicable plan, policy, or regulation to reduce the emissions of GHGs	S	<	<	=	=
	4.6-3: The project may experience adverse physical effects from future effects of Global Climate Change	S	=	=	=	=
Cultural Resources	4.7-1: Change the significance of a historical resource	LS	=	=	=	=
	4.7-2: Impact historic sites EC-07-17, -18, and -19 and eleven isolated artifacts	LS	=	=	=	=
	4.7-3: Impact previously undiscovered prehistoric and historic resources and human remains	S	=	=	=	=
	4.8-4: Impact previously undiscovered paleontological resources	LS	=	=	=	=
	4.7-5: Conflict with applicable plans, policies, and regulations that would result in an adverse physical change in the environment	LS	=	=	=	=
Geology and Soils	4.8-1: Earthquakes could damage project facilities and pose a safety risk to site visitors	S	<	=	=	=

Table 6-2 Comparison of Project and Alternatives Impacts

Resource Area	Project Impact	Impact Conclusion	Alternative 1: No Project	Alternative 2: Reduced Tonnage/Acreage Alternative	Alternative 3: Alternative Location	Alternative 4: Off-site Processing Alternative (Sequential Mining)
	4.8-2:Potential for slope failure or significant erosion	LS	=	=	=	=
	4.8-3: Cause exposure to unstable soils	LS	<	=	=	=
	4.8-4: Disturb or destroy unique geologic features	LS	<	=	=	=
	4.8-5: Conflict with applicable plans, policies, and regulations that would result in an adverse physical change in the environment	LS	<	=	=	=
Hazards	4.9-1: Accidental releases during the routine transport, use, or disposal of hazardous materials	LS	=	=	=	=
	4.9-2: Excavation of contaminated soil could result in exposure	LS	=	=	=	=
	4.9-3: Demolition and removal of existing site structures may result in exposure to hazardous building materials	LS	<	<	=	=
	4.9-4: Conflict with applicable plans, policies, and regulations that would result in an adverse physical change in the environment	LS	=	=	=	=
Hydrology & Water Quality	4.10-1: Violate water quality standards through discharge of storm water	LS	>	=	=	=
	4.10-2: Increase in mercury loading to Cache Creek from erosion	S	<	=	=	=
	4.10-3: Operational water demands could deplete groundwater supplies	LS	=	=	=	=
	4.10-4: Deplete groundwater supplies from backfilling areas with fine sediments	S	<	=	=	=
	4.10-5a: Alter the existing drainage pattern of the site or area, resulting in erosion or sedimentation, or result in on or off-site flooding	LS	>	=	=	=
	4.10-5b: In-stream stabilization structures could contribute to downstream erosion	S	<	=	=	=
	4.10-6: Runoff water exceeding the capacity of planned storm water drainage or contribute additional sources of polluted runoff	N	=	=	=	=
	4.10-7a: Degrade water quality by pumping groundwater	S	=	=	=	=

Table 6-2 Comparison of Project and Alternatives Impacts

Resource Area	Project Impact	Impact Conclusion	Alternative 1: No Project	Alternative 2: Reduced Tonnage/Acreage Alternative	Alternative 3: Alternative Location	Alternative 4: Off-site Processing Alternative (Sequential Mining)
	4.10-7b: Open water areas created during reclamation could become eutrophic, resulting in degraded water quality	LS	<	=	=	=
	4.10-7c: Increase the potential for degradation of water quality by discharge of chemicals	S	<	=	=	=
	4.10-7d: Bioaccumulation of mercury in reclaimed water bodies	S	<	=	=	=
	4.10-8: Place structures in flood hazard zone.	LS	<	=	=	=
	4.10-9: Conflict with applicable plans, policies, and regulations that would result in an adverse physical change in the environment	LS	=	=	=	=
Land Use	4.11-1: Create substantial incompatibilities between land uses	LS	<	=	>	=
	4.11-2: Alter the type or intensity of land use within an area	LS	<	=	>	=
	4.11-3: Affect the local jobs/housing relationship	LS	<	=	>	=
	4.11-4: Conflict with land use plans, policies, or regulations that would result in an adverse physical change in the environment	LS	<	=	=	=
Mineral Resources	4.12-1: Result in loss of availability of a locally important mineral resource recovery site	LS	<	<	=	=
	4.12-2: Conflict with applicable plans, policies, and regulations that would result in an adverse physical change in the environment	LS	<	=	=	=
Traffic and Circulation	4.13-1: Cause substantial increases in traffic	S	<	<	=	=
	4.13-2: Add trips to the roadway system	LS	<	<	=	=
	4.13-3: Conflict with applicable plans, policies, and regulations that would result in an adverse physical change in the environment	LS	<	=	=	=

Notes:

B: Beneficial Impact
LS: Less than Significant Impact
N: No Impact
S: Significant but Mitigable Impact
SU: Significant and Unavoidable Impact
= Impacts same as project
< Fewer impacts (less severe) than project
> More impacts (greater) than project

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CHAPTER 7.0
REPORT PREPARATION

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7.4 ACRONYMS

°C	Celsius
°F	degrees Fahrenheit
AB	Assembly Bill
ABAG	Association of Bay Area Governments
ACEP	Agricultural Conservation Easement Program
A-P	Agricultural Preserve
APCD	Air Pollution Control District
A-PEFZ	Alquist-Priolo Earthquake Fault Zone
A-PFZA	Alquist-Priolo Fault Zoning Act
APN	Assessor's Parcel Number
AQAP	Air Quality Attainment Plan
AQMD	Air Quality Management District
AST	aboveground storage tank
BMPs	Best Management Practices
BrA	Brentwood silty-clay loam
Business Plan	Hazardous Materials Business Plan
CAL FIRE	California Department of Forestry and Fire Protection
Cal/OSHA	California Department of Industrial Relations, Division of Occupational Safety and Health
Cal-EPA	California Environmental Protection Agency
Caltrans	California Department of Transportation
CAP	Clean Air Plan
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CBC	California Building Code
CCAP	Cache Creek Area Plan
CCIP	Cache Creek Improvement Program
CCR	California Code of Regulations
CCRMP	Cache Creek Resource Management Plan
CCTS	Central California Taxonomic System
CDFG	California Department of Fish and Game
CEC	California Energy Commission

CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Responses, Compensation, and Liability Act
CFGC	California Fish and Game Code
CFR	Code of Federal Regulations
cfs	cubic feet per second
CFZ	Concord/Green Valley Fault Zone
CGS	California Geological Survey
CH_4	methane
CNDDB	California Natural Diversity Data Base
CNEL	Community Noise Equivalent Level
CNPS	California Native Plant Society
CO	carbon monoxide
CO_2	carbon dioxide
CO_2eq	carbon dioxide equivalents
CRHR	California Register of Historical Resources
CRSBB	Coast Range–Sierran Block Boundary
CUPA	Certified Unified Program Agency
CVRWQCB	Central Valley Regional Water Quality Control Board
CWA	Clean Water Act
dBA	A-weighted decibel
DEHP	diethylhexyl phthalate
DFG	Department of Fish and Game
DOC	Department of Conservation
DPM	Diesel particulate matter
DTSC	Department of Toxic Substances Control
DWR	Department of Water Resources
ECAC	Esparto Community Advisory Committee
ECORP	ECORP Consulting, Inc.
EETs	emission estimation techniques
EIR	Environmental Impact Report
EPA	Environmental Protection Agency
EPS	emission performance standard
ERP	Emissions Reduction Plan
FEMA	Federal Emergency Management Agency
FESA	Federal Endangered Species Act

FHDP	Flood Hazard Development Permit
FMMP	Farmland Mapping and Monitoring Program
g	gravity
GHG	greenhouse gas
gpm	gallons per minute
HAZWOPER	Hazardous Waste Operations and Emergency Response
HCP	Habitat Conservation Plan
HFC	hydrofluorocarbon
HRA	Health Risk Assessment
I-	Interstate
ICMMO	In-Channel Maintenance Mining Ordinance
IFI	Important Farmlands Inventory
IMP	Interim Management Plan
IPCC	Intergovernmental Panel on Climate Change
JPA	Joint Powers Agency
km	kilometers
Lm	Loamy alluvial land
LOS	level of service
LSEs	load serving entities
M	magnitude
mg/kg	milligram per kilogram
mg/L	milligram per liter
mL	mililiter
mm	millimeter
MMI	Modified Mercalli Intensity
MOU	Memorandum of Understanding
MRZ	Mineral Resources Zone
MVM	million vehicle miles
MW	Megawatts
N_2O	nitrous oxide
NAS	National Academy of Sciences
NCCP	Natural Community Conservation Plan
NFIP	National Flood Insurance Program
NGVD	National Geodetic Vertical Datum
NHPA	National Historic Preservation Act

ng/L	nanogram per liter
NMFS	National Marine Fisheries Service
NO_2	nitrogen dioxide
NOP	Notice of Preparation
NO_x	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resource Conservation Service
NRHP	National Register of Historic Places
O_3	ozone
OAP	Ozone Attainment Plan
OCMP	Off-Channel Mining Plan
OCSMO	Off-Channel Surface Mining Ordinance
ºF	degrees fahrenheit
OPC	Ocean Protection Council
OPR	Office of Planning and Research
PCBs	polychlorinated biphenyls
PFC	perfluorocarbon
PG&E	Pacific Gas and Electric
PHF	peak hour factors
PM_{10}	Particulate Matter less than 10 microns in diameter
$PM_{2.5}$	Particulate Matter less than 2.5 microns in diameter
ppm	parts per million
PRC	Public Resources Code
PUC	Public Utilities Commission
RCRA	Resource Conservation and Recovery Act
Rh	Riverwash
ROG	reactive organic gas
RWQCB	Regional Water Quality Control Board
SAFS	Ssan Andreas Fault System
SARA	Superfund Amendments and Reauthorization Acts
SB	Senate Bill
SCAQMD	South Coast Air Quality Management District
SF_6	sulfur hexafluoride
SG	Sand and Gravel
SGR	Sand and Gravel Reserve

SMARA	Surface Mining and Reclamation Act
SMRO	Surface Mining Reclamation Ordinance
Sn	Soboba gravelly sandy loam
SNFFS	Sierra Nevada Foothills Fault System
SO_2	sulfur dioxide
SPCC	Spill Prevention Control and Countermeasure Plan
SR	State Route
SSP	Streambank Stabilization Plan
SVAB	Sacramento Valley Air Basin
SWITRS	Statewide Integrated Traffic Record System
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TAC	Technical Advisory Committee
the Applicant	Granite Construction Company, Inc.
the project	Granite Esparto Mining and Reclamation Project
TIS	Traffic Impact Study
TMDL	total maximum daily load
UCMP	University of California, Museum of Paleontology
USACE	U.S. Army Corps of Engineers
USC	United States Code
USDA	U.S. Department of Agriculture
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
UST	underground storage tank
Ya	Yolo silty loam
YCEHD	Yolo County Environmental Health Department
YCPRD	Yolo County Parks and Resources Department
YSAQMD	Yolo-Solano Air Quality Management District