ELVERTA SPECIFIC PLAN PROJECT

Draft Environmental Impact Statement

Prepared by
U.S. Army Corps of Engineers
Sacramento District

December 2012

DRAFT
ENVIRONMENTAL IMPACT STATEMENT

Elverta Specific Plan Project
Sacramento County, California

ID: SPK-2004-00323

Lead Agency:
U.S. Army Corps of Engineers
Sacramento District

ABSTRACT

Pursuant to the National Environmental Policy Act, the U.S. Army Corps of Engineers (USACE), Sacramento District has prepared a Draft Environmental Impact Statement (DEIS) to analyze the potential direct, indirect and cumulative effects associated with three master planned community development alternatives and a No USACE permit/No Action Alternative in the approximately 1,745-acre Elverta Specific Plan area, Sacramento County, California. Within the Plan area, 563 acres (referred to as the participating parcels) are owned by several individual landowners who have filed applications with the USACE for Department of the Army permits under Section 404 of the Clean Water Act.

The alternatives considered in detail are: (A) Applicant's Preferred Alternative; (B) Reduced Impact Alternative; (C) Approved Specific Plan with 25% Density Bonus Alternative; and (D) No USACE Permit/No Action Alternative. Under Alternative A, the Elverta Owners Groups (Applicant) proposes to fill a total of 27.57 acres of waters of the U.S., within participating parcels, including seasonal wetlands, vernal pools and swales, ponds, channels and drainage ditches. Under Alternative B a total of 22.98 acres would be filled within participating parcels and under Alternative C a total of 27.57 acres would be filled within participating parcels. Alternative D, avoids the placement of dredged or fill material into waters of the U.S.

For further information contact:
Marc Fugler
U.S. Army Corps of Engineers, Sacramento District
1325 J Street, Room 1350
Sacramento, CA 95814-2922
(916) 557-5225
Marc.A.Fugler@usace.army.mil

Comments on the DEIS must be submitted to USACE by February 4, 2013 at the address listed above. An electronic copy of the DEIS may be found on the USACE website at: *http://www.spk.usace.army.mil/Media/RegulatoryPublicNotices.aspx.* A hard copy of the DEIS is available for review at the Rio Linda Library, 902 Oak Lane, Rio Linda, California 95673 and during normal business hours at the USACE office. To schedule a time to view the hard copy at USACE, please contact Marc Fugler.

The USACE will also conduct a public meeting for the DEIS on January 16, 2012 from 4 p.m. to 7 p.m. at the Rio Linda Elverta Community Center, 810 Oak Lane, Rio Linda, CA 95673. Interested parties can provide oral and written comments at this meeting.

TABLE OF CONTENTS

Elverta Specific Plan Project
Draft Environmental Impact Statement

Appendices (Bound under Separate Cover)

List of Figures

Page

List of Figures (Continued)

List of Tables

Page

List of Tables (Continued)

Page

List of Tables (Continued)

Acronyms and Abbreviations

AB	Assembly Bill
AC	FAA Advisory Circular
AC&W	Aircraft Control and Warning
ACHP	Advisory Council on Historic Preservation
ADWF	average dry weather flow
AEP	annual exceedance probability
AF/yr	acre-feet per year
AFB	Air Force Base
AG-DR	Agricultural/80-acre minimum – Development Reserve
ALUC	Airport Land Use Compatibility Plan
APE	area of potential effect
AQMP	Air Quality Management Plan
ARB	California Air Resources Board
AST	above-ground storage tank
ASTM	American Society of Testing and Materials
ATCM	Airborne Toxic Control Measure
BEPA	Bald Eagle Protection Act

Page

Acronyms and Abbreviations (Continued)

BMP	best management practices
BTEX	Benzene, Toluene, Ethylbenzene and Xylene
CAAQS	California Ambient Air Quality Standards
Cal/OSHA	California Office of Safety and Health Administration
Cal-Am	California American Water Company
Cal-EPA	California Environmental Protection Agency
CalRecycle	formerly California Integrated Waste Management Board (CIWMB)
CCAA	California Clean Air Act
CDFG	California Department of Fish and Game
CDP	Census Designated Place
CE	Endangered (California)
CEQ	Council on Environmental Quality
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CERCLIS	Comprehensive Environmental Response, Compensation and Liability Information System
CESA	California Endangered Species Act
CFP	Fully Protected (California)
CFR	Code of Federal Regulations
CHP	California Highway Patrol
CIWMA	California Integrated Waste Management Act
CIWMB	California Integrated Waste Management Board (now CalRecycle)
CLUP	Comprehensive Land Use Plan
CNDDB	California Natural Diversity Database
CNEL	community noise equivalent level
CNPS	California Native Plant Society
CO	Carbon Monoxide
CO_2	Carbon Dioxide
CO_2e	Carbon Dioxide Equivalent
CH_4	Methane
County	Sacramento County
CR	Rare (California)
CRHR	California Register of Historic Resources
CSC	California Department of Fish and Game Special Concern Species
CSD-1	County Sanitation District No. 1
CSMP	Construction Site Management Program
CT	Threatened (California)

Page

Acronyms and Abbreviations (Continued)

CVRWQCB	Central Valley Regional Water Quality Control Board
CWA	Clean Water Act
CWHR	California Wildlife Habitat Relationships
D	Diesel
DA	United States Department of the Army
dBA	Hourly A-Weighted Sound Level in decibels
dbh	diameter at breast height
DCI-1	Dry Creek Interceptor 1
DCI-2	Dry Creek Interceptor 2
DCI-3	Dry Creek Interceptor 3
DDT	dichlorodiphenyltrichloroethane
DERA	Sacramento County Department of Environmental Review and Assessment
DHS	California Department of Health Services
DMP	Drainage Master Plan
DOC	California Department of Conservation
DOG	California Division of Oil and Gas
DOT	Department of Transportation
DPM	diesel particulate matter
DTSC	Department of Toxic Substances Control
DWR	California Department of Water Resources
EHD	Placer County Environmental Health Department
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
EMD	Sacramento County Environmental Management Department
EMF	electromagnetic field
EPA	Environmental Protection Agency (*also USEPA*)
ESD	Equivalent Single-Family Dwelling Units
FAA	Federal Aviation Act
FAR	Federal Aviation Regulation
F-B-X-DR	Farm/80-acre minimum – Development Reserve
FC	Candidate (federal)
FCAA	Federal Clean Air Act
FE	Endangered (federal)
FEIR	Final Environmental Impact Report
FEMA	Federal Emergency Management Agency
FESA	Federal Endangered Species Act
FHWA	Federal Highway Administration

Page

Acronyms and Abbreviations (Continued)

FIRM	Flood insurance Rate Map
FMMP	Farmland Mapping and Monitoring Program
FPPA	Farmland Protection Policy Act
FT	Threatened (federal)
FTA	Federal Transit Administration
General Plan	Sacramento County General Plan
GHG	greenhouse gas
gpm	gallons per minute
HAP	Hazardous Air Pollutants
HCM	Highway Capacity Manual
HCP	Habitat Conservation Plan
HWCL	Hazardous Waste Control Law
IPCC	Intergovernmental Panel on Climate Change
JHC	Jacobson Helgoth Consultants
Kv	kilovolt
LCC	Land Capability Classification
LEA	Local Enforcement Agency
LEDPA	least environmental damaging practicable alternative
LEL	Lower Explosive Limit
LOS	Level of Service
LRT	Light Rail Transit
$\mu g/m^3$	micrograms per cubic meter
MBTA	Migratory Bird Treaty Act
MCL	Maximum Contaminant Level
MEI	Maximally Exposed Individual
MGD	million gallons per day
MLD	Most Likely Descendant
MOU	Memorandum of Understanding
MSA	Sacramento County Municipal Services Agency
MTBF	Methyl Tert Butyl Ether
MTP	Metropolitan Transportation Plan
MUTCD	Manual on Uniform Traffic Control Device
N_2O	Nitrous Oxide
NA	not applicable
NAAQS	National Ambient Air Quality Standards (also national standards)
NAC	Noise Abatement Criteria
NAHC	Native American Heritage Commission
national standards	National Ambient Air Quality Standards (also NAAQS)
NEMDC	Natomas East Main Drainage Canal

Page

Acronyms and Abbreviations (Continued)

NEPA	National Environmental Policy Act
NESHAP	National Emission Standards for Hazardous Air Pollutants
NF_3	Nitrogen triflouride
NFIP	National Flood Insurance Program
NHPA	National Historic Preservation Act
NIH	National Institute of Health
NO_2	Nitrogen Dioxide
NOAA	National Oceanic Atmospheric Administration
NOI	Notice of Interest
NOx	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NPL	National Priorities List
NRCS	National Resources Conservation Service
NRHP	National Register of Historic Places
NTP	Notice to Proceed
ODW	Cal-DHS Office of Drinking Water
OEHHA	Cal-EPA Office of Environmental Health Hazard Assessment
OHP	California Office of Historic Preservation
OSHA	Office of Safety and Health Administration
PCB	Polychlorinated Biphenyls
pCi/l	Pico-curies per liter of air
PFFP	Public Facilities Financing Plan
PG&E	Pacific Gas and Electric
PM	particulate matter
ppm	parts per million
PPV	peak particle velocity
RCRA	Resource Conservation Recovery Act
RL/ECWD	Rio Linda/Elverta Community Water District
RLECP	Rio Linda Elverta Community Plan
RMS	root mean square
ROG	reactive organic gases
RT	Sacramento Regional Transit District
RWQCB	Regional Water Quality Control Board
SAC	Strategic Air Command
SACOG	Sacramento Area Council of Governments
SAFCA	Sacramento Area Flood Control Agency
SASD	Sacramento Area Sanitation District
SCS	Soil Conservation Service

Page

Acronyms and Abbreviations (Continued)

SCSD	Sacramento County Sherriff's Department
SCWA	Sacramento County Water Agency
SDWA	Safe Drinking Water Act
SGA	Sacramento Groundwater Authority
SHPO	State Historic Preservation Officer
SIP	State Implementation Plan
SMAQMD	Sacramento Metropolitan Air Quality Management District
SMFD	Sacramento Metropolitan Fire District
SMUD	Sacramento Municipal Utility District
SNAGMA	Sacramento North Area Groundwater Management Authority
SO_2	Sulfur Dioxide
SR	State Route
SRCSD	Sacramento Regional County Sanitation District
SRWTP	Sacramento Regional Wastewater Treatment Plant
SSES	Sacramento Sewerage Expansion Study
ST	short term
SVAB	Sacramento Valley Air Basin
SWAT	Solid Waste Assessment Test
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TAC	Toxic Air Contaminants
T-BACT	Toxics Best Available Control Technology
TCCR	Transportation Corridor Concept Report
TCE	Trichloroethylene
TDF	travel demand forecasting
TDS	total dissolved solids
TOD	Transit-Oriented Developments
TPHG	Total Petroleum Hydrocarbons as Gasoline
UBC	Uniform Building Code
UCMP	University of California Museum of Paleontology Collections
USACE	United States Army Corps of Engineers
USB	Urban Services Boundary
USEPA	United States Environmental Protection Agency (*also EPA*)
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
USNWS	United States National Weather Service
UST	Underground Storage Tank
UWMP	Urban Water Management Plan

Page

Acronyms and Abbreviations (Continued)

V/C	volume-to-capacity
VOC	volatile organic compound
WEAP	Worker Awareness Training
WKA	Wallace-Kuhl Associates
WQC	Water Quality Certification

EXECUTIVE SUMMARY
Elverta Specific Plan Project

ES.1 Introduction

This Draft Environmental Impact Statement (Draft EIS) has been prepared by the U.S. Army Corps of Engineers (USACE), Sacramento District to address the potential environmental effects for the Elverta Specific Plan (hereinafter referred to as "Plan"), which proposes the development of a mixed-use, mixed-density, master planned community. The proposed action under the National Environmental Policy Act (NEPA) is the USACE consideration of authorization of the Applicant's Preferred Alternative pursuant to Section 404 of the Clean Water Act. The Plan area (or project site) is located on approximately 1,745 acres in north-central Sacramento County and bounded by U Street to the south, Gibson Ranch Park to the east, the Sacramento County/Placer County line to the north and rural residential properties to the west.

ES.2 Purpose and Need

NEPA regulations (40 CFR § 1502.13) require that an EIS contain a statement of the purpose and need which "shall briefly specify the underlying purpose and need to which the agency is responding in proposing the alternatives, including the proposed action." The Rio Linda/Elverta Community Plan identifies the need for development in the Rio Linda/Elverta area that "emphasizes traditional, small-town mixed-use retail and residential land use patterns in the urban areas, encourages buildout of agricultural-residential areas [developments that avoid the appearance of urban subdivisions through incorporating open space in their design], and maintains agricultural and open space" (Sacramento County, 1997). The locally approved Plan proposes a large scale, mixed use, mixed density master planned community in north-central Sacramento County to meet this need. In addition, the Sacramento County General Plan (Land Use Element) identifies the need for "an orderly pattern of land use that concentrates urban development, enhances community character and identity through the creation and maintenance of neighborhoods, is functionally linked with transit, and protects the County's natural, environmental and agricultural resources" (Sacramento County, 2011). The USACE has determined that the following purpose statement responds to the need for proposing the alternatives considered in this Draft EIS:

> *A large scale, mixed use, mixed density master planned community in north-central Sacramento County.*

Per 40 CFR § 1502.13, the stated purpose and need has guided the development of the alternatives presented in Chapter 2.

ES.3 Alternatives

This EIS is both a project-level and programmatic analysis. The project-level analysis considers the effects of the initial phase of the Elverta Specific Plan, specifically the development of the currently participating parcels within the Plan area, which constitutes approximately 563 acres of the 1,745-acre Plan area. The program-level analysis addresses the impacts of the full buildout of the entire Plan area. This document analyzes the potential environmental consequences associated with four alternatives. The alternatives are described in detail in Section 2.0 and are summarized below.

Alternative A – Applicant's Preferred Alternative

Alternative A, the Applicant's Preferred Alternative, proposes the development of a mixed use, mixed density master planned community within the Elverta Specific Plan area. The Applicant's Preferred Alternative requires Section 404 permits from the USACE for proposed fill of 27.57 acres of waters of the U.S. At the project-level, Alternative A includes urban and agricultural residential development; commercial uses; parks and open space; as well as areas allocated for drainage/riparian corridors and major roads. For the program-level analysis, these land uses/areas would be developed further, as well as the development of schools and detention areas.

Alternative B – Reduced Impact Alternative

Alternative B would also include the development of a large-scale, mixed-use development within the Elverta Specific Plan area. The geographic locations and types of planned land uses for Alternative B are similar to those of Alternative A. However, Alternative B has larger drainage corridors and incorporates areas that would avoid development to reduce impacts to waters of the U.S. This alternative requires Section 404 permits from the USACE for the proposed fill of 22.98 acres of waters of the U.S.

Alternative C – Approved Specific Plan with 25% Density Bonus

Alternative C would develop the project site with the same land use layout as the Approved Specific Plan analyzed in the previously prepared Sacramento County Department of Environmental Review and Assessment Environmental Impact Report (2007). However, the residential density would be increased from 4,950 units to 6,190 units. The 25% density bonus is consistent with County policies for projects which incorporate energy savings and energy efficiency measures. The geographic location of planned land use types is similar to Alternative A and B. However, the drainage/riparian corridors are substantially different than those proposed for Alternatives A and B. This alternative requires Section 404 permits from the USACE for the proposed fill of 27.57 acres of waters of the U.S.

Alternative D – No Permit Alternative (No Action)

Alternative D avoids all jurisdictional wetlands and other waters of the U.S., with a 25-foot buffer surrounding all jurisdictional wetland swales, and a 10-foot buffer surrounding all other jurisdictional wetlands. In order to avoid these wetland features, approximately 70% of the land proposed for development under Alternatives A, B and C would remain undeveloped. Therefore, this alternative proposes lower intensity land uses for the project site and only low-density agricultural residential development would occur. This alternative would not require a USACE Section 404 permit, and is therefore considered the No Action alternative under NEPA.

ES.4 Areas of Environmental Controversy

Areas of environmental controversy have been identified through the scoping process. A scoping report was finalized in October 2009 and is included as **Appendix B**. The scoping report contains a copy of the Notice of Intent, oral comments from the scoping meeting, and written comments received. Specific comments were received in the following issue areas: Dry Creek Road, Flooding, Green Building, Housing and Density, Natural Resources, Public Noticing and Involvement, Traffic Volumes and Hazards, Air Quality, Health Hazards, Alternatives, Biological Resources, Community Character, Cumulative Effects, Economics, Groundwater, Growth, On-Site Mitigation, Permit Applications, Project Description, Property Value, Purpose and Need, Scope of the EIS, Scoping Period, Water Supply and Electricity Provision, and Wetlands and Waters of the U.S. The issues that contained the most comments and/or range of comments included Traffic Volumes and Hazards, Dry Creek Road, Flooding, Public Noticing and Involvement, and Wetlands and Waters of the U.S.

ES.5 Environmental Consequences and Mitigation Summary

Table ES-1 summarizes the environmental consequences and mitigation for each alternative in the EIS. In addition, the significance for each impact is shown before and after implementation of the associated mitigation measures.

TABLE ES-1
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact Statement	Mitigation Measures	Original Impact / Residual Impact with Mitigation			
		Alternative A	Alternative B	Alternative C	Alternative D
2 Aesthetics					
Impact 2.1: Temporary Degradation of Visual Character during Construction	No feasible mitigation.	S/S	S/S	S/S	S
Impact 2.2: Degradation of Visual Character	No feasible mitigation.	S/S	S/S	S/S	S
Impact 2.3: Alteration of a Scenic Vista	None	LS	LS	LS	LS
Impact 2.4: New Light and Glare Effects	Mitigation Measure 2.4: Limit Fugitive Light and Implement a Lighting Plan. A lighting plan would be implemented and include the following measures to the maximum extent feasible: • Exterior light fixtures would have minimized height and maximum spacing for safety, to reduce potential for backscatter into the nighttime sky and incidental spillover of light into adjacent private properties and open space. • Exterior lighting would be low-intensity and only used where necessary for safety and security purposes. • Wherever possible, automatic shutoffs or motion sensors would be used for lighting features to further reduce excess nighttime light. • All nighttime lighting would be downcast and shielded to prevent the light from illuminating anything other than the surface intended to be illuminated. • Flood or area lighting needed for nighttime sporting activities would be located to avoid disturbing adjacent residential areas and passing motorists. • Light fixture mountings would have non-glare finishes. The lighting plan would be submitted to Sacramento County Municipal Services Agency for review prior to installation of any lighting or the approval of building permits.	S/LS	S/LS	S/LS	LS
3. Air Quality and Global Climate Change					
Impact 3.1: Effects from Construction Emissions with Respect to Federal General Conformity	None	LS	LS	LS	NI
Impact 3.2: Effects from Construction Emissions with Respect to SMAQMD Criteria	Mitigation Measure 3.2a: Limit Daily Grading Activities. The project proponent would require the construction contractors to limit the maximum daily disturbed area to 15 acres or less. If daily grading is projected to be greater than 15 acres, the project proponent would conduct dispersion modeling of PM10 emissions generated during construction to determine if estimated levels would exceed the California Ambient Air Quality Standard (CAAQS) at the nearest receptor. If significant PM10 concentrations are identified, a PM10 Reduction Plan would be prepared for approval by the SMAQMD that describes how concentrations would be limited to less-than-significant levels.	S/LS	S/LS	S/LS	LS

Legend: NI = No Impact; BI = Beneficial Impact; LS = Less-Than-Significant; S = Significant and Adverse

TABLE ES-1 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact Statement	Mitigation Measures	Original Impact / Residual Impact with Mitigation			
		Alternative A	Alternative B	Alternative C	Alternative D
	Mitigation Measure 3.2b: Use Basic Construction Emission Control Practices. The project proponent would require the construction contractors to implement the SMAQMD Basic Construction Emission Control Practices, including: • Water all exposed surfaces two times daily. Exposed surfaces include, but are not limited to soil piles, graded areas, unpaved parking areas, staging areas, and access roads. • Cover or maintain at least two feet of free board space on haul trucks transporting soil, sand, or other loose material on the site. Any haul trucks that would be traveling along freeways or major roadways should be covered. • Use wet power vacuum street sweepers to remove any visible trackout mud or dirt onto adjacent public roads at least once a day. Use of dry power sweeping is prohibited. • Limit vehicle speeds on unpaved roads to 15 miles per hour. • All roadways, driveways, sidewalks, parking lots to be paved should be completed as soon as possible. In addition, building pads should be laid as soon as possible after grading unless seeding or soil binders are used. • Minimize idling time either by shutting equipment off when not in use or reducing the time of idling to 5 minutes (as required by the state airborne toxics control measure [Title 13, Section 2485 of the California Code of Regulations]). Provide clear signage that posts this requirement for workers at the entrances to the site. • Maintain all construction equipment in proper working condition according to manufacturer's specifications. The equipment must be checked by a certified mechanic and determine to be running in proper condition before it is operated.				
Impact 3.3: Effects from Operational Emissions with Respect to SMAQMD Criteria	Mitigation Measure 3.3: Develop and Implement an Air Quality Mitigation Plan (AQMP). The project proponent would develop an AQMP in coordination with and approved by SMAQMD for each area. Each AQMP would include measures to reduce operational emissions by at least 15 percent.	S/S	S/S	S/S	S
Impact 3.4: Effects from Operational Emissions with Respect to Carbon Monoxide	None	LS	LS	LS	LS
Impact 3.5: Effects from Construction and Operational Emissions with Respect to Toxic Air Contaminants	Mitigation Measure 3.5: Reduce Potential TAC Exposure to Sensitive Receptors. The project proponent shall incorporate the following measures to reduce or avoid exposure of sensitive receptors to TACs during construction and operation. For construction activities, measures shall include, but are not limited to, the following: • Minimize idling time either by shutting equipment off when not in use or reducing the time of idling to 5 minutes (as required by the state airborne toxics control measure [Title 13, Section 2485 of the California Code of Regulations]). Provide clear signage that posts this requirement for workers at the entrances to the site. • Use new diesel engines that are designed to minimize DPM emissions (usually through the	S/LS	S/LS	S/LS	LS

Legend: NI = No Impact; BI = Beneficial Impact; LS = Less-Than-Significant; S = Significant and Adverse

TABLE ES-1 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact Statement	Mitigation Measures	Original Impact / Residual Impact with Mitigation			
		Alternative A	Alternative B	Alternative C	Alternative D
	use of catalyzed particulate filters in the exhaust), or retrofitting older engines with catalyzed particulate filters which would reduce up to 85% of DPM emissions. For operations, plans shal include, but are not limited to, as the following: • Proposed commercial land uses that have the potential to emit TACs (such as loading docks for diesel delivery trucks) would be located as far away as possible from existing and proposed sensitive receptors. • When determining the specific type of facility that would occupy the proposed commercial land use space, the project proponent shall take into consideration the facility's potential to produce TACs. • New sensitive land uses will not be permitted within 300 feet of a large gasoline station (defined as a facility with a throughput of 3.6 million gallons per year or greater). Require a 50 foot separation between gasoline stations with a throughput less than 3.6 million gallons per year. • Dry-cleaning operation using perchloroethylene with two or more machines will not be permitted within 500 feet of a sensitive land uses. For operations with one machine the separation shall be a minimum of 300 feet. For operations with three or more machines, consult the local air district. New sensitive land uses will not be sited in the same building with dry-cleaning operations that use perchloroethylene.				
Impact 3.6: Objectionable Odors	Mitigation Measure 3.6: Reduce Odors. The project proponent would implement the following odor control measures during construction or operation: • Consider the odor-producing potential of land uses when the exact type of facility that would occupy areas zoned for commercial, industrial, or mixed-use land uses is determined. Facilities that have the potential to emit objectionable odors would be located with appropriate buffers from existing and proposed sensitive receptors. • Identify odor control devices within building permit applications to mitigate the exposure of receptors to objectionable odors if a potential odor-producing source is to occupy the project area. The identified odor control devices would be installed before the issuance of certificates of occupancy for the potentially odor-producing use.	S/LS	S/LS	S/LS	LS
Impact 3.7: Greenhouse Gas Emissions and Global Climate Change	Implement Mitigation Measure 3.3: Develop and Implement an AQMP. **Measure 3.7a: Construction GHG Control Measures.** The project proponent would incorporate the following construction GHG emissions reductions, where feasible: • Improve fuel efficiency from construction equipment: o Minimize idling time either by shutting equipment off when not in use or reducing the time of idling to no more than 3 minutes (5 minute limit is required by the state airborne toxics control measure). Provide clear signage that posts this requirement for workers at the entrances to the site.	S/S	S/S	S/S	LS

Legend: NI = No Impact; BI = Beneficial Impact; LS = Less-Than-Significant; S = Significant and Adverse

TABLE ES-1 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact Statement	Mitigation Measures	Original Impact / Residual Impact with Mitigation			
		Alternative A	Alternative B	Alternative C	Alternative D
	○ Maintain all construction equipment in proper working condition according to manufacturer's specifications. The equipment must be checked by a certified mechanic and determined to be running in proper condition before it is operated. ○ Train equipment operators in proper use of equipment. ○ Use the proper size of equipment for the job. ○ Use equipment with new technologies (repowered engines, electric drive trains). • Perform on-site material hauling with trucks equipped with on-road engines (if determined to be less emissive than the off-road engines). • Use alternative fuels for generators at construction sites such as propane or solar, or use electrical power. • Use an ARB approved low carbon fuel for construction equipment. (NOx emissions from the use of low carbon fuel must be reviewed and increases mitigated.) • Encourage and provide carpools, shuttle vans, transit passes and/or secure bicycle parking for construction worker commutes. • Reduce electricity use in the construction office by using compact fluorescent bulbs, powering off computers every day, and replacing heating and cooling units with more efficient ones. • Recycle or salvage non-hazardous construction and demolition debris (goal of at least 75% by weight). • Use locally sourced or recycled materials for construction materials (goal of at least 20% based on costs for building materials, and based on volume for roadway, parking lot, sidewalk and curb materials). Wood products utilized should be certified through a sustainable forestry program. • Minimize the amount of concrete for paved surfaces or utilize a low carbon concrete option. • Produce concrete on-site if determined to be less emissive than transporting ready mix. • Use SmartWay certified trucks for deliveries and equipment transport. • Develop a plan to efficiently use water for adequate dust control. Mitigation Measure 3.7b: GHG Emission Control Measures. The project proponent would develop a GHG Reduction Plan to be approved by the County, in consultation with SMAQMD. The project proponent would incorporate Green Building and Development Measures as listed in Appendix J. Each increment of new development within the project site requiring a discretionary approval from the County (e.g., proposed tentative subdivision map, conditional use permit), would demonstrate that GHG emissions from construction and operation would be reduced by 30 percent from business-as-usual 2006 emissions levels, or an appropriate alternate threshold as determined in consultation with the County and SMAQMD.				

Legend: NI = No Impact; BI = Beneficial Impact; LS = Less-Than-Significant; S = Significant and Adverse

TABLE ES-1 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact Statement	Mitigation Measures	Original Impact / Residual Impact with Mitigation			
		Alternative A	Alternative B	Alternative C	Alternative D
Impact 3.8: Climate Change Impacts on Project Site	None	LS	LS	LS	NI
4. Biological Resources					
Impact 4.1: Effects to Federally Listed Vernal Pool Species and Critical Habitat	Mitigation Measure 4.1a (Alternative A and C only): Compensate for Direct and Indirect Effects to Vernal Pool Habitat. To fully compensate for direct and indirect effects to habitat for federally listed vernal pool species, the project proponent would purchase habitat creation credits at a USACE and USFWS-approved mitigation bank at a 2:1 preservation ratio and 1:1 creation ratio for direct effects (totaling 3.50 acres) to vernal pool habitat and a 2:1 preservation ratio for indirect effects (totaling 9.20 acres) to vernal pool habitat. Habitat compensation must occur prior to development. Compensation requirements are summarized in Table 4.4-2. Compensation for each participating parcel must be approved by the USACE and USFWS prior to the initiation of construction activities. The project proponent must provide the USACE proof of the purchase prior to project construction. Final ratio and credit amounts shall be determined based on permit conditions by the USACE and USFWS. Mitigation Measure 4.1a (Alternative B only): Compensate for Direct and Indirect Effects to Vernal Pool Habitat. To fully compensate for direct and indirect effects to habitat for federally listed vernal pool species, the project proponent would purchase habitat creation credits at a USACE and USFWS-approved mitigation bank at a 2:1 preservation ratio and 1:1 creation ratio for direct effects (totaling 3.14 acres) to vernal pool habitat and a 2:1 preservation ratio for indirect effects (totaling 9.20 acres) to vernal pool habitat. Habitat compensation must occur prior to development. Compensation requirements are summarized in Table 4.4-4. Compensation for each participating parcel must be approved by the USACE and USFWS prior to the initiation of construction activities. The project proponent must provide the USACE proof of the purchase prior to project construction. Final ratio and credit amounts shall be determined based on permit conditions by the USACE and USFWS. Mitigation Measure 4.1b: Use Best Management Practices (BMPs) to Provide Effective Erosion and Sediment Control. Use of BMPs for stormwater control is expected to reduce the potential for avoided vernal pool habitat to be indirectly affected by sediment-laden discharges from construction sites. The performance and effectiveness of these BMPs would be determined either by visual means, where applicable (i.e., observation of above-normal sediment release), or by actual water sampling in cases where the verification of containment reduction or elimination is required to determine the adequacy of the measures. BMPs to be implemented would include, but are not limited to, the following: • All disturbed surfaces or stockpile areas would be protected with erosion control measures in place during the period of October 1 through April 30. • BMPs for temporary erosion control (such as silt fences, staked straw bales/wattles, silt/sediment basins and traps, check dams, geofabric, sandbag dikes, and temporary revegetation or other ground cover) would be employed per the product specifications for	S/LS	S/LS	S/LS	LS

Legend: NI = No Impact; BI = Beneficial Impact; LS = Less-Than-Significant; S = Significant and Adverse

TABLE ES-1 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact Statement	Mitigation Measures	Original Impact / Residual Impact with Mitigation			
		Alternative A	Alternative B	Alternative C	Alternative D
	disturbed areas, stockpiled soil, and along culverts and drainage ditches on active construction sites and in downstream areas that may be affected by construction activities. Requirements for the placement and monitoring of the BMPs would be part of the contractor's project specifications. Performance and adequacy of the measures would be determined visually by site construction management and verified by the County Department of Water Resources and Central Valley Regional Water Quality Control Board as appropriate. • Dirt and debris would be swept from paved areas in construction zones on a daily basis as necessary to remove excessive accumulations of silt, mud or other debris. Sweeping and dust removal would be implemented by the contractor and oversight of these operations the responsibility of the construction site superintendent. • All exposed/disturbed areas, left barren of vegetation due to project related activities, would be seeded, mulched and fertilized with a blend of native and/or naturalized grass and forb species. Locally native wildflower and/or shrub seeds may be included in the seed mix. Planted areas must achieve an 80% acreage coverage rate to be considered successful. All exposed areas where seeding is considered unsuccessful after 90 days, would received appropriate soil preparation and a second application of seed/mulch/fertilizer. Quarterly monitoring events would be conducted for a period of one year or until the target goal is met. The application, schedule, and maintenance of the vegetative cover would be the responsibility of the contractor and requirements to establish a vegetative cover would be included in the construction contractor's project specifications. • If discharges of sediment or hazardous substances to drainage ways are observed, the USACE would be contacted immediately and construction would be halted until the source of contamination is identified and remediated. Visual indications of such contamination include an oily sheen or coating on water, and noticeable turbidity (lack of clarity) in the water. Mitigation Measure 4.1c: Conduct Worker Awareness Training. A Worker Environmental Awareness Program (WEAP) training for construction crews and construction foreman would be conducted before any construction activities begin. The WEAP training would be conducted by a qualified wildlife biologist. The training would include a brief review of the special status species and other sensitive resources that could occur in the project area (including their life history and habitat requirements and where on the project site they may be found) and their legal status and protection. The program would also cover all relevant mitigation measures, permit conditions and BMP plans, such as the Stormwater Pollution Prevention Plan (SWPPP) and/or erosion control and sediment plan. During WEAP training, construction personnel would be informed of the importance of avoiding ground-disturbing activities outside of the designated work area. A designated environmental inspector would be responsible for ensuring that construction personnel adhere to the guidelines and restrictions and that all persons working on site have attended a WEAP training session. WEAP training sessions would be conducted as needed for new personnel brought onto the job throughout the duration				

Legend: NI = No Impact; BI = Beneficial Impact; LS = Less-Than-Significant; S = Significant and Adverse

TABLE ES-1 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact Statement	Mitigation Measures	Original Impact / Residual Impact with Mitigation			
		Alternative A	Alternative B	Alternative C	Alternative D
	of construction. Mitigation Measure 4.1d: Limit Project Access Routes/Staging Areas. The total number of access routes, number and size of staging areas, and the total area of project activity would be limited to those areas identified in the approved construction drawings and/or plans or as otherwise approved per permit conditions. Access routes and project boundaries would be clearly marked at all times. Access routes for heavy equipment to and from the project site would be restricted to established roadways to minimize habitat disturbance. The storing of construction equipment, vehicles, and supplies would be restricted to the designated construction staging areas. All fueling, cleaning and maintenance activities of vehicles and other equipment would be performed only in designated areas and at least 250 feet away from avoided habitats. As part of WEAP training, all workers would be informed of the importance of preventing spills and appropriate measures to take in the event of a spill. All spills would be cleaned up immediately.				
Impact 4.2: Effects to Western Spadefoot	Mitigation Measure 4.2: Perform Pre-construction Surveys for Western Spadefoot. Prior to construction, a qualified biologist would conduct a survey for western spadefoot. The survey would include transecting all suitable habitat that may be affected by project activities and identifying suitable burrows that may be used for aestivation. Suitable burrows would be excavated using hand tools. If a spadefoot is found in the construction easement, the biologist would move the spadefoot from the area to a CDFG-approved site.	S/LS	S/LS	S/LS	LS
Impact 4.3: Effects to Western Pond Turtle	Mitigation Measure 4.3: Perform Pre-construction Surveys for Western Pond Turtle. Prior to construction, a qualified biologist would conduct a survey for western pond turtles within 24 hours of the start of construction activities in ponds, steams, ditches, and other watercourses that may be affected by construction activities. If no individuals are identified then no additional measures are required. If a turtle is found in the construction easement, the biologist would move the turtle from the area to a CDFG-approved location. If a turtle becomes trapped during construction activities in the waterway, a biologist would remove the turtle from the work area and place it downstream and outside of the construction area.	S/LS	S/LS	S/LS	LS
Impact 4.4: Effects to Nesting Special-Status Birds Species and Migratory Birds	Mitigation Measure 4.4a: Avoid Active Nesting Season. To avoid and minimize impacts to tree and shrub nesting species, the following measures would be implemented: • If feasible, conduct all tree and shrub removal and grading activities during the non-breeding season (generally September 1 through January 31). • If grading and tree removal activities are scheduled to occur during the breeding season (February 1 through August 31), pre-construction surveys would be performed prior to the start of project activities (refer to Mitigation Measure 4.4b). Mitigation Measure 4.4b: Conduct Pre-construction Nesting Bird Surveys. If construction, grading or other project-related activities are schedule during the nesting season (February 1 to August 31), pre-construction surveys would be conducted by a qualified wildlife biologist to identify active Swainson's hawk nests within ½-mile of proposed construction activities and	S/LS	S/LS	S/LS	LS

Legend: NI = No Impact; BI = Beneficial Impact; LS = Less-Than-Significant; S = Significant and Adverse

TABLE ES-1 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact Statement	Mitigation Measures	Original Impact / Residual Impact with Mitigation			
		Alternative A	Alternative B	Alternative C	Alternative D
	nests of other species within 250 feet of proposed construction activities. The surveys would be conducted no less than 14 days and no more than 30 days prior to the beginning of construction. The results of the survey would be emailed to CDFG at least three days prior to construction. Surveys would be conducted by a qualified biologist in accordance with the following protocols: • For Swainson's hawk surveys, guidelines provided in the Recommended Timing and Methodology for Swanson's Hawk Nesting Survey in the Central Valley (Technical Advisory Committee 2000) would be followed where possible (Appendix I). • Surveys for burrowing owls would be conducted between March and May and in accordance with the Staff Report on Burrowing Owl Mitigation (CDFG, 1995; Appendix H). • Surveys for tricolored blackbirds, northern harrier, white-tailed kite, and grasshopper sparrow would include at least two pre-construction surveys (separated by at least two weeks). • Surveys for other migratory bird species would take place no less than 14 days and no more than 30 days prior to the beginning of construction within suitable nesting habitat. If the pre-construction surveys do not identify any nesting raptors or other nesting migratory bird species within areas potentially affected by construction activities, no further mitigation would be required. If the pre-construction surveys do identify nesting raptors or other nesting bird species within areas that may be affected by site construction, Mitigation Measure 4.4c would be implemented. Mitigation Measure 4.4c: Avoid Active Bird Nest Sites. Should active nest sites be discovered within areas that may be affected by construction activities, additional measures would be implemented as described below. Swainson's Hawk: If active nests are found, CDFG would be notified and project-related construction impacts would be avoided by establishment of appropriate no-work buffers to limit project-related construction activities near the nest site. The size of the no-work buffer zone would be determined in consultation with the CDFG, although a ¼ mile buffer would be used when possible. The no-work buffer zone would be delineated by highly visible temporary construction fencing. In consultation with CDFG, monitoring of nest activity by a qualified biologist may be required if the project-related construction activity has potential to adversely affect the nest or nesting behavior of the bird. No project-related construction activity would commence within the no-work buffer area until a qualified biologist and CDFG confirms that the nest is no longer active. Burrowing Owls: If actively nesting burrowing owls are discovered in the project site during the breeding season (February 1 to August 31), CDFG would be notified. Where construction activities could directly affect burrowing owl survival or reproductive behavior, or where maintenance of a minimum 250-foot buffer zone around active burrowing owls is not practical, a qualified biologist would recommend site specific mitigation measures, which may include				

Legend: NI = No Impact; BI = Beneficial Impact; LS = Less-Than-Significant; S = Significant and Adverse

TABLE ES-1 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact Statement	Mitigation Measures	Original Impact / Residual Impact with Mitigation			
		Alternative A	Alternative B	Alternative C	Alternative D
	the following: • A site-specific plan to complete nearby construction activities when adult owls are in burrows attending to young nestlings (and thus not disturbed by the presence of construction equipment); • Modification of construction procedures so critical construction tasks could be completed in as short a time as possible; and/or • Close monitoring of the owls' behavior before, during and after construction so any significant changes in the owls' behavior would be apparent. If the project would result in direct impacts to active burrows, passive relocation/exclusion would be allowed during the non-breeding season (September 1 to January 31). The CDFG would be consulted on current passive relocation methodology before relocation of owls is attempted. Breeding burrowing owls and their young would not be relocated. Following exclusion, the burrows can be destroyed to prevent the birds from returning to the site. Following the passive exclusion, burrows within 250 feet of the project area would be seasonally blocked (anchored plywood or other similar mechanism) to prevent burrowing owls from establishing new burrows in the project area. Monitoring would occur prior to the nesting season through construction of the project, as determined in consultation with the CDFG, to ensure that owls do not return to the project area during the construction season. The burrows would be unblocked prior to the beginning of the next breeding season. Tricolored Blackbird: If a colony is identified in or within 500 feet of the project area, the project proponent would consult with CDFG regarding suitable measures to avoid impacting breeding effort. Measures would include, but are not limited to: • Maintaining a 500-foot buffer around each colony; no construction activities would be permitted within this buffer except as a result of consultation with CDFG. • Depending on conditions specific to each colony, and the relative location and rate of construction activities, it may be feasible for construction to occur as planned within the buffer without impacting the breeding effort. In this case (to be determined in consultation with CDFG), the colony would be monitored by a qualified biologist during construction within the buffer. If, in the professional opinion of the monitor, the project would impact the colony, construction activities within the buffer would cease until the colony is no longer active or the project receives approval to continue from CDFG. Northern Harrier, White-Tailed Kite, and other Migratory Birds: If active nests are found, project-related construction impacts would be avoided by establishment of appropriate no-work buffers to limit project-related construction activities near the nest site. The size of the no-work buffer zone would be determined in consultation with the CDFG although a 500-foot would be used when possible. The no-work buffer zone would be delineated by highly visible temporary construction fencing. In consultation with CDFG, monitoring of nest activity by a qualified biologist may be required if the project-related construction activity has potential to adversely affect the nest or nesting behavior of the bird. No project-related construction activity would				

Legend: NI = No Impact; BI = Beneficial Impact; LS = Less-Than-Significant; S = Significant and Adverse

TABLE ES-1 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact Statement	Mitigation Measures	Original Impact / Residual Impact with Mitigation			
		Alternative A	Alternative B	Alternative C	Alternative D
	commence within the no-work buffer area until a qualified biologist and CDFG confirms that the nest is no longer active.				
Impact 4.5: Effects to Special-Status Wildlife Associated with Annual Grasslands	Mitigation Measure 4.5a (Alternative A and C only): Compensate for the loss of SWHA foraging habitat. Prior to construction, each project proponent would compensate for the loss of grassland habitat on participating parcels at a ratio no less than 1:1, for a total of 502 acres for all participating parcels. The preservation and management of this habitat would be documented in a Swainson's hawk mitigation plan that would be subject to final approval by CDFG. Mitigation Measure 4.5a (Alternative B only): Compensate for the loss of grassland habitat. Prior to construction, each project proponent would compensate for the loss of grassland habitat on participating parcels at a ratio no less than 1:1, for a total of 463 acres for all participating parcels. The preservation and management of this habitat would be documented in a Swainson's hawk mitigation plan that would be subject to final approval by CDFG. -OR- Mitigation Measure 4.5b (Alternatives A, B and C): Swainson's Hawk Impact Mitigation Fee. Under the County's Swainson's Hawk Ordinance, the project proponent may submit payment of a Swainson's Hawk impact mitigation fee per acre of calculated habitat impacted to the County in the amount established. The amount may be amended from time to time to ensure that the fee will keep pace with the inflation of land prices. The current mitigation fee is $16,000 per acre with an operations/management fee of $2,375 per acre and a one time administrative fee of $500.00. However, for project impacts over 40 acres; the County will require preservation, through conservation easement or fee title, of one acre of suitable habitat for each acre developed.	S/LS	S/LS	S/LS	LS
Impact 4.6: Effects to Special-Status Plants	Implement Mitigation Measure 4.1a: Compensate for Direct and Indirect Effects to Vernal Pool Habitat. Mitigation Measure 4.6: Compensate for the Loss of Special-Status Plant Populations. A known population of Sanford's arrowhead would be directly affected by proposed drainage improvements. To avoid, minimize, and compensate for this loss, the following measures would be implemented: • Minimize impacts by restricting removal of plants to as few individuals of a population where possible; and • Prepare a Mitigation and Monitoring Plan to relocate plants and/or seed banks or reintroduce new populations in suitable habitat and soil types to a CDFG or USFWS-approved off-site location.	S/LS	S/LS	S/LS	LS
Impact 4.7: Loss of Native Oaks and Other Protected Trees	Mitigation Measure 4.7: Protect Sensitive Tree Resources Adjacent to Construction Activities. Sensitive tree resources adjacent to construction activities may require additional protection. Where feasible, buffer zones should include a minimum one-foot-wide buffer zone outside the	S/LS	S/LS	S/LS	LS

Legend: NI = No Impact; BI = Beneficial Impact; LS = Less-Than-Significant; S = Significant and Adverse

TABLE ES-1 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact Statement	Mitigation Measures	Original Impact / Residual Impact with Mitigation			
		Alternative A	Alternative B	Alternative C	Alternative D
	dripline for oaks or landmark trees. The locations of these resources would be clearly identified on the construction drawings and marked in the field. Fencing or other barriers would remain in place until all construction and restoration work that involves heavy equipment is complete. Construction vehicles, equipment, or materials would not be parked or stored within the fenced area. No signs, ropes, cables, or other items would be attached to the protected trees. Grading, filling, trenching, paving, irrigation, and landscaping within the driplines of oak trees would be limited. Grading within the driplines of oak trees would not be permitted unless specifically authorized by a Certified Arborist. Hand-digging must be done in the vicinity of major trees and as recommended by a Certified Arborist to prevent root cutting and mangling by heavy equipment.				
5. Aquatic Resources					
Impact 5.1: Effects to Wetlands and Other Waters of the U.S.	Implement Mitigation Measures 4.1a: Compensate for Loss of Vernal Pool Habitat, 4.1b: Use Best Management Practices (BMPs) to Provide Effective Erosion and Sediment Control, 4. 1c: Conduct Worker Awareness Training (WEAP), and 4.1d: Limit Project Access Routes/Staging Areas. Mitigation Measure 5.1: Fully Compensate for the Waters of the U.S.: The project proponent would ensure that any loss of waters of the U.S. would be compensated for by restoration or creation of waters at a ratio no less than 1:1. For each development parcel (individual parcels are each a development parcel and infrastructure is one development parcel), compensation shall occur prior to the filling of any jurisdictional waters of the U.S. within that development parcel. Compensation may include on or off site creation, restoration, or enhancement, or purchase of appropriate credits from a Corps-approved mitigation bank. On-site or off-site creation/restoration plans would be prepared by a qualified biologist prior to construction and approved by the Corps. On- or off-site creation/restoration sites would be monitored for at least five years to ensure their success.	S/LS	S/LS	S/LS	NI
6. Cultural Resources					
Impact 6.1: Effects to Historic Properties	None	LS	LS	LS	LS
Impact 6.2: Effects to Cultural and Paleontological Resources	Mitigation Measure 6.2a: Stop Work in the Event of an Archaeological or Paleontological Discovery. If potentially significant cultural resources, including archaeological or paleontological resources, are unearthed during construction, work would halt in that area until a qualified archaeologist or paleontologist can assess the significance of the find, and, if necessary, develop appropriate treatment measures. Prehistoric materials might include obsidian and chert flaked-stone tools (e.g., projectile points, knives, scrapers) or toolmaking debris; culturally darkened soil (“midden”) containing heat-affected rocks, artifacts, or shellfish remains; and stone milling equipment (e.g., mortars, pestles, handstones, or milling slabs); and battered stone tools, such as hammerstones and pitted stones. Historic-era materials might include stone, concrete, or adobe footings and walls; filled wells or privies; and deposits	S/LS	S/LS	S/LS	LS

Legend: NI = No Impact; BI = Beneficial Impact; LS = Less-Than-Significant; S = Significant and Adverse

TABLE ES-1 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact Statement	Mitigation Measures	Original Impact / Residual Impact with Mitigation			
		Alternative A	Alternative B	Alternative C	Alternative D
	of metal, glass, and/or ceramic refuse. If the archaeologist, with concurrence from SHPO, determines that a find is not significant and the impact not adverse, construction would proceed. If any find is determined to be significant and the effects adverse, the project proponent and a qualified archaeologist would meet with USACE to determine the appropriate measures to recover or protect the resource. Mitigation Measure 6.2b: Stop Work in the Event of the Discovery of Human Remains. In the event of discovery of any human remains on the site, there would be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains until the coroner of Sacramento County has been contacted. If the coroner determines that the human remains are of Native American origin, the Native American Heritage Commission (NAHC) will be notified and the guidelines of the NAHC will be adhered to in the treatment and disposition of remains (Public Resources Code 5097).				
7. Socioeconomics and Environmental Justice					
Impact 7.1: Temporary Increase in Local Employment and Output During Construction	None	BI	BI	BI	BI
Impact 7.2: Temporary Increase in Population and Housing Demand During Construction	None	LS	LS	LS	LS
Impact 7.3: Increased Population Growth	None	LS	LS	LS	LS
Impact 7.4: Increased Housing Demand	None	LS	LS	LS	NI
Impact 7.5: Potential Effects on Minority and Low-Income Populations	None	NI	NI	NI	NI
8. Geology, Soils and Mineral Resources					
Impact 8.1: Topography and Unique Features	None	LS	LS	LS	LS
Impact 8.2: Geologic Hazards and Seismic Safety	None	LS	LS	LS	LS
Impact 8.3: Mineral Resources	None	LS	LS	LS	LS
Impact 8.4: Soil Erosion	None	LS	LS	LS	LS
9. Hazards and Hazardous Materials					
Impact 9.1: Exposure to Asbestos and/or Lead-Based Paint during Construction	Mitigation Measure 9.1: Conduct pre-demolition building surveys for hazardous materials and implement all applicable regulations.	S/LS	S/LS	S/LS	LS

Legend: NI = No Impact; BI = Beneficial Impact; LS = Less-Than-Significant; S = Significant and Adverse

TABLE ES-1 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact Statement	Mitigation Measures	Original Impact / Residual Impact with Mitigation			
		Alternative A	Alternative B	Alternative C	Alternative D
Impact 9.2: Construction Hazards	Mitigation Measure 9.2: Establish fenced construction staging areas during each phase of Plan area development. These fenced staging areas would be used for storage of vehicles, equipment, materials, fuels, lubricants, and solvents. The stockpiling or vehicle staging areas would be identified in the improvement plans and would be located as far as practical from developed land uses.	S/LS	S/LS	S/LS	LS
Impact 9.3: Storage, Use, and Transport of Hazardous Materials	None	LS	LS	LS	LS
Impact 9.4: Exposure to hazards from the Monroe Landfill	Mitigation Measure 9.4: Prior to any development (including construction of buildings or other improvements, installation of infrastructure/utilities, grading activities, etc.) on properties located within 1,000 feet of the boundaries of the 20± acre Monroe Landfill property (APN 202-0070-024) either: (a) conduct a landfill gas assessment to determine whether these surrounding properties have been affected by the migration of landfill gas from the Monroe Landfill and/or (b) provide continuous protection from landfill gas accumulation such as passive gas collection and impervious membrane layers on all construction, as deemed necessary by the Sacramento County Environmental Management Department, Environmental Health Division, Local Enforcement Agency (LEA) for the protection of public health and safety and the environment. [2007 EIR Mitigation Measure LA-5]	S/LS	S/LS	S/LS	LS
Impact 9.5: Exposure to Contaminated Soils from Agricultural Activities	Mitigation Measure 9.5: All future development proposals on portions of the Elverta Specific Plan area that are known to have supported livestock (cattle, hogs, poultry, etc.) holding areas or orchard land uses prior to the 1970's, shall implement a soil sampling and analysis program for organochlorine pesticides (i.e. DDT and toxaphene). In addition, orchard areas shall also include tests for arsenic and lead. Specific Plan area parcels that are known to have historically supported livestock holding areas include the following APNs: • 202-0080-052 • 202-0170-004 • 202-0170-005 • 203-0010-013 • 203-0040-021 Parcels that are known to have historically supported orchard land uses include the following APNs: • 202-0070-006 • 202-0080-020 (Participating Parcel) • 202-0080-057 • 202-0080-058 (Participating Parcel)	S/LS	S/LS	S/LS	LS

Legend: NI = No Impact; BI = Beneficial Impact; LS = Less-Than-Significant; S = Significant and Adverse

TABLE ES-1 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact Statement	Mitigation Measures	Original Impact / Residual Impact with Mitigation			
		Alternative A	Alternative B	Alternative C	Alternative D
	• 202-0170-019 (Participating Parcel) • 203-0040-003 • 203-0040-004 • 203-0040-050 Prior to implementation, the soil sampling and analysis program shall be approved by a toxicologist from the Cal-EPA, Office of Environmental Health Hazard Assessment (OEHHA) or other qualified professional (i.e., California Registered Environmental Assessor (REA II). The soil sampling results shall be submitted to the Cal-EPA, Department of Toxic Substances Control (DTSC), for a determination of whether detected concentrations of the sampled substances fall within acceptable health risk guidelines and, if they do not, the remedial measures that must be implemented to ensure the protection of human health. Prior to grading or construction activities, individual project proponents shall implement any measures required for the remediation of contaminated soils to protect human health. [2007 EIR Mitigation Measure TX-2]				
Impact 9.6: Contamination from Improperly Abandoned Wells and Septic Systems	Mitigation Measure 9.6 All water supply wells, septic tanks, leach lines and cisterns within the project area should be properly destroyed when their use ceases; this procedure requires a well abandonment permit (issued on a per-well basis) from the Sacramento County Environmental Management Department, Environmental Health Division. Large-diameter (old hand-excavated) wells, in addition to requiring a permit for well abandonment, should be backfilled in accordance with the recommendations of a qualified geotechnical engineer. [2007 EIR Mitigation Measure TX-4]	S/LS	S/LS	S/LS	LS
10. Hydrology, Flooding and Water Quality					
Impact 10.1: Impacts to Water Quality	None	LS	LS	LS	LS
Impact 10.2: Changes in Drainage and Flooding Patterns	Mitigation Measure 10.2: Comprehensive Drainage Plan. In order to ensure that the proposed development would not result in detrimental increases in stormwater flow or flooding on site or downstream, prior to construction, the project proponent shall prepare and adhere to the recommendations of a Comprehensive Drainage Plan. The comprehensive drainage plan shall provide engineering design level plans and implementation procedures for all proposed facilities, including proposed channels, stormwater retention facilities, storm drainage facilities, and other features needed to ensure no net increase in stormwater discharge under 2-year, 10-year, and 100-year storm events, as a result of project implementation. Project related increases in stormwater flows shall be assessed based on proposed changes in impervious surface coverage within areas where proposed facilities would be implemented, as well as proposed grading and related changes in site topography. With respect to Alternative A only, adherence to the design features and drainage characteristics contained in the Storm Drainage Master Plan (Appendix A) would satisfy, in part, these mitigation requirements. However, engineering level design of the proposed	S/LS	S/LS	S/LS	LS

Legend: NI = No Impact; BI = Beneficial Impact; LS = Less-Than-Significant; S = Significant and Adverse

TABLE ES-1 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact Statement	Mitigation Measures	Original Impact / Residual Impact with Mitigation			
		Alternative A	Alternative B	Alternative C	Alternative D
	drainage infrastructure would be required for compliance with this mitigation measure and also in support of County grading permits.				
Impact 10.3: Development within Floodplains and Interference with Flood Flows	None	NI	NI	NI	NI
11. Land Use and Agriculture					
Impact 11.1: Physically Divide an Existing Community	None	LS	LS	LS	LS
Impact 11.2: Consistency with Existing Land Use Plans and Policies	None	LS	LS	LS	LS
Impact 11.3: Consistency with the McClellan Airport Comprehensive Land Use Plan	None	LS	LS	LS	LS
Impact 11.4: Result in the Conversion of Farmland or Land under Williamson Act Contract to Non-Agricultural Use	None	LS	LS	LS	LS
12. Noise					
Impact 12.1 Construction Noise	Mitigation Measure 12.1: Alert Public of Construction. To further address potential nuisance impacts of construction, construction contractors shall implement the following: • Signs shall be posted at all construction site entrances to the Plan area upon commencement of proposed construction, for the purposes of informing all contractors/subcontractors, their employees, agents, material haulers, and all other persons at the applicable construction sites, of the basic requirements of the County's Noise Control Ordinance. • Signs shall be posted at the construction sites that include permitted construction days and hours, a day and evening contact number for the job site, and a contact number in the event of problems. • An onsite complaint and enforcement manager shall respond to and track complaints and questions related to noise.	S/LS	S/LS	S/LS	LS
Impact 12.2: Operational Noise	None	LS	LS	LS	LS
Impact 12.3: Airport Noise Impacts on Proposed Development	None	LS	LS	LS	LS
Impact 12.4: Traffic Generated Noise	Mitigation Measure 12.4: Traffic noise impacts should be reduced to within the General Plan Noise Element standard levels. In order for residential facades to be compliant with the	S/LS	S/LS	S/LS	LS

Legend: NI = No Impact; BI = Beneficial Impact; LS = Less-Than-Significant; S = Significant and Adverse

TABLE ES-1 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact Statement	Mitigation Measures	Original Impact / Residual Impact with Mitigation			
		Alternative A	Alternative B	Alternative C	Alternative D
	General Plan, the following mitigation measures have been provided by the 2007 EIR: • Building noise barriers or soundwalls; • Requiring increased setbacks; • Adding more streets to disperse traffic; • Use rubberized asphalt for road construction. Acoustical paving (i.e., rubberized asphalt) provides approximately 3 to 5 dB noise level reduction over standard asphalt and typical property line noise barriers of 6 to 8 feet high provides approximately 6 to 8 dB noise level reduction for receivers within approximately 25 feet of the barrier. Using some or all of these options, relative to extent of impact at each segment, would reduce the impacts of traffic noise to a less than significant impact.				
13. Public Services, Utilities and Recreation					
Impact 13.1: Increased Demand for Municipal Water Service and Facilities	None	LS	LS	LS	LS
Impact 13.2: Increased Demand for Municipal Wastewater Service and Facilities	Mitigation Measure 13.2: Wastewater Service. Prior to construction, each land use developer(s) shall prepare a design-level sewer study for review and approval by SASD and SRCSD to document that existing and/or proposed conveyance facilities have adequate capacity for the project.	S/LS	S/LS	S/LS	LS
Impact 13-3: Increased Generation of Solid Waste	None	LS	LS	LS	LS
Impact 13.4: Increased Demand for Energy and Infrastructure	None	LS	LS	LS	LS
Impact 13.5: Increased Demand for Law Enforcement Services	None	LS	LS	LS	LS
Impact 13.6: Increased Demand for Fire Protection Services	None	LS	LS	LS	LS
Impact 13.7: Increased Demands on Public School Facilities	None	LS	LS	LS	LS
Impact 13.8: Increased Demand for Libraries	None	LS	LS	LS	LS
Impact 13.9: Increased Demand for Recreation	None	LS	LS	LS	LS
14. Transportation and Traffic					
Impact 14.1: Deterioration or Worsening of Existing Roadway Segment LOS	Mitigation Measure 14.1a**:** Widen Baseline Road from Walerga Road to Cook-Riolo Road from two to four lanes.	S/S	S/S	S/S	S

Legend: NI = No Impact; BI = Beneficial Impact; LS = Less-Than-Significant; S = Significant and Adverse

TABLE ES-1 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact Statement	Mitigation Measures	Original Impact / Residual Impact with Mitigation			
		Alternative A	Alternative B	Alternative C	Alternative D
	Mitigation Measure 14.1b**:** Widen Elverta Road from SR 99 to Watt Avenue from two to four lanes. Mitigation Measure 14.1c**:** Widen Watt Avenue from Elverta Road to Don Julio Road from four to six lanes. Mitigation Measure 14.1d**:** Widen Dry Creek Road from Ascot Avenue to Elkhorn Boulevard from two to four lanes. Mitigation Measure 14.1e**:** Widen Raley Boulevard from I-80 to Ascot Avenue from two to four lanes.				
Impact 14.2: Deterioration or Worsening of Existing Intersection LOS	Mitigation Measure 14.2a**:** The project proponent shall pay their fair share toward the planned construction of a grade-separated SR 99 / Elverta Road interchange. Mitigation Measure 14.2b**:** Install a traffic signal at SR 99 Northbound Off-Ramp / Elkhorn Boulevard. Mitigation Measure 14.2c**:** Install a traffic signal; install northbound and southbound left-turn lanes; and widen the eastbound and westbound approaches to include one left-turn lane, one through lane; and a shared through/right-turn lane on each approach at Elverta Road / East Levee Road. Mitigation Measure 14.2d**:** Install a traffic signal; install northbound and southbound left-turn lanes; and widen the eastbound and westbound approaches to include one left-turn lane, one through lane, and a shared through/right-turn lane on each approach at Elverta Road / Sorento Road. Mitigation Measure 14.2e**:** Install a traffic signal; install northbound and southbound left-turn lanes; and widen the eastbound and westbound approaches to include one left-turn lane, one through lane, and a shared through/right-turn lane on each approach at Elverta Road / Elwyn Road. Mitigation Measure 14.2f**:** Install a traffic signal; widen eastbound approach to include one through lane, and a shared through/right-turn lane; and widen the westbound approach to include one left-turn lane and two through lanes at Elverta Road / Rio Linda Boulevard. Mitigation Measure 14.2g**:** Install a traffic signal and install northbound and southbound left-turn lanes at U Street / Dry Creek Road. Mitigation Measure 14.2h**:** Install a traffic signal and install exclusive left-turn lanes on each approach at Q Street / Dry Creek Road. Mitigation Measure 14.2i**:** Install a traffic signal; widen the northbound approach to include one left-turn lane, one through lane, and one right-turn lane; widen eastbound approach to include one left-turn lane, two through lanes, and one right-turn lane; widen southbound approach to include one left-turn lane and one shared through/right-turn lane; and widen westbound approach to include one left-turn lane, one through lane, and one shared through/right-turn lane at Elverta Road / 16th Street.	S/S	S/S	S/S	S

Legend: NI = No Impact; BI = Beneficial Impact; LS = Less-Than-Significant; S = Significant and Adverse

TABLE ES-1 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact Statement	Mitigation Measures	Original Impact / Residual Impact with Mitigation			
		Alternative A	Alternative B	Alternative C	Alternative D
	Mitigation Measure 14.2j**:** Widen the northbound approach to include one left-turn lane and one right-turn lane; widen the eastbound approach to include two through lanes and one right-turn lane; and widen the westbound approach to include one left-turn lane and two through lanes at Elverta Road / 28th Street. Mitigation Measure 14.2k**:** Optimize the traffic signal (reallocate the green time by approach) at Baseline Road / Watt Avenue. Mitigation Measure 14.2l: Install one additional eastbound right-turn lane at Elverta Road / Watt Avenue.				
Impact 14.3: Deterioration or Worsening of Existing Freeway Mainline, Merge, and Diverge LOS	Mitigation Measure 14.3: Widen SR 99 between I-5 and Elkhorn Boulevard to provide one additional lane in each direction.	S/S	S/S	S/S	S
Impact 14.4: Deterioration or Worsening of Cumulative Roadway Segment LOS	Mitigation Measure 14.4a**:** Widen Elverta Road from 16th Street to 28th Street from four to six lanes. Mitigation Measure 14.4b: Widen Watt Avenue from Elverta Road to Antelope Road from four to six lanes. Mitigation Measure 14.4c: Implement Mitigation Measures 14.1d (Widen Dry Creek Road from Ascot Avenue to Elkhorn Boulevard from two to four lanes).	S/S	S/S	S/S	S
Impact 14.5: Deterioration or Worsening of Cumulative Intersection LOS	Mitigation Measure 14.5a: Implement Mitigation measure 14.2b (Install traffic signal at SR 99 Northbound Off-Ramp / Elkhorn Boulevard) and restripe the northbound approach to include one shared left/right-turn lane and an exclusive right-turn lane at SR 99 Northbound Off-Ramp / Elkhorn Boulevard. Mitigation Measure 14.5b: Implement Mitigation Measure 14.2c (Install a traffic signal and implement lane reconfiguration at Elverta Road / East Levee Road). Mitigation Measure 14.5c: Install a traffic signal at Elkhorn Boulevard / East Levee Road. Mitigation Measure 14.5d: Implement Mitigation Measure 14.2d (Install a traffic signal and implement lane reconfiguration at Elverta Road / Sorento Road). Mitigation Measure 14.5e: Implement Mitigation Measure 14.2e (Install a traffic signal and implement lane reconfiguration at Elverta Road / Elwyn Road). Mitigation Measure 14.5f: Implement Mitigation Measure 14.2f (Install a traffic signal and implement lane reconfiguration at Elverta Road / Rio Linda Boulevard). Mitigation Measure 14.5g: Install a traffic signal at Elverta Road/9th Street. Mitigation Measure 14.5h: Implement Mitigation Measure 14.2h (Install a traffic signal and install exclusive left-turn lanes on each approach at Q Street / Dry Creek Road). Mitigation Measure 14.5i: Optimize the traffic signal (reallocate the green time by approach) at Elverta Road / 28th Street. Mitigation Measure 14.5j: Install right-turn overlap traffic signal phase for eastbound and	S/S	S/S	S/S	S

Legend: NI = No Impact; BI = Beneficial Impact; LS = Less-Than-Significant; S = Significant and Adverse

TABLE ES-1 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact Statement	Mitigation Measures	Original Impact / Residual Impact with Mitigation			
		Alternative A	Alternative B	Alternative C	Alternative D
	westbound approaches at Elverta Road / Watt Avenue.				
Impact 14.6: Deterioration or Worsening of Cumulative Freeway Mainline, Merge, and Diverge LOS	Mitigation Measure 14.6a: Implement Mitigation Measure 14.3a (widen SR 99 between I-5 and Elkhorn Boulevard to provide one additional lane in each direction). Mitigation Measure 14.6b: Widen SR 99 between Elkhorn Boulevard and Elverta Road to provide one additional lane in each direction. Mitigation Measure 14.6c: Widen SR 99 mainline between Elverta Road and Riego Road to provide one additional lane in each direction.	S/S	S/S	S/S	S
Impact 14.7: Increased Demand for Public Transit	Mitigation Measure 14.7: The project proponent shall work with Sacramento County and Regional Transit (RT) to upgrade the existing transit stop and provide additional facilities, if warranted. Transit facilities would be developed by RT through coordination with Sacramento County.	S/LS	S/LS	S/LS	LS
Impact 14.8: Increased Demand for Non-Motorized Travel	None	LS	LS	LS	LS

Legend: NI = No Impact; BI = Beneficial Impact; LS = Less-Than-Significant; S = Significant and Adverse

CHAPTER 1.0
Purpose and Need

1.1 Introduction

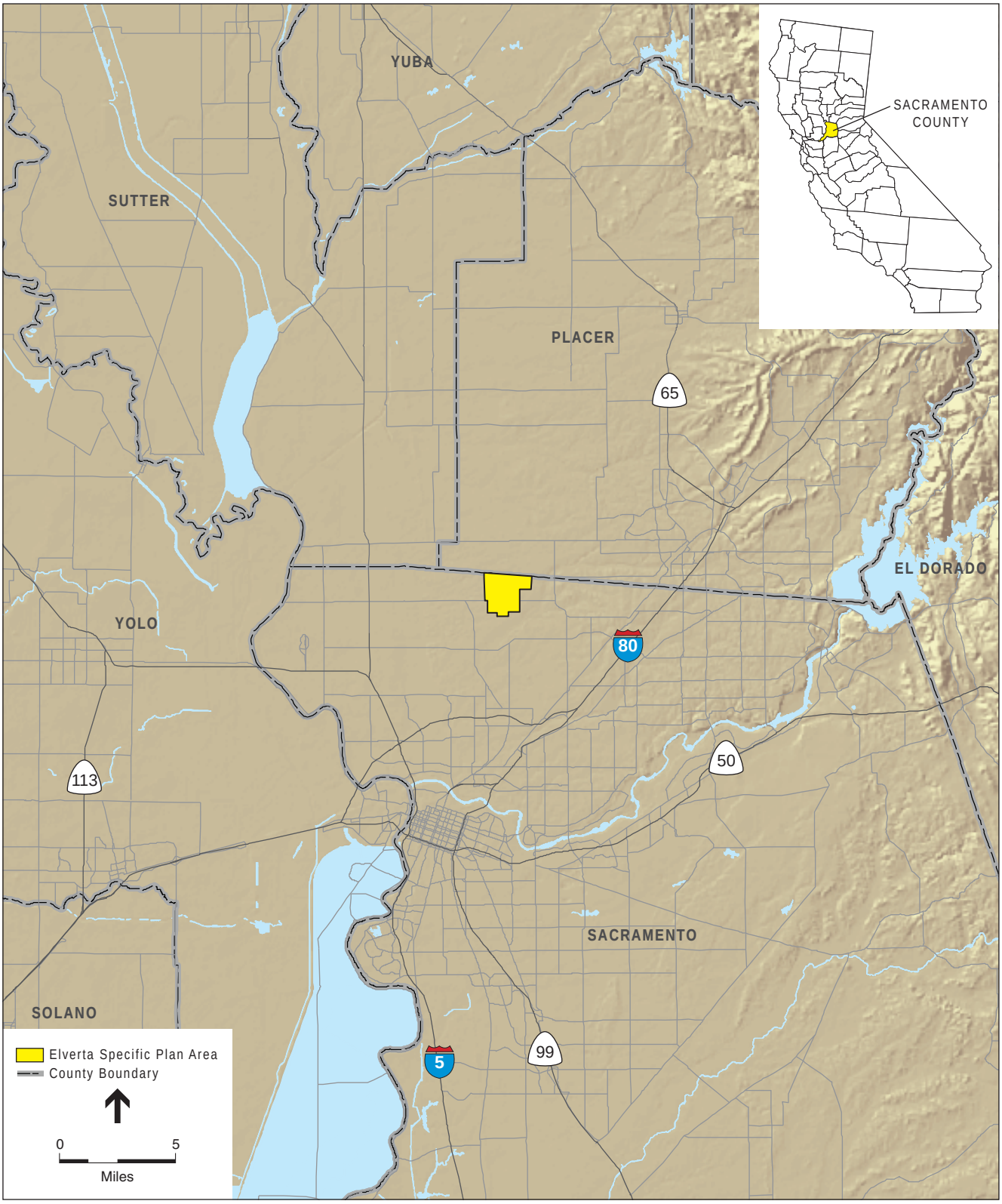
The National Environmental Policy Act (NEPA) requires the preparation of an Environmental Impact Statement (EIS) for major federal actions that may significantly affect the environment. This Draft EIS has been prepared by the U.S. Army Corps of Engineers (USACE), Sacramento District for the Elverta Specific Plan (hereinafter referred to as "Plan"), which proposes the development of a mixed-use, mixed-density, master planned community. The proposed action under NEPA is the USACE consideration of authorization of the Applicant's Preferred Alternative pursuant to Section 404 of the Clean Water Act.

This document evaluates the potential impacts on the human environment that may result from implementing the Applicant's Preferred Alternative or other alternatives. The EIS also addresses potential mitigation measures that may reduce or avoid significant adverse impacts. The Draft EIS has been prepared pursuant to the following statutes and regulations: NEPA (42 US Code § 4321 et seq.); the Council on Environmental Quality Regulations for Implementing NEPA (40 Code of Federal Regulations [CFR] Parts 1500-1508); USACE NEPA regulations (33 CFR Part 230 and 33 CFR Part 325, Appendix B); Implementation Procedures for the USACE Regulatory Program (33 CFR Parts 320-332); the Clean Water Act (33 US Code § 1251 et seq.) and the requirements of the Clean Water Act 404(b)(1) guidelines (40 CFR Part 230).

1.2 Project Location

The Elverta Specific Plan is located on approximately 1,745 acres in north-central Sacramento County, California. A regional location map is provided as **Figure 1-1**. An aerial photograph is provided as **Figure 1-2** and reflects the current agricultural and largely undeveloped nature of the Plan area. The Plan area is bounded by U Street to the south, Gibson Ranch Park to the east, the Sacramento County/Placer County line to the north and rural residential properties to the west. The location corresponds to Township 10 North, Range 5 East, Sections 9, 10, 15, 16, 21 and 22 of the Rio Linda United States Geological Survey (USGS) 7.5-minute topographic quadrangle map (1980).

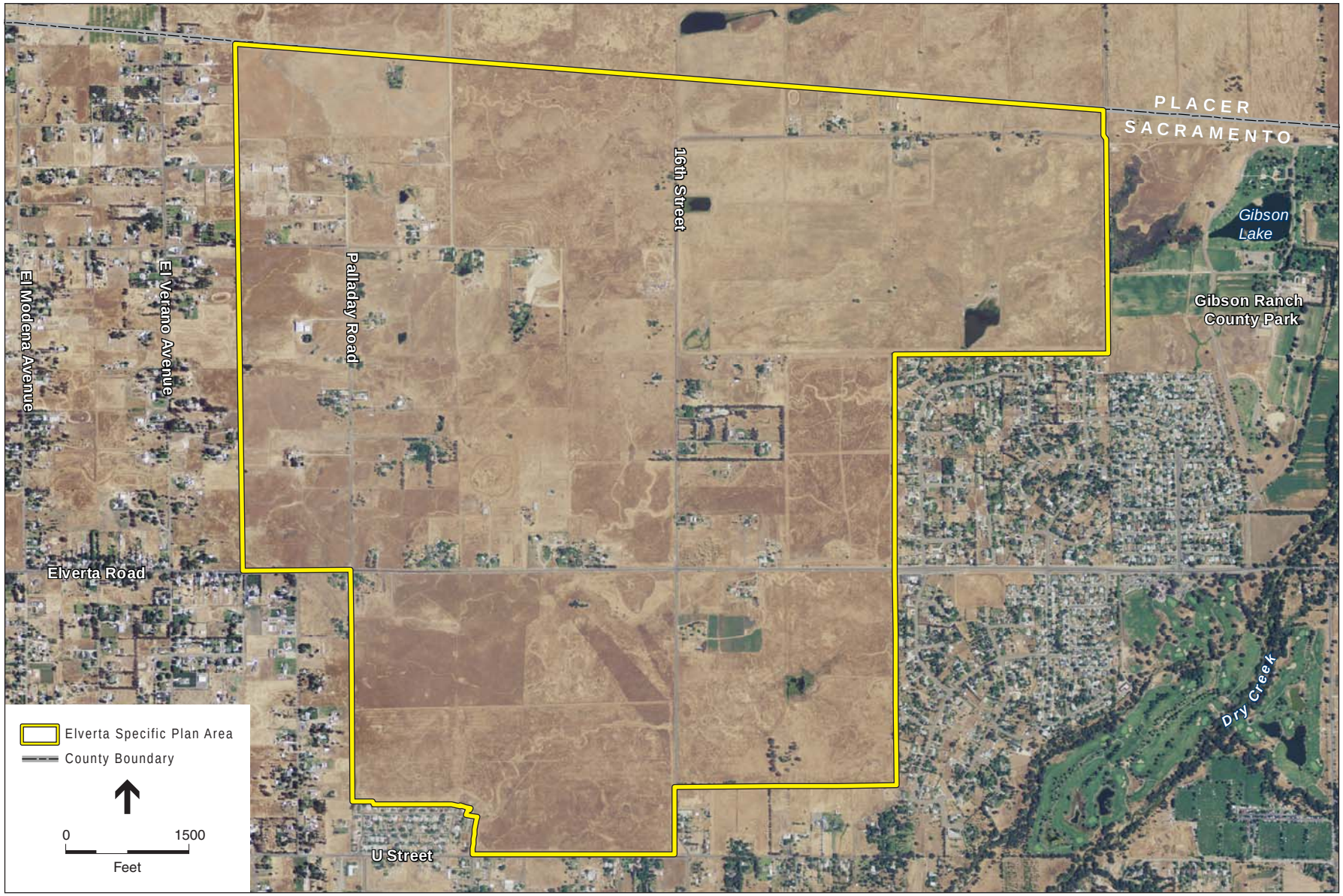
Within the Plan area are 563 acres owned by several individual landowners who have filed applications with the USACE for Section 404 permits. This area, referred to as the participating parcels, is shown in **Figure 1-3**. **Figure 1-4** is a map that locates and identifies all parcels within the Elverta Specific Plan.



Elverta Specific Plan EIS . 207431

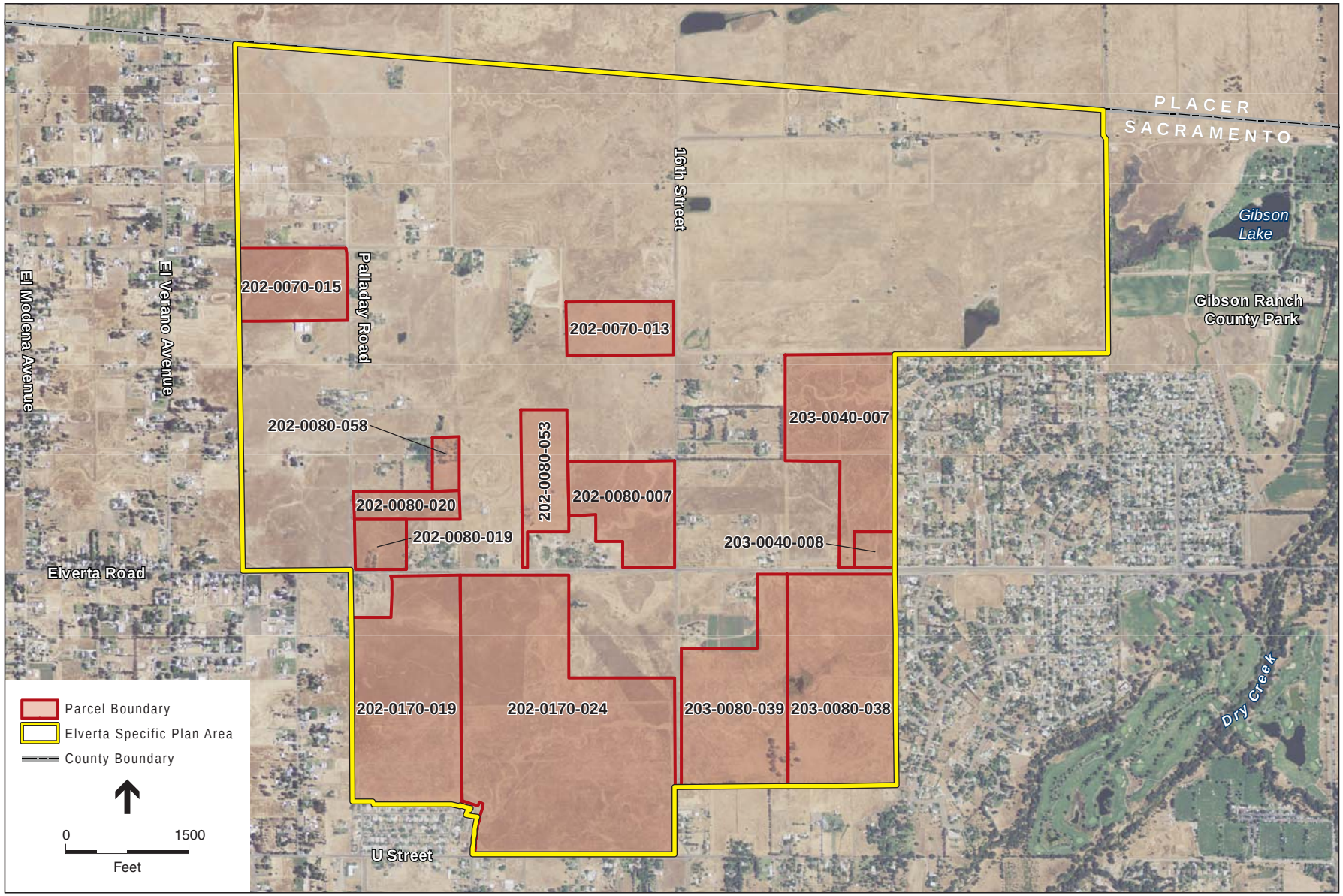
SOURCE: ESRI, 2006; and ESA, 2011

Figure 1-1
Regional Location



SOURCE: ESRI, 2009; NAIP, 2009; RCH Group, 2010; and ESA, 2011

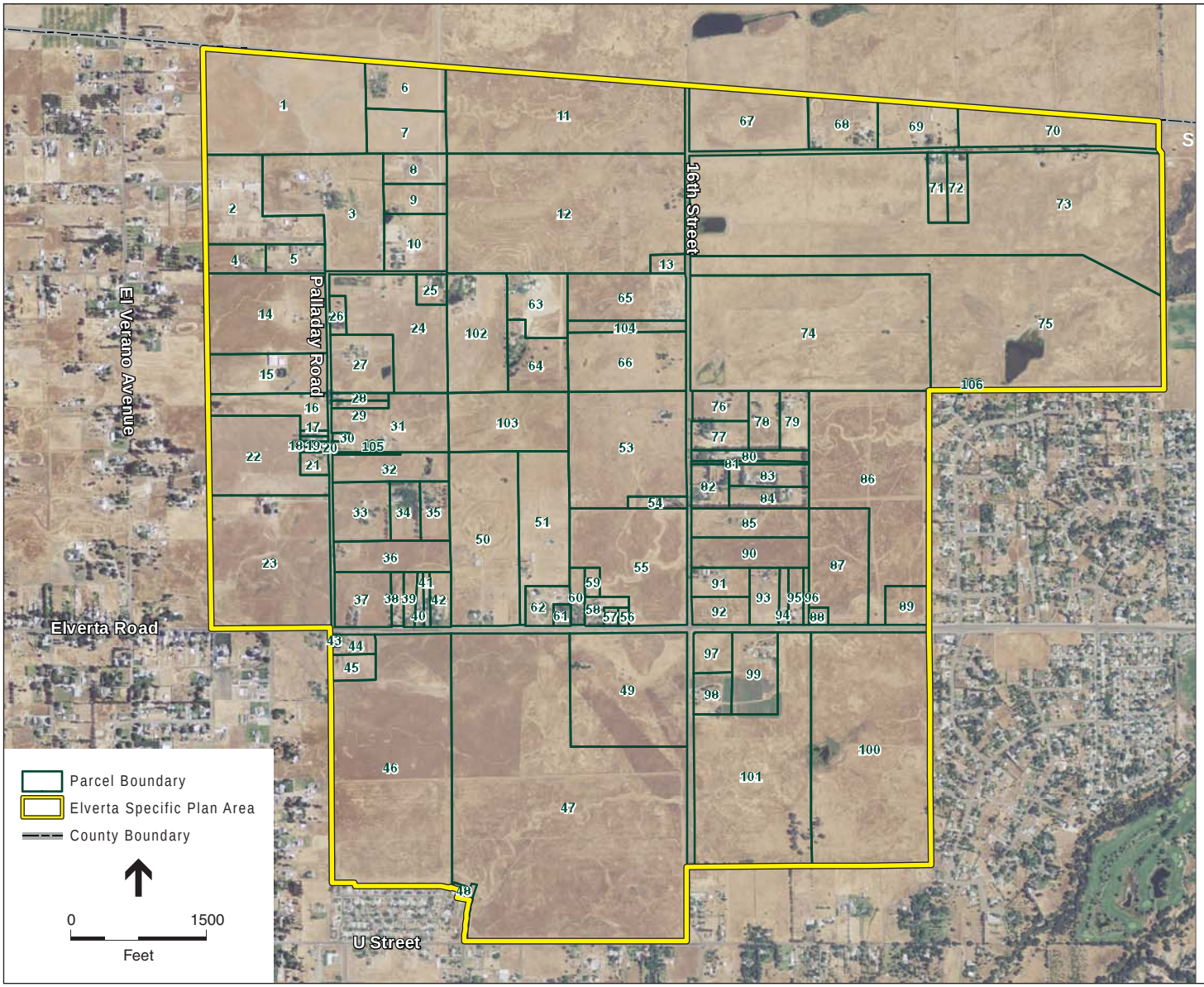
Figure 1-2
Project Site



SOURCE: NAIP, 2009; and ESA, 2012

Elverta Specific Plan EIS . 207431

Figure 1-3
Participating Parcels



KEY	APN	KEY	APN
1	202-0070-034	55	202-0080-007*
2	202-0070-031	56	202-0080-051
3	202-0070-032	57	202-0080-050
4	202-0070-041	58	202-0080-046
5	202-0070-040	59	202-0080-010
6	202-0070-035	60	202-0080-011
7	202-0070-036	61	202-0080-024
8	202-0070-037	62	202-0080-025
9	202-0070-038	63	202-0070-027
10	202-0070-039	64	202-0070-026
11	202-0070-002	65	202-0070-018
12	202-0070-006	66	202-0070-013*
13	202-0070-007	67	203-0010-001
14	202-0070-015*	68	203-0010-012
15	202-0070-014	69	203-0010-013
16	202-0080-049	70	203-0010-003
17	202-0080-029	71	203-0010-006
18	202-0080-030	72	203-0010-005
19	202-0080-031	73	203-0010-016
20	202-0080-032	74	203-0010-014*
21	202-0080-034	75	203-0010-015
22	202-0080-048	76	203-0040-052
23	202-0080-047	77	203-0040-029
24	202-0070-020	78	203-0040-051
25	202-0070-021	79	203-0040-050
26	202-0070-010	80	203-0040-021
27	202-0070-016	81	203-0040-047
28	202-0080-036	82	203-0040-046
29	202-0080-037	83	203-0040-048
30	202-0080-035	84	203-0040-049
31	202-0080-038	85	203-0040-019
32	202-0080-059	86	203-0040-007*
33	202-0080-056	87	203-0040-023
34	202-0080-057	88	203-0040-022
35	202-0080-058*	89	203-0040-008*
36	202-0080-020*	90	203-0040-016
37	202-0080-019*	91	203-0040-003
38	202-0080-044	92	203-0040-004
39	202-0080-045	93	203-0040-013
40	202-0080-017	94	203-0040-042
41	202-0080-016	95	203-0040-030
42	202-0080-015	96	203-0040-015
43	202-0170-003	97	203-0080-044
44	202-0170-004	98	203-0080-045
45	202-0170-005	99	203-0080-037
46	202-0170-019*	100	203-0080-038*
47	202-0170-024*	101	203-0080-039*
48	202-0170-032	102	202-0070-024
49	202-0170-025	103	202-0080-042
50	202-0080-052	104	202-0070-019
51	202-0080-053*	105	202-0080-054
53	202-0080-005	106	203-0660-006
54	202-0080-006		

*Participating Parcels

SOURCE: NAIP, 2009; and ESA, 2011

Elverta Specific Plan EIS . 207431

Figure 1-4

Elverta Specific Plan Parcel Locations

The entire Plan area can be characterized as generally flat with an elevation decline of roughly 35 feet from east to west. Accordingly, most of the Plan area drains from the northeast to the southwest, with a small portion of the Plan area draining to the northwest into Placer County. Most of the land has been altered by past or current agricultural activity, including the cultivation of crops, the development of fish farms and animal grazing. Grading for some of these land uses has resulted in artificial landforms that have historically held water for periods of time, including seasonal ponds and other features.

Existing watercourses include four intermittent to ephemeral streams, one in the northwesterly portion of the area and three central to the project site. All onsite channels drain towards Steelhead Creek (formerly the Natomas East Main Drainage Canal). Significant landscape features are for the most part man-made, including planted windbreaks along roads and individually landscaped homes. Transmission lines bisect the Plan area from northwest to southeast.

Existing land uses within the Specific Plan area are predominantly agrarian, and include hay crops, non-irrigated grazing, and irrigated truck farming. Much of the grazing and pasturelands are associated with equestrian activities. On-site improvements include single-family residences and local roadways: Elverta Road, 16th Street and Palladay Road.

1.3 Background

At the request of the Elverta Specific Plan Property Owners Group, the Sacramento County Board of Supervisors (Board) initiated a Specific Plan process for the Plan area in 1998. A draft land use plan, Specific Plan text and maps, and background reports were prepared in support of the Plan. In addition, a Draft Environmental Impact Report (EIR) and a Revised Draft EIR were prepared and circulated to satisfy the requirements of the California Environmental Quality Act (CEQA). The Final EIR was published by the Sacramento County Department of Environmental Review and Assessment (DERA) in May 2007.

The EIR provided a site plan that identified participant properties at the time of publication. Since that time the mix of participating properties has changed. For this reason, figures and analyses in the EIR and in various technical documents show differing patterns of included parcels within the Plan area as compared to those currently described in the Applicant's Preferred Alternative. However, because the EIR was both a Program and Master EIR (under CEQA), it evaluated impacts at a programmatic level for the entire Plan area, and all parcels that are included in the Applicant's Preferred Alternative were evaluated by DERA in the EIR. The Final EIR was certified on May 30, 2007. On August 8, 2007, the Board of Supervisors adopted the Elverta Specific Plan, Community Plan Amendment, Zoning Ordinance Amendment, Rezones, and Financing Plan. The Zoning Ordinance Amendment is found in Title VI, Chapter 4 "Special Planning Areas", Article 608-10 of the County's Zoning Code.

In October 2011, the Elverta Owners Group ("Applicant") submitted several Section 404 permit applications to the USACE to develop specific parcels and infrastructure within the Plan area. The Applicant, which is comprised of multiple landowners, submitted individual permit applications for 13 separate development parcels (or 13 separate projects). An additional

application has been submitted to the USACE to construct the infrastructure (including primary roadways) needed to serve the participating parcels. An additional parcel within the Plan area does not contain jurisdictional waters of the U.S., but is considered participating for infrastructure purposes. Each of the projects is complete and independent from one another; however, each of the projects relies upon the common drainage, roadways, and sewer infrastructure as described in the infrastructure permit application.

The applications include activities that would result in the discharge of dredged or fill material into waters of the U.S. and thus require authorization under Section 404 of the Clean Water Act. The USACE has determined that granting permits pursuant to Section 404 may be considered a major federal action under NEPA that is expected to result in significant impacts to the human environment and therefore initiated the preparation of this EIS.

1.4 Purpose and Need

NEPA regulations (40 CFR § 1502.13) require that an EIS contain a statement of the purpose and need which "shall briefly specify the underlying purpose and need to which the agency is responding in proposing the alternatives, including the proposed action." The Rio Linda/Elverta Community Plan (RLECP) identified the need for a development that "emphasizes traditional, small-town mixed-use retail and residential land use patterns in the urban areas, encourages buildout of agricultural-residential areas [developments that avoid the appearance of urban subdivisions through incorporating open space in their design], and maintains agricultural and open space" (Sacramento County, 1997). The locally approved Plan proposes a large scale, mixed use, mixed density master planned community in north-central Sacramento County to meet this need. In addition, the Sacramento County General Plan (Land Use Element) identifies the need for "an orderly pattern of land use that concentrates urban development, enhances community character and identity through the creation and maintenance of neighborhoods, is functionally linked with transit, and protects the County's natural, environmental and agricultural resources" (Sacramento County, 2011). The USACE has determined that the following purpose statement responds to the above need:

> *A large scale, mixed use, mixed density master planned community in north-central Sacramento County.*

Per 40 CFR § 1502.13, the stated purpose and need has guided the development of the alternatives presented in Chapter 2.

1.5 Clean Water Act Section 404(b)(1) Guidelines

The proposed action under NEPA is the USACE consideration of authorization under Section 404 of the Clean Water Act of the Applicant's Preferred Alternative. The Applicant's Preferred Alternative includes the fill of approximately 27.57 acres of wetlands and other waters of the U.S. within the participating parcels. The USACE must apply the U.S. Environmental Protection Agency's (USEPA or EPA) *Section 404(b)(1) Guidelines for Specification of Disposal Sites for Dredged or Fill Material* (40 CFR Part 230) (hereafter referred to as Section 404(b)(1) Guidelines) when evaluating applications for discharges into waters of the U.S. under the Clean Water Act.

The Section 404(b)(1) Guidelines prohibit the discharge of dredged or fill materials to waters of the U.S. if there is a "practicable alternative to the proposed discharge that would have less adverse impact on the aquatic ecosystem, so long as the alternative does not have other significant adverse consequences" (40 CFR § 230.10a). An alternative is "practicable" if it is "available and capable of being done after taking into consideration cost, existing technology and logistics in light of overall project purposes" (40 CFR § 230.10(a)(2)). Practicable alternatives include activities that do not involve a discharge of fill into waters of the U.S. or involve a discharge at other locations in waters of the U.S. An area not "presently" owned by an applicant may be considered as an alternative discharge location if it could be reasonably "obtained, utilized, expanded, or managed to fulfill the basic purpose of the proposed action" (40 CFR §230.10(a)(2)).

If the proposed activity would involve a discharge into a special aquatic site such as a wetland, the Section 404(b)(1) Guidelines distinguish between those projects that are water dependent and those projects that are not. The Applicant's Preferred Alternative is not water dependent, as none of the basic purposes (e.g., development, infrastructure) are water dependent. The Section 404(b)(1) Guidelines establish two "presumptions" for non-water dependent projects that propose a discharge into a special aquatic site: 1) that a practicable alternative is available that does not involve discharging into a special aquatic site; and 2) that all practicable alternatives to a proposed discharge which do not involve a discharge into a special aquatic site would have less adverse impacts to aquatic resources. The applicant has the burden of clearly demonstrating that these presumptions do not apply in a particular case (40 CFR § 230.10(a)(3)).

The Section 404(b)(1) Guidelines have substantive requirements in addition to the "practicable alternative" standard. These include prohibiting discharges that cause or contribute to violation of water quality standards, violate any toxic effluent limit under Section 307 of the Clean Water Act, or jeopardize the continued existence of any threatened or endangered species or destroy or modify its critical habitat (40 CFR § 230.10(b)). If a federally-listed threatened or endangered species may be affected by a project, then the USACE is required to consult with the U.S. Fish and Wildlife Service (USFWS) and/or National Marine Fisheries Service, pursuant to 33 CFR § 320.3 and Section 7 of the Endangered Species Act. The Section 404(b)(1) Guidelines also prohibit any discharge that causes or contributes to significant degradation of the waters of the U.S.

Prior to issuing a permit, the USACE will make a series of factual determinations with respect to the least environmental damaging practicable alternative (LEDPA) based on the criteria contained in 40 CFR Part 230. The criteria include both direct and indirect impacts to aquatic resources, impacts to endangered species, impacts to other significant wildlife, and human use characteristics. The 404(b)(1) Guidelines prohibit USACE from authorizing any alternative except the LEDPA. This Draft EIS includes information regarding the Applicant's Preferred Alternative and alternatives that the USACE will use in making its determination of the LEDPA and factual determinations.

1.6 Agency Roles and Responsibilities

1.6.1 Lead and Cooperating Agencies

Some involved agencies have specific responsibilities identified by NEPA. The USACE, Sacramento District, is the lead federal agency under NEPA. USACE will use the EIS to make decisions for the Applicant's Preferred Alternative or alternatives.

Under NEPA, the lead agency may request other agencies which have jurisdiction or special expertise with respect to a particular issue to be cooperating agencies (40 CFR § 1501.6). USACE invited several federal, state, and local agencies to participate as cooperating agencies. Cooperating agencies include the U.S. Environmental Protection Agency (EPA), U.S. Fish and Wildlife, Sacramento County, and the Sacramento Metropolitan Air Quality Management District (SMAQMD).

1.6.2 Permits and Other Approvals

The following list identifies the necessary permits and other actions required by federal, state and regional agencies for implementation of the Applicant's Preferred Alternative or alternatives.

1.6.2.1 Federal Actions/Permits

U.S. Army Corps of Engineers

The Applicant's Preferred Alternative includes development of approximately 563 acres of the Plan area. The Elverta Owners Group, has submitted individual permit applications for 13 separate development parcels and one application for the infrastructure to serve the Plan area. The applications include activities that would result in the discharge of dredged or fill material into approximately 27.57 acres waters of the U.S. Department of the Army (DA) permits under Section 404 of the Clean Water Act are required for these discharges.

U.S. Fish and Wildlife Service

USACE will consult with USFWS under Section 7 of the Federal Endangered Species Act. This is required for the issuance of a Biological Opinion and authorization for the incidental take of federally-listed endangered and threatened species that are expected to be affected.

1.6.2.2 State Actions/Permits

Central Valley Regional Water Quality Control Board (Region 5)

The Central Valley Regional Water Quality Control Board (RWQCB) requires a National Pollutant Discharge Elimination System construction stormwater permit (Notice of Intent to proceed under General Construction Permit) for disturbance of more than one acre. The RWQCB also requires a discharge permit for stormwater, a general order for dewatering, and Section 401 Clean Water

Act certification and/or waste discharge requirements for discharges of dredged or fill material. USACE requires the applicant to obtain Section 401 Water Quality Certification (WQC) prior to issuance of a permit under Section 404 of the Clean Water Act.

California State Historic Preservation Officer

USACE will consult with the California State Historic Preservation Officer (SHPO) pursuant to Section 106 of the National Historic Preservation Act (NHPA) for potential impacts to historic and/or cultural resources.

California Department of Fish and Game, Sacramento Valley—Central Sierra Region

The California Department of Fish and Game requires a Streambed Alteration Agreement (Fish and Game Code Section 1602) for alterations to stream and lake features regulated under state Fish and Game Code within the Plan area.

California Department of Education

The California Department of Education provides approval of state funds to acquire a school site if state funding is sought.

1.6.2.3 Regional and Local Actions/Permits

Sacramento County

Actions Already Approved

- Adoption of the Elverta Specific Plan. This action was completed on August 8, 2007.
- Adoption of a Public Facilities Financing Plan. This action was completed on August 8, 2007.

Actions Still to be Completed

- Adoption of a Public Facilities Infrastructure/Phasing Plan.
- Approval of a development agreement between the County and developers.
- Approval of other future discretionary entitlements and permits (e.g., small-lot tentative subdivision maps, design review approvals, use permits).
- Approval of off-site improvements within County rights-of-way, including transportation and utility infrastructure. County departments involved in approvals include, but are not limited to, the County Department of Transportation, County Department of Water Resources, and Sacramento Regional County Sanitation District.

Rio Linda/Elverta Community Water District and California American Water Company

The Rio Linda/Elverta Community Water District and California American Water Company are responsible for approvals associated with provision of water service.

Sacramento Metropolitan Air Quality Management District

The Sacramento Metropolitan Air Quality Management District (SMAQMD) requires any business or person to obtain an Authority to Construct and Permit to Operate (pursuant to SMAQMD Rule 201) before installing or operating new equipment or processes that may release or control air pollutants to ensure that compliance with SMAQMD rules and regulations. A few examples of operations or equipment that usually require SMAQMD permits include gasoline stations, solvent cleaning (degreasers), auto body refinishing, and internal combustion engines. In addition, specific mitigation processes would require SMAQMD approval as well. These include any potential mitigation fees associated with construction as well as an Air Quality Mitigation Plan to reduce operational emissions.

1.7 Intended Use and Scope of Analysis

The use of the Draft EIS is based on the agency's approval authority. USACE has the principal responsibility for making permit decisions under Section 404 of the Clean Water Act and ensuring that the requirements of NEPA have been met prior to making permit decisions.

33 CFR Part 325, Appendix B, 7(b) states that the scope of the NEPA document should be established "to address the impacts of the specific activity requiring a DA permit and those portions of the entire project over which the district engineer has sufficient control and responsibility to warrant federal review." The scope of this document is further defined in Chapter 2, "Alternatives."

1.8 Type of EIS (Project-Level and Programmatic Analysis)

This EIS is both a project-level and programmatic analysis. The project-level analysis considers the effects of the initial phase of the Elverta Specific Plan, specifically the development of the participating parcels, which comprise approximately 563 acres of the 1,745-acre Plan area. This EIS identifies performance standards (e.g., setbacks and other measures to protect biological resources) and mitigation measures that will apply to the Applicant's Preferred Alternative and alternatives. A reasonable range of alternatives is evaluated at an equal level of detail, including a No Permit Alternative.

In addition, the program-level analysis addresses the impacts of developing the entire Plan area. The remainder of the Plan area includes individual land owners who are not participating in the request for the 404 permits at this time, but may do so in the future. Non-participants will be required to submit separate applications to the Corps, as necessary, to secure permits needed to develop their property at a future date. The development of the remainder of the Plan area was considered in the Cumulative Effects analysis (**Section 4.16**).

1.8.1 Regional Impacts

While most of the environmental consequences described in **Chapter 4** focused on the impacts of developing the initial phase (participating parcels) of the Plan, the analyses of Transportation and Traffic (**Section 4.14**), Air Quality and Global Climate Change (**Section 4.3**), and Noise (**Section 4.12**) are considered more regional and not driven by the specific "footprint" of the participating parcels. This is because the 404 permit application package for the participating parcels in the Plan Area will include an application for the development of the roadway infrastructure that would serve not only the participating parcels, but the entire Plan Area. Because the proposed roadway infrastructure would allow for the full buildout of the Plan area, the impact analysis for these more regional resource areas (Air, Noise, and Traffic) evaluate the potential impacts of the full buildout of the Plan Area in their specific impact discussions. As described above, the potential effects that full buildout of the Plan Area may have on other resource areas are discussed in detail in **Section 4.16**, Cumulative Effects.

1.9 Overview of the NEPA Process

1.9.1 Notice of Intent

USACE published a Notice of Intent (NOI) in the Federal Register, Vol. 74, No. 109 on June 9, 2009, to inform agencies and the general public that a Draft EIS was being prepared and invited comments on the scope and content of the document (see **Appendix B**). The NOI also provided information on the date and time of the public scoping meeting. There is no mandated time limit to receive written comments in response to the NOI under NEPA and USACE informed the public that comments would be accepted until publication of this DEIS.

1.9.2 Scoping

The USACE held a public scoping meeting to solicit input from interested parties on June 24, 2009 from 4 p.m. to 7 p.m. at the Rio Linda Elverta Community Center, in Rio Linda, CA. Attendees were given the opportunity to ask questions and to provide written and oral comments. A scoping report was finalized in October 2009 and is included as **Appendix B**. The scoping report contains a copy of the NOI, oral comments from the scoping meeting, and written comments received.

Based on NEPA guidelines and scoping undertaken, the Draft EIS includes an evaluation of the following issue areas:

- Aesthetics (Visual Resources, Light and Glare)
- Air Quality and Global Climate Change
- Terrestrial Biological Resources
- Aquatic Resources
- Cultural and Historic Resources

- Socioeconomics and Environmental Justice
- Geology, Soils, and Mineral Resources
- Hazards and Hazardous Materials
- Hydrology, Flooding and Water Quality
- Land Use and Agriculture
- Noise
- Public Services (Police, Fire, Libraries, Schools, and Parks)
- Utilities (Water, Wastewater, Solid Waste, and Energy)
- Recreation
- Traffic and Transportation
- Indirect Effects, including Growth Inducement
- Cumulative Effects

1.9.3 Draft EIS

The Draft EIS is being distributed to interested agencies, stakeholder organizations and individuals. This distribution ensures that interested parties have an opportunity to express their views regarding the environmental effects of the Applicant's Preferred Alternative and alternatives, and to ensure that information pertinent to permits and approvals is provided to decision makers.

This document is available for review by the public during normal business hours at the U.S. Army Corps of Engineers, Sacramento District, 1325 J Street, Room 1350, Sacramento, California 95814 and at the Rio Linda Library, 902 Oak Lane, Rio Linda, California 95673. The Draft EIS is being circulated for a 45-day review period that will end on February 4, 2013.

Written comments postmarked no later than February 4, 2013, should be sent to the following address:

Marc Fugler
U.S. Army Corps of Engineers, Sacramento District
1325 J Street, Room 1350
Sacramento, California 95814
email: Marc.A.Fugler@usace.army.mil

If comments are provided via e-mail, please include "Elverta Specific Plan EIS" in the subject line, attach comments in MS Word format and include the commenter's address.

A public meeting on the Draft EIS will be conducted by USACE on January 16, 2012 from 4 p.m. to 7 p.m. at the Rio Linda Elverta Community Center, 810 Oak Lane, Rio Linda, CA 95673. Comments on the Draft EIS will be accepted at the meeting and a court recorder will be present to record verbal comments. Comments may also be submitted in writing throughout the comment period as described above.

1.9.4 Final EIS

Following public review of the Draft EIS, a Final EIS will be prepared in which the lead agency will provide responses to substantive comments on the Draft EIS and describe any revisions. The Final EIS will be made available for public review. After public review, USACE will decide on the action and publish a Record of Decision.

1.10 Standard Terminology, Acronyms, and Abbreviations

1.10.1 Standard Terminology

The following standard terminology is used in this Draft EIS:

- **Specific Plan** and **Plan** refer to the Elverta Specific Plan.
- **Project site** and **Plan area** refer to the 1,745-acre Elverta Specific Plan area depicted on **Figure 1-2**.
- **Participating Parcels** refers to the 563 acres owned by individual landowners who are participating in the request for 404 permits as depicted on **Figure 1-3**.
- **Applicant** refers to the Elverta Owners Group.
- **Applicant's Preferred Alternative** refers to the activities currently proposed by the Applicant under Alternative A, i.e., the new development proposed on the participating properties within the Plan area.
- **2007 EIR** refers to the EIR that was certified in 2007 by the County of Sacramento for the Elverta Specific Plan and Associated Subdivision Map Known as Countyside Equestrian Estates (DERA, 2007).

1.10.2 Acronyms and Abbreviations

Acronyms and abbreviations used in this Draft EIS are provided with the Table of Contents.

1.11 References

DERA, 2007. Final Environmental Impact Report – Elverta Specific Plan and Associated Subdivision Map Known as Countryside Equestrian Estates. County of Sacramento Department of Environmental Review and Assessment Published May 2007.

Sacramento County. 1997. *Rio Linda / Elverta Community Plan*. Prepared by the Sacramento County Department of Planning and Community Development.

Sacramento County. 2011. *Sacramento County General Plan of 2005-2030.* Amended November 11, 2009.

CHAPTER 2.0
Alternatives

2.1 Introduction

Consistent with the Council on Environmental Quality (CEQ) Regulations for Implementing the National Environmental Policy Act (NEPA) at Title 40 of the Code of Federal Regulations (CFR) § 1502.14, this section includes a detailed discussion and comparison of the alternatives analyzed in this Draft Environmental Impact Statement (Draft EIS).

The four alternatives evaluated at an equal level of detail in this Draft EIS include:

- Alternative A – Applicant's Preferred Alternative
- Alternative B – Reduced Impact Alternative
- Alternative C – Approved Specific Plan with 25% Density Bonus
- Alternative D – No Permit (No Action) Alternative

The above alternatives were developed by the U.S. Army Corps of Engineers (USACE), Sacramento District in conjunction with the Applicant and review of the scoping comments received on the Notice of Intent. The alternatives were determined to meet the overall project purpose and need.

This chapter also includes a summary of other alternatives considered but determined impractical. Those alternatives include both on-site and off-site alternatives.

2.2 NEPA Requirements for Alternatives

The CEQ Regulations for Implementing NEPA (40 CFR § 1502.14) require that an EIS:

- Rigorously explore and objectively evaluate all reasonable alternatives, and for alternatives which were eliminated from detailed study, briefly discuss the reasons for their having been eliminated.
- Devote substantial treatment to each alternative considered in detail including the "proposed action" so that reviewers may evaluate their comparative merits.
- Include reasonable alternatives not within the jurisdiction of the lead agency.
- Include the alternative of "no action".
- Include appropriate mitigation measures not already included in the "proposed action" or alternatives.

The alternatives evaluated in this document (Alternatives A through D) represent a reasonable range of alternatives. Alternatives which were eliminated from detailed study are discussed in **Section 2.7**.

2.3 Alternative A – Applicant's Preferred Alternative

Alternative A, the Applicant's Preferred Alternative, includes the development of a large-scale, mixed-use development within the Elverta Specific Plan project site described in **Section 1.2**. Alternative A requires Section 404 permits from USACE. Additional entitlements required are listed in **Section 1.6.2**.

2.3.1 Proposed Land Uses

Alternative A proposes urban and agricultural residential uses at various densities; commercial uses; parks and open space; as well as areas allocated for drainage/riparian corridors, detention, and major roads. Proposed development for the participating parcels (Project-Level conditions) is summarized in **Table 2-1** and shown in **Figure 2-1a**. Proposed development upon full buildout of the Specific Plan (Program-Level/Cumulative conditions) under Alternative A is summarized in **Table 2-2** and shown in **Figure 2-1b.**

Residential

Participating Parcels (Project-Level)

Alternative A includes 2,454 residential units on approximately 423 acres, ranging in gross density from a high of 20 units per acre to a low of one unit per acre in the agricultural residential component of the plan. This range of residential densities would allow this alternative to provide for a variety of housing types at various price points. Likely home types would include conventional single family detached homes on large and small lots, duplexes, town homes, row houses and apartments.

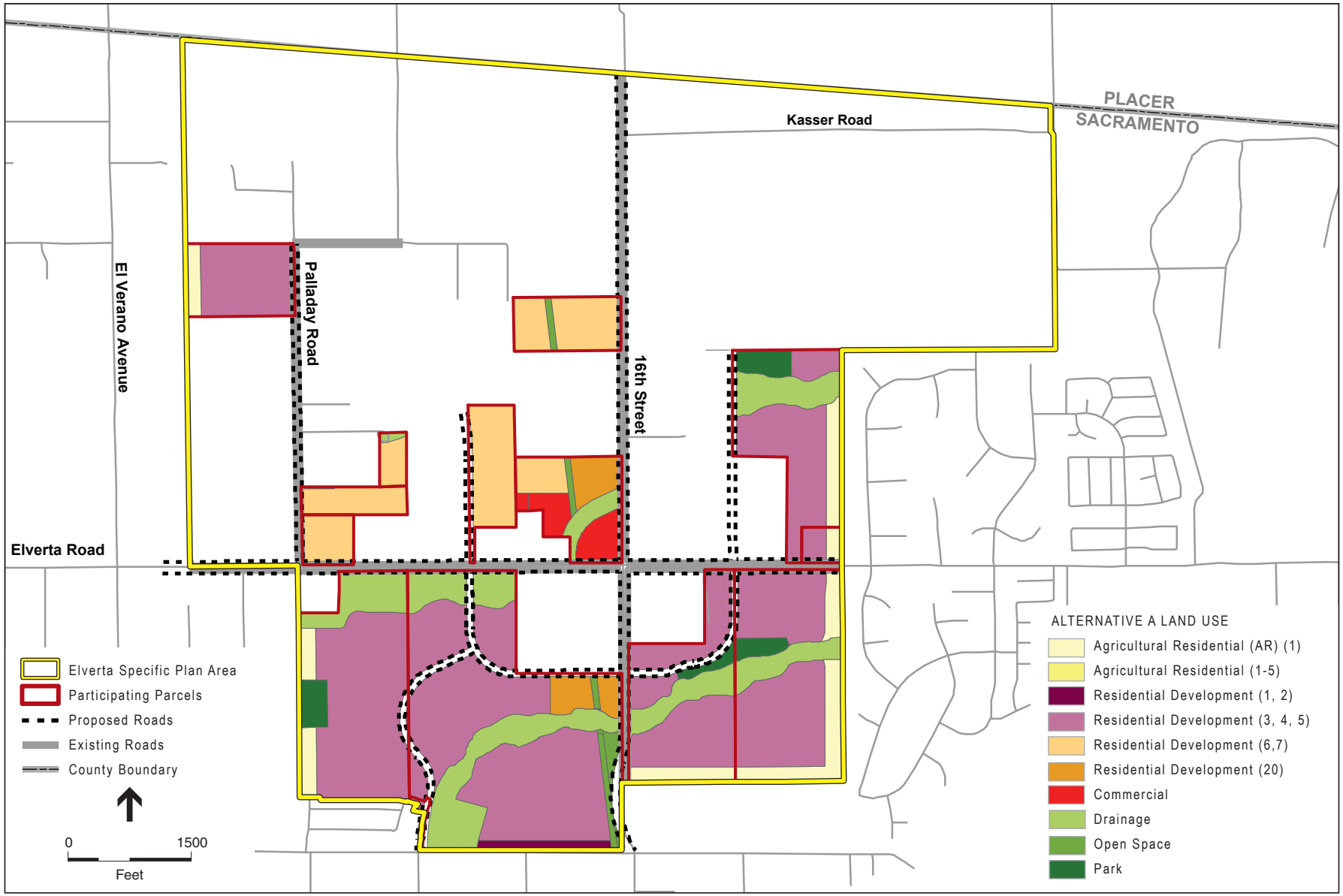
Elverta Specific Plan Full Buildout (Cumulative / Program-Level)

Upon full buildout of the Elverta Specific Plan, Alternative A would include up to 6,190 residential units on 1,340.2 acres, with the same density ranges as those for the participating parcels.

Commercial / Office

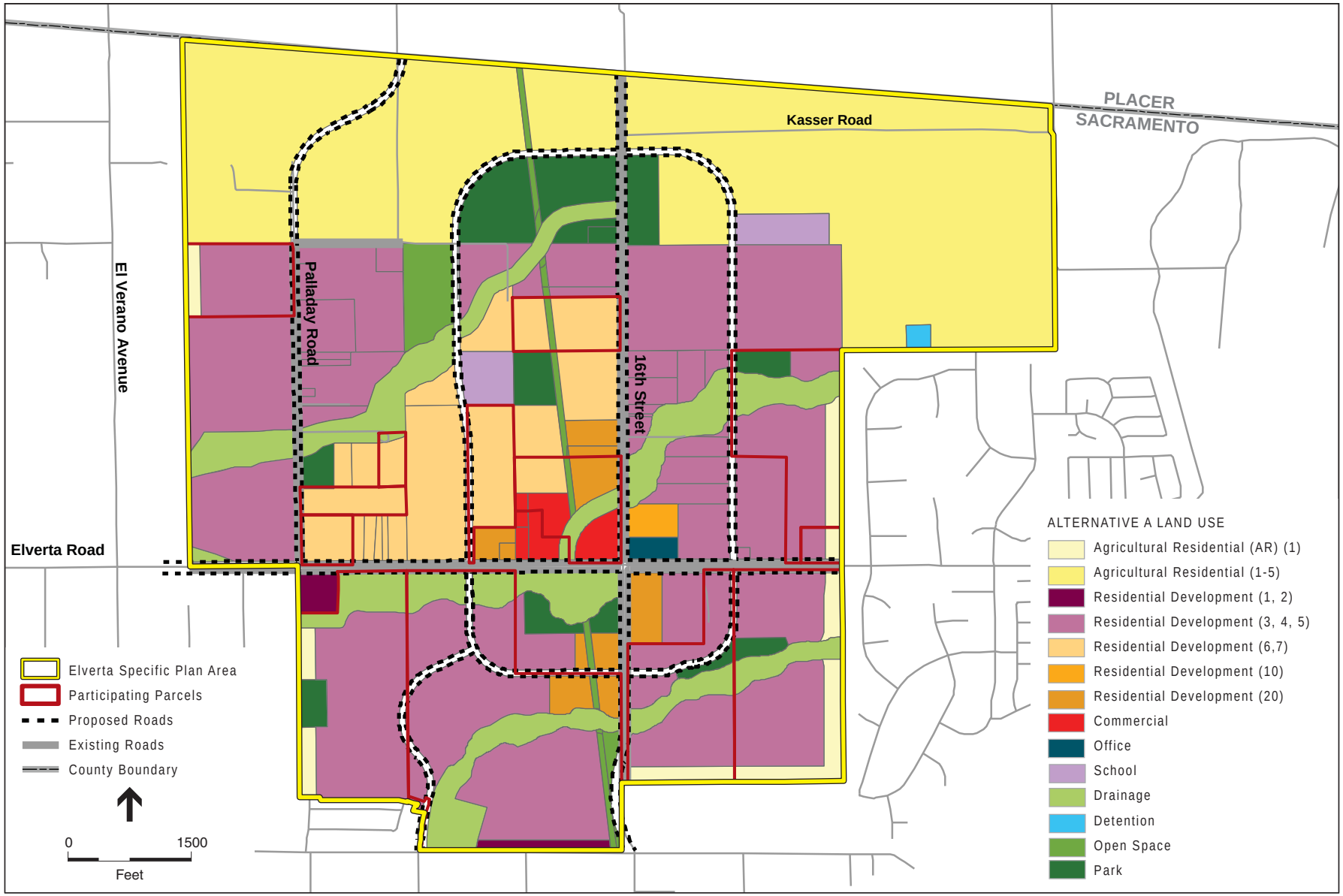
Participating Parcels (Project-Level)

Alternative A includes a community center on the northwest corner of the intersection of Elverta Road and 16th Street. Planned facilities include space for indoor recreation, meeting rooms, administration, an outdoor play area and an outdoor amphitheater. Adjacent planned commercial land uses (11.2 acres) are intended to complement the community center. In addition to providing a platform for retail sales and professional services, the complex would serve as an urban open space amenity with outdoor plazas and gathering areas, mini-parks, and links to community trails. No office land uses are included on participating parcels.



SOURCE: NAIP, 2009; ESRI, 2009; RCH Group, 2010; and ESA, 2012

Figure 2-1a
Alternative A – Applicant's Preferred Alternative
Participating Parcels



SOURCE: NAIP, 2009; ESRI, 2009; RCH Group, 2010; and ESA, 2012

Elverta Specific Plan EIS . 207431

Figure 2-1b
Alternative A – Applicant's Preferred Alternative
Full Plan Buildout

TABLE 2-1
ELVERTA PARTICIPATING PARCELS - LAND USE

	Alternative A Applicant's Preferred		**Alternative B** Reduced Impact		**Alternative C** Approved Specific Plan		**Alternative D** No Permit	
Land Use Types	**Area (acres)**	**Units**	**Area (acres)**	**Units**	**Area (acres)**	**Units**	**Area (acres)**	**Units**
AR 1	41.9	53	19.9	25	49.5	63	431.5	345
AR 1-5	--	--	3.8	4	--	--	115.8	185
RD 1,2	5.3	10	5.3	10	6.9	13	--	--
RD 3,4,5	296.8	1,618	216.6	1,271	336.5	1,676	--	--
RD 6,7	64.6	458	50.8	413	67.2	475	--	--
RD 10	--	--	11.7	143	--	--	--	--
RD 20	14.0	315	18.9	440	10.2	229	--	--
RD 30	--	--	4.4	147	--	--	--	--
TOTAL RESIDENTIAL	**422.6**	**2,454**	**331.4**	**2,454**	**470.3**	**2,456**	**547.3**	**530**
Commercial	11.2	--	--	--	13.8	--	--	--
Office	--	--	3.9	--	--	--	--	--
School	--	--	--	--	--	--	--	--
Park	14.2	--	15.5	--	10.8	--	--	--
Drainage/Riparian Corridor/Trails/Power Line Corridor/Joint Use	82.8	--	137.0	--	34.8	--	--	--
Detention	--	--	--	--	8.0	--	--	--
Open Space	7.9	--	6.3	--	1.1	--	--	--
Major Roads/Other	25.2	--	25.2	--	24.8	--	16.3	--
Wetlands/Habitat Avoidance Area	--	--	44.5	--	--	--	--	--
Total Land Uses	**563.6**	**2,454**	**563.8**	**2,454**	**563.6**	**2,457**	**563.6**	**530**

NOTE: Based upon the implementation of an Energy Efficiency Model, a 25% residential density bonus is permitted therefore a maximum of 6,190 residential units is assumed for the entire plan area, which is 25% greater than the 4,950 units identified in the approved Elverta Specific Plan (see Table 2-2)

SOURCE: RCH Group 2010, 2011.

TABLE 2-2
ELVERTA SPECIFIC PLAN FULL BUILDOUT - LAND USE

	Alternative A Applicant's Preferred		**Alternative B** Reduced Impact		**Alternative C** Approved Specific Plan		**Alternative D** No Permit	
Land Use Types	**Area (acres)**	**Units**	**Area (acres)**	**Units**	**Area (acres)**	**Units**	**Area (acres)**	**Units**
AR 1	41.6	53	19.9	25	49.5	63	706.5	544
AR 1-5	499.3	563	411.1	463	502.3	563	707.2	283
RD 1,2	4.3	13	5.3	10	6.9	13	--	--
RD 2	5.5	9	5.5	14	3.2	9	--	--
RD 3,4,5	602.2	3,471	374.7	2,067	662.7	3,461	--	--
RD 6,7	143.9	1,138	146.3	1,189	161.7	1,138	--	--
RD 10	5.7	70	36.8	451	7.0	70	--	--
RD 20	37.7	873	37.3	869	38.8	873	--	--
RD 30	--	--	33.0	1,101	--	--	--	--
TOTAL RESIDENTIAL	**1340.2**	**6,190**	**1,069.9**	**6,189**	**1,432.1**	**6,190**	**1,413.7**	**827**
Commercial	17.1	--	14.6	--	15.0	--	--	--
Office	3.7	--	3.9	--	4.4	--	--	--
School	19.5	--	9.9	--	20.2	--	--	--
Park	72.0	--	79.1	--	73.3	--	--	--
Drainage/Riparian Corridor/Trails/Power Line Corridor/Joint Use	166.9	--	317.2	--	98.9	--	--	--
Detention	2.1	--	2.1	--	8.0	--	--	--
Open Space	31.1	--	25.3	--	18.4	--	--	--
Major Roads/Other	78.9	--	78.9	--	74.3	--	330.9	--
Wetlands/Habitat Avoidance Area	--	--	143.7	--	--	--	--	--
Total Elverta Specific Plan Land Uses	**1,744.6**	**6,190**	**1,744.6**	**6,189**	**1,744.6**	**6,190**	**1744.6**	**827**

NOTE: Based upon the implementation of an Energy Efficiency Model, a 25% residential density bonus is permitted therefore a maximum of 6,190 residential units is assumed for the entire plan area, which is 25% greater than the 4,950 units identified in the approved Elverta Specific Plan (see Table 2-2)

SOURCE: RCH Group 2010, 2011.

Elverta Specific Plan Full Buildout (Cumulative / Program-Level)

Upon full buildout of the Elverta Specific Plan, Alternative A would include up to 17.1 acres of commercial land uses and 3.7 acres of office land uses.

Schools

Participating Parcels (Project-Level)

Alternative A does not include any schools within the participating parcels.

Elverta Specific Plan Full Buildout (Cumulative / Program-Level)

Upon full buildout of the Elverta Specific Plan, Alternative A would include two neighborhood elementary schools (each on an approximately 10-acre site) to serve students associated with both the Elverta and Center School Districts. School sites are located along the Loop Road in the center and northeast areas of the project site. Neighborhood trails tie each site into an overall system to allow for non-vehicular access from individual neighborhoods.

Parks

Participating Parcels (Project-Level)

Alternative A includes 14.2 acres of parks divided between three park sites, within the participating parcels.

Elverta Specific Plan Full Buildout (Cumulative / Program-Level)

Upon full buildout of the Elverta Specific Plan, Alternative A would include 72.0 acres of parks, including an approximately 14-acre Community Center/Central Park and a 39-acre Sports Park.

Drainage/Riparian Corridor

The hydrologic connectivity in the Elverta Specific Plan area has been substantially altered by past land uses, including agricultural practices and urbanization. In 1937, the area was primarily dryland with scattered pastureland, farmsteads, and orchards. The Elverta Specific Plan area developed over time with more rice, irrigated, and pastureland land uses. In 2006, however, the area was primarily pastureland with more farmsteads and minimal dryland (Hodgson, 2009). Under Alternative A, drainage corridors would be modified, stabilized, rehabilitated, and re-contoured and would incorporate hydromodification measures, such as flow duration control basins and low impact design (source control) features. These drainage corridors are intended to provide additional stability and resiliency for the channel system as well as improved water quality, habitat, recreational, and aesthetic function. The drainage system is described more fully below, in **Section 2.3.4**, Grading and Drainage.

Participating Parcels (Project-Level)

Alternative A includes 82.8 acres of Drainage/Riparian Corridor within the participating parcels.

Elverta Specific Plan Full Buildout (Cumulative / Program-Level)

Upon full buildout of the Elverta Specific Plan, Alternative A would include 166.9 acres of Drainage/Riparian Corridor.

Detention

Participating Parcels (Project-Level)

Alternative A does not include any land specifically allocated for detention within the participating parcels, although some detention would occur within planned Drainage/Riparian Corridors as described previously.

Elverta Specific Plan Full Buildout (Cumulative / Program-Level)

Upon full buildout of the Elverta Specific Plan, Alternative A would include 2.1 acres of detention.

Open Space

Participating Parcels (Project-Level)

Alternative A includes 7.9 acres of open space within the participating parcels, primarily adjacent to the power line easement that bisects the project site in a north-south direction.

Elverta Specific Plan Full Buildout (Cumulative / Program-Level)

Upon full buildout of the Elverta Specific Plan, Alternative A would include 31.1 acres of open space. These open space lands include a large open space area to the west of Loop Road and a network of on- and off-street trails planned for pedestrians, bicycles and equestrian use. Primary trails follow the loop road, Elverta Road, 16th Street, the multi-purpose drainage corridors and the power line easement. Secondary trails occur between neighborhoods.

2.3.2 Energy Efficiency

The Sacramento County Housing Element 2008-2013 (adopted December 2008, policy retained from previous Housing Elements) allows for a 25% density increase for residential development projects that meet the following two conditions: 1) Result in energy savings beyond those obtained with conventional design and construction techniques, and, 2) The amount of increased density is proportional to the amount of increased energy efficiency achieved that exceeds adopted regulations (see Chapter 3, Sub-Strategy VII-A, Policy HE-59c of the Housing Element [page 3-91]).

An Energy Efficiency Model has been designed to promote a 25% reduction in total energy use beyond that required by Title 24. This section includes a series of design guidelines that developers can choose to employ – implementation of the model is voluntary, not mandatory – to allow a 25% residential density bonus. The following key components are listed:

- Constructing homes with north- and south-facing windows.

- Reducing local street sections to as low as 28 feet, curb-to-curb, with parking on both sides (to allow 100% shading of the street by trees).
- Extensive use of street trees, of a species that would result in 70 – 100% shading within a 15 – 20 year time-frame.
- Placing shade trees next to homes so that the window areas of the west, east and south sides are shaded.
- The use of street lights only at key decision-making points, such as intersections.

Implementation of these energy efficiency components would result in a 25% reduction in total energy use and therefore the maximum of 6,190 residential units (25% greater than 4,950 units identified in the locally approved Specific Plan) is proposed for Alternative A.

2.3.3 Construction Phasing

Full buildout of the Elverta Specific Plan is expected to occur over a twenty (20) year period. It is estimated based on the number of residential units that the participating parcels as the first phase would be developed by 2022. Proposed infrastructure would be built first, followed by construction on the participating parcels. It is assumed that non-participating parcels would be developed but would need to go through a separate 404 permitting process. The proposed construction schedule for full buildout is shown in **Table 2-3**.

TABLE 2-3
PROPOSED CONSTRUCTION PHASING

Phase Year	Calendar Year	Construction Activities	Residential Dwelling Units (#)	Commercial/Office Development (acres)
Year 1	2013 (mid-year start)	Initial Infrastructure Construction	n/a	n/a
Year 2	2014	Begin Subdivision Improvements; Develop residential land uses	50	0
Year 3	2015	Develop residential land uses	200	0
Year 4	2016	Develop residential land uses	300	0
Year 5	2017	Develop residential land uses	300	0
Year 6	2018	Develop residential land uses	300	0
Year 7	2019	Develop residential land uses; Develop commercial/office land uses	400	10.1
Year 8	2020	Develop residential land uses	400	0
Year 9	2021	Develop residential land uses	500	0
Year 10	2022	Develop residential land uses	500	0
Year 11	2023	Develop residential land uses; Develop commercial/office land uses	500	7.0
Year 12	2024	Develop residential land uses	500	0
Year 13	2025	Develop residential land uses	400	0
Year 14	2026	Develop residential land uses	400	0
Year 15	2027	Develop residential land uses; Develop commercial/office land uses	300	3.7
Year 16	2028	Develop residential land uses	300	0

TABLE 2-3 (Continued)
PROPOSED CONSTRUCTION PHASING

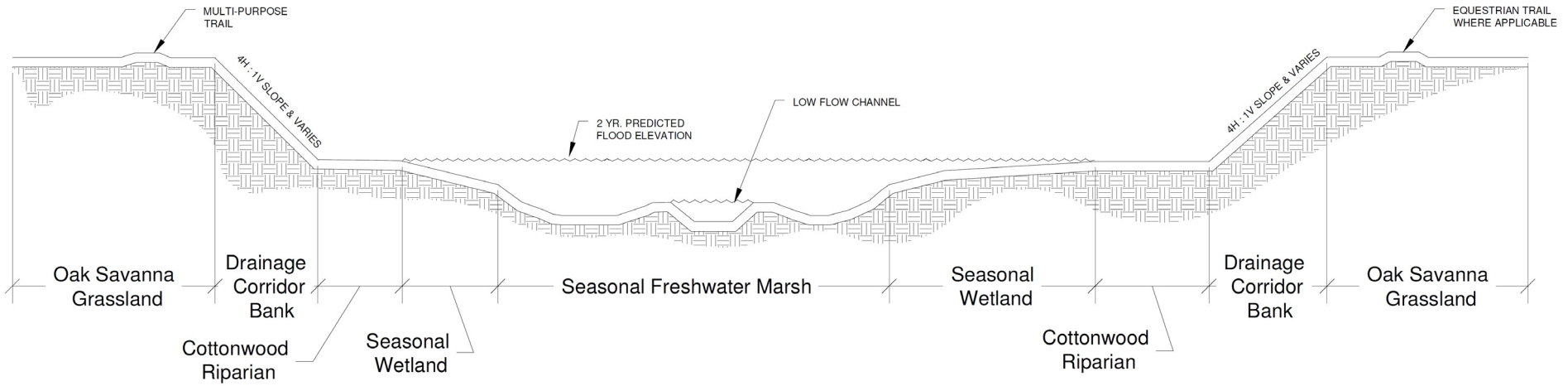
Phase Year	Calendar Year	Construction Activities	Residential Dwelling Units (#)	Commercial/Office Development (acres)
Year 17	2029	Develop residential land uses	250	0
Year 18	2030	Develop residential land uses	250	0
Year 19	2031	Develop residential land uses	200	0
Year 20	2032	Develop residential land uses	140	0
		TOTAL	**~6,190**	**20.8**

2.3.4 Grading and Drainage

Grading plans would be developed for this alternative and submitted to the Sacramento County Municipal Services Agency for review prior to construction. This alternative proposes to fill approximately 27.57 acres of waters of the U.S.

The Draft Revision of the Storm Drainage Master Plan for the Elverta Specific Plan (Elverta DMP; **Appendix A**) provides a detailed hydrologic and hydraulic analysis that identifies Alternative A's potential impacts on the Natomas East Stream Group watershed, and proposes modifications to the existing stream corridor in order to support proposed development as well as drainage conveyance, flood conveyance, habitat, and recreational beneficial uses. The Elverta DMP also provides for the implementation of stormwater and drainage control Best Management Practices (BMPs) as well as Low Impact Design (LID) features that would minimize downstream effects of the development, as related to drainage and flooding. Based on this design, the planned features would avoid the traditional approach of trapezoidal concrete/cement lined channels for waterways on site that were described in the Specific Plan, and would maintain historic flow directions and existing points of release from the project site. Drainage and flood control facilities would be designed to handle stormwater runoff such that no net increase in stormwater runoff would occur from the project area, based on hypothetical 2-year, 10-year, and 100-year design storm events. Flood flows emanating from the project area would be no greater than existing conditions, and in some locations would be reduced in comparison to existing conditions.

Figure 2-1b shows the location of the proposed drainage corridors that would be developed under Alternative A. **Figure 2-2** provides a conceptual diagram of the proposed drainage corridors. As shown, the proposed corridors would include restoration, creation and/or enhancement of habitats, including seasonal freshwater marsh, seasonal wetland, cottonwood riparian, and oak savanna/grassland. Flood flows would be contained within the proposed drainage corridor banks, which would protect the proposed development from flooding. Corridor widths would vary based on design flows and hydrology, in order to contain anticipated flows. Multipurpose trails and/or equestrian trails would be maintained along the drainage corridor, in support of recreation activities. The conceptual drainage corridor as shown in Figure 2-2 includes setbacks that would likely differ from those functional, transitional and extended setbacks identified in General Plan



SOURCE: MacKay and Somps, 2011

Elverta Specific Plan. 207431

Figure 2-2
Proposed Channel Cross Section

Policy CO-115; however, this approach is considered consistent with the General Plan since alternative standards can be considered during the preparation of a finalized master drainage plan.

The proposed corridors would provide the following specific benefits:

- Inset floodplain terraces would improve floodplain-to-channel connectivity and would:
    - Inundate floodplain habitat with topographic diversity to encourage habitat heterogeneity;
    - Reduce flood-flow scouring velocities, increase flood flow conveyance, and improve water quality through bio-filtration of inundating flows; and
    - Accommodate recreational trails.
- Drainage corridors planted with native vegetation would provide canopy cover for aquatic species and reduce infestation of non-native submerged aquatic vegetation.
- Multi-objective drainage corridors would be designed to respond to the modified regional hydrology. Ephemeral swales would become intermittent and eventually perennial after project buildout. Summer "nuisance" and irrigation flows would increase and vegetation along the drainages should be resilient to this revised hydrology and provide some filtering of nutrient-concentrated flows. In-line ponds or pools would provide additional flow attenuation, water quality improvement, and aquatic habitat.
- Drainage channels would be re-contoured and re-graded to stable channel design parameters, established through hydrodynamic and sediment transport modeling design. Hydraulic grade control features would provide an appropriate, stable channel slope.
- Upon full buildout, up to 88 acres of existing wetlands, swales, channels, stock ponds, and vernal pools in the Elverta Specific Plan area would be replaced with enhanced or new wetland habitats with ecologically diverse vegetative assemblages in a mosaic of habitats with a goal of having greater ecological, hydrologic, and geochemical functions and values. These include seasonal wetlands, freshwater emergent marsh, riparian woodland, riparian willow scrub, and open water; proposed upland habitats include Central Valley prairie and valley oak woodland/savanna.

The development of the drainage corridor would result in the loss of vernal pools which would not be recreated in the new drainage. Most of the vernal pools that would be impacted in the drainage corridor do not provide suitable habitat for vernal pool special-status species, with the exception of two vernal pool features (see **Figures 4.4-1** and **4.5-1** for reference).

The proposed corridor alignments would be located along existing waterways, and would result in an overall net decrease in 2-year, 10-year, and 100-year stormwater flows emanating from the project site to downstream areas. For additional discussion of proposed design features and modeled flow conditions, as well as LID features and BMPs, please refer to **Section 4.10,** Hydrology and Water Quality.

2.3.5 Circulation

Traffic Improvements

Planned circulation elements associated with the project site consist of vehicular roadways, on- and off-street trails and transit facilities. Planned circulation is described fully in the *Final Elverta Specific Plan* (County of Sacramento, 2007).

Existing access to and from the project site is provided by a system of two-lane roadways laid out in a typical east-west and north-south grid. Elverta Road is the primary east-west movement corridor, whereas Dry Creek Road, 16th Street, and Palladay Road provide for north-south movement. North-south movement is somewhat constrained by the limited number of roadway crossings over Dry Creek.

Planned roadway improvements associated with the implementation of full buildout of the Elverta Specific Plan include both on-and off-site facilities. On-site facilities are those meant to provide service to and from neighborhoods. Offsite facilities include roadways designed to improve traffic flow in northern Sacramento County.

On-Site Roadways

Proposed on-site improvements include the full width of planned arterials as well as those associated with high-and standard-capacity two-lane roadways. Elverta Road would be the only four-lane arterial within the project site. High and standard capacity two-lane roadways would include Loop Road, Dry Creek Road, and Palladay Road. These roadways would provide local service between neighborhoods. All roadways within the Elverta Specific Plan would be developed using vertical curbs (where curbs are used) and detached sidewalks with planter strips between the curb and sidewalk (County of Sacramento, 2007).

Circulation Improvements

In addition to on-site roadways, the following off-site roadway improvements are planned. Costs for identified improvements to both County roadways and freeway facilities would be on a fair share basis as determined by the Sacramento County Department of Transportation, in conjunction with funding sources in place at the time improvements are implemented (County of Sacramento, 2007).

- Elverta Road (from the East Levee Road to west boundary of the Specific Plan, and from the east boundary of the Specific Plan to Watt Avenue);
- Elkhorn Boulevard (State Route 99 to East Levee Road);
- Watt Avenue (from Elverta Road to Don Julio Boulevard); and
- Dry Creek Road (from U Street to O Street).

Each of these off-site roadway improvements are divided into various segments based on the following factors:

- Required improvements (e.g., cross section of roadway);
- Roadway phasing; and,
- Identified financing sources.

Based upon the analysis of future traffic volumes at full buildout of the Elverta Specific Plan, traffic signals would be required at the following off-site intersections:

- Westbound approach to the Elverta Road / SR 99;
- SR 99 / Elkhorn Boulevard interchange or a traffic signal at the SR 99 / Elkhorn Boulevard interchange;
- East Levee Road and Elverta Road;
- Sorento Road and Elverta Road;
- Elwyn Avenue and Elverta Road;
- Rio Linda Boulevard and Elverta Road;
- Elverta Road / 9th Street;
- Palladay Road and Elverta Road;
- Q Street / Dry Creek Road;
- 16th Street and Elverta Road;
- Rivergreen Drive and Elverta Road;
- Bellingrath Drive and Elverta Road; and
- Elverta Road / 28th Street.

In addition, existing plus project traffic impact projections identify the need to participate in the widening of both north and southbound SR 99 between Interstate 5 and Elkhorn Boulevard.

Transit

Public transit services are currently provided to the Rio Linda-Elverta community by the Sacramento Regional Transit District (RT), which operates one bus line (No. 19) that runs along Elverta Road between Watt Avenue and Rio Linda Boulevard on a circuitous route connecting to the Watt/I-80 and Arden/Del Paso Light rail stations. RT is responsible for providing transit services to new development in the Elverta Specific Plan, which would be required to contribute towards the provision of transit facilities for its residents. RT has not identified the transit facilities that would be required for it to serve development in the Elverta Specific Plan. Facilities that are identified and built would be managed by RT. Phasing of transit facilities would be coordinated with the phasing of development as required to provide transit services to residents of the Elverta Specific Plan (County of Sacramento, 2007).

Land use patterns associated with the Specific Plan encourage the use of public transit by locating those needs and services in close proximity to existing routes and likely users. The Town Center's location at the intersection of Elverta Road and 16th Street provides transit users an opportunity for shopping, recreation, and access to trails and open space corridors within the site. Park and ride opportunities are provided for in the parking area associated with the Community Center.

Pedestrian and Bicycle Network

The Elverta Specific Plan includes an extensive system of on-and off-street trails and other pathways. On-street trails for the most part are associated with sidewalks that vary in width between four and six feet with the exception of an eight-foot multi-use trail that follows the inside of the Loop Road. All sidewalks are separated from travel lanes by a vertical curb and planter strip that varies in width from six to eight feet. Overall parkway widths vary between 10 and 35 feet. Sidewalks associated with commercial, office and civic uses within the Town Center would have a minimum width of six feet and designed as an integral element of each respective use (County of Sacramento, 2007).

Planned bike activity along streets involves both Class II (striped) and Class III (designated routes) bikeways. Class II routes follow Elverta Road, 16th Street, the Loop Road and Palladay Road. Class III routes involve all other community wide designated urban local streets. Off-street trails are associated with the multi-purpose open space corridors and the 75 feet wide power line easement. Overall, there are more than seven miles of off-street trails planned for the community. Multi-purpose open space miles of off-street trails planned for the community. Multi-purpose open space corridors vary in width from 120 to 200 feet and include provisions for pedestrian, equestrian and bicycle use (County of Sacramento, 2007).

2.3.6 Public Services and Utilities

Water

Alternative A would require that homes be connected to a public water service system. The project site is currently within the jurisdiction of both the Rio Linda/Elverta Community Water District (RL/ECWD) and the California American Water Company (Cal-Am). The RL/ECWD holds rights to the majority of the project site. The area currently serviced by the RL/ECWD involves 11 public wells pumping groundwater for treatment and distribution to district users. Roughly half of the area within the RL/ECWD is not on a public water distribution system, with residents serviced by individual private wells. Existing wells pump directly into the district's distribution system, which is interconnected, so that in high demand, each well services the local area and in low demand conditions, wells could service a larger area (County of Sacramento, 2007).

Water supply facilities for meeting buildout water demands associated with the project are designed to take into consideration key factors and assumptions, including conditions placed on surface water supplies that limit its availability in dry years, capacity constraints in certain facilities that limit seasonal availability of surface water, phasing of facilities required to meet

project demands, groundwater quality, and groundwater yield. The primary components of the major water distribution facilities planned to service the project site consist of the following:

- Groundwater supply facilities consisting of wells, pipelines, centralized groundwater treatment plant, all capable of meeting maximum daily demands through buildout for the project site;
- A treated surface water supply pipeline that would be an extension of the Northridge Transmission Pipeline (NTP). This pipeline would help meet project buildout water demands, or possibly for direct recharge of groundwater using aquifer storage and recovery equipped wells;
- A potable water distribution system consisting of a distribution system network, water storage tanks, treatment and pump station and interties with the existing RL/ECWD distribution system; and
- Recycled water facilities consisting of diversion facilities and pipelines needed to deliver water for in-lieu recharge and direct recharge (County of Sacramento, 2007).

Wastewater

Residential development within the Elverta Specific Plan area currently utilizes private septic systems for wastewater disposal. County Sanitation District No. 1 (CSD-1) provides the closest public wastewater disposal system, with facilities located at the southwest corner of the project site, near U Street and Dry Creek Road. CSD-1 also provides wastewater disposal service to the Cherry Creek subdivision along the east side of the Specific Plan. Both of these existing systems are inadequate to extend into and serve the magnitude of development proposed by the Elverta Specific Plan (County of Sacramento, 2007).

The Sacramento County General Plan requires that all residential land uses at a density greater than one dwelling unit per two acres be served by a public sanitary sewer system. As such, the implementation of the project would require the annexation of the project site into the sanitation district for services. Both the Sacramento Regional County Sanitation District (SRCSD) and CSD-1 are planning to expand their facilities to accommodate this, as well as other development activities in the northwest part of Sacramento County (County of Sacramento, 2007).

Sanitary sewer service for the northern part of Sacramento County would be provided by a combination of interceptor and trunk facilities extending from North Natomas. This includes the recently completed SRCSD's Northwest Interceptor. Connection from the Northwest Interceptor to the project site is proposed by a system of CSD-1 trunk sewers (County of Sacramento, 2007).

The project site itself is designed to sewer via two internal trunk systems, meeting at the southwest corner of the project site, which would then be connected to the U Street trunk sewer via a permanent lift station. Overall on-site improvements include a lift station, a system of collector/trunk sewer lines and related appurtenances, all of which would be maintained by CSD-1. Installation of onsite sanitary sewer improvements would be determined by the phasing of individual projects through conditions of approval. CSD-1 would be responsible for ensuring that adequate sewer facilities are constructed in order to meet the demands of new development (County of Sacramento, 2007).

Electricity, Natural Gas and Telecommunications

The Sacramento Municipal Utility District (SMUD) provides electric service and Pacific Gas and Electric Company (PG&E) provides natural gas service to the project site and surroundings. Development of the project would increase demands for both electric and natural gas service. PG&E may need to provide additional gas mains, and SMUD would need to provide new 69KV electric lines and distribution substations, in order to provide service for new development. New residential development within the Specific Plan area would incorporate Energy Efficiency/Load Management Measures for new construction recommended by SMUD to reduce energy demands. Future development of property within the project site would be subject to project specific review by SMUD and PG&E to identify the specific energy facilities required to serve the development and the most appropriate siting for such facilities (County of Sacramento, 2007).

The project site is bisected by a high voltage (230 KV) transmission line within a 75-foot wide power line easement that runs north to south through the site. Land uses within the easement are restricted to open space or lower densities uses. Development of open space uses (pedestrian/bicycle and equestrian trail system) within the power line corridor are proposed for the project.

Solid Waste

The Sacramento County Department of Waste Management and Recycling provides weekly garbage collection, biweekly green waste collection and mixed recycling services to the project area. The Department also operates the Kiefer Landfill, located near Kiefer Boulevard and Grant Line Road, which is the primary municipal solid waste disposal facility in Sacramento County.

Fire Protection and Emergency Medical

The Sacramento Metropolitan Fire Protection District provides fire protection and emergency medical response to the project site. The nearest fire station is located on Elverta Road at Cherry Brook, approximately 1.5 miles west of the project site. The station is a temporary station and is not designed to handle the expected population increase upon full buildout of the Elverta Specific Plan (up to 15,000 new residents) (County of Sacramento, 2007).

Law Enforcement Services

The Sacramento County Sheriff's Department provides law enforcement services to the unincorporated areas of Sacramento County, including the project site. Services provided include response to calls, investigations, surveillance, and proactive patrol activities.

2.4 Alternative B – Reduced Impact Alternative

Alternative B, or the Reduced Impact Alternative, would also include the development of a large-scale, mixed-use development within the project site. The geographic locations of planned land uses for Alternative B are similar those of Alternative A. However, Alternative B would avoid developing some areas of the project site to reduce impacts to waters of the U.S. This alternative

proposes to fill approximately 22.98 acres of waters of the U.S. In comparison to Alternative A and C, Alternative B would avoid approximately 4.59 acres or 16 percent of the waters of the U.S within the participating parcels. The project requires Section 404 permits from USACE. Additional entitlements are listed in **Section 1.6.2**.

2.4.1 Proposed Land Uses

As with Alternative A, Alternative B includes urban and agricultural residential (various densities); commercial uses; parks and open space; as well as areas allocated for drainage/riparian corridors, detention, and major roads. Alternative B includes avoided areas which would not be developed. Proposed development for the participating parcels (Project-Level conditions) is summarized in **Table 2-1** and shown in **Figure 2-3a**. Proposed development upon full buildout of the Specific Plan (Program-Level/Cumulative Conditions) is summarized in **Table 2-2** and shown in **Figure 2-3b**. Other aspects of this alternative, including the proposed Drainage/Riparian Corridors, roadway infrastructure, and other utilities, would be the same as described for Alternative A.

Residential

Participating Parcels (Project-Level)

Alternative B includes 2,454 residential units on approximately 331 acres, ranging in gross density from a high of 30 units per acre to a low of one unit per acre in the agricultural residential component.

Elverta Specific Plan Full Buildout (Cumulative / Program-Level)

Upon full buildout of the Elverta Specific Plan, Alternative B would include up to 6,189 residential units on 1,069.9 acres, with the same density ranges as those for the participating parcels.

Commercial / Office

Participating Parcels (Project-Level)

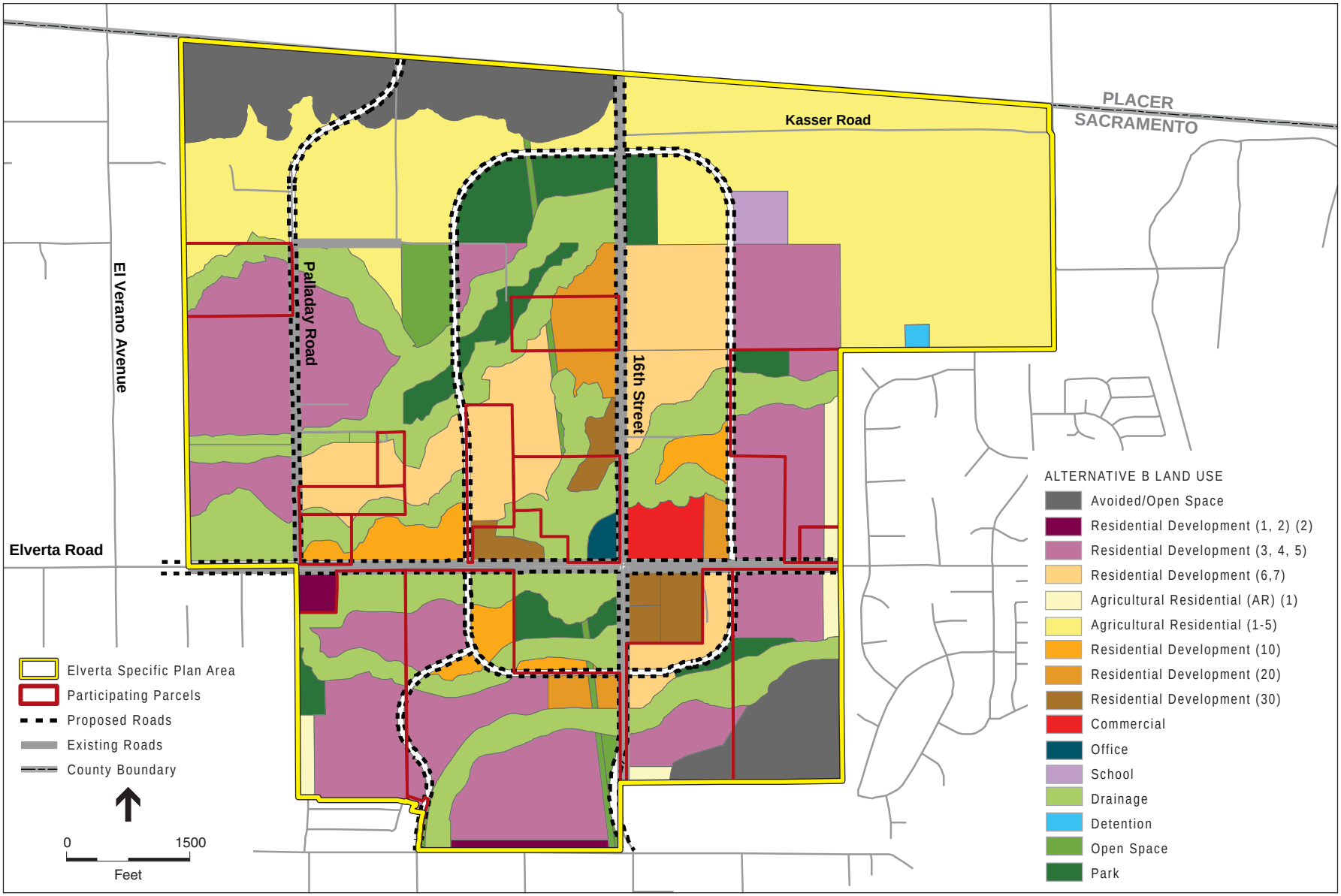
Alternative B includes 3.9 acres of office land use and no other commercial land use within the participating parcels.

SOURCE: NAIP, 2009; ESRI, 2009; RCH Group, 2010; and ESA, 2012

Elverta Specific Plan EIS . 207431

Figure 2-3a

Alternative B – Reduced Impacts Alternative
Participating Parcels



SOURCE: NAIP, 2009; ESRI, 2009; RCH Group, 2010; and ESA, 2012

Figure 2-3b
Alternative B – Reduced Impacts Alternative
Full Plan Buildout

Elverta Specific Plan Full Buildout (Cumulative / Program-Level)

Upon full buildout of the Elverta Specific Plan, Alternative B would include 14.6 acres of commercial land uses and 3.9 acres of office land uses.

Schools

Participating Parcels (Project-Level)

Alternative B does not include any schools within the participating parcels.

Elverta Specific Plan Full Buildout (Cumulative / Program-Level)

Upon full buildout of the Elverta Specific Plan, Alternative B would include one neighborhood elementary school on a 9.9 acres site, to serve students associated with both the Elverta and Center School Districts.

Parks

Participating Parcels (Project-Level)

Alternative B includes 15.5 acres of parks divided between four park sites, within the participating parcels.

Elverta Specific Plan Full Buildout (Cumulative / Program-Level)

Upon full buildout of the Elverta Specific Plan, Alternative B would include 79.1 acres of parks.

Drainage/Riparian Corridor

Participating Parcels (Project-Level)

Alternative B includes 137.0 acres of Drainage/Riparian Corridor within the participating parcels.

Elverta Specific Plan Full Buildout (Cumulative / Program-Level)

Upon full buildout of the Elverta Specific Plan, Alternative B would include 317.2 acres of Drainage/Riparian Corridor.

Detention

Participating Parcels (Project-Level)

Alternative B does not include any land allocated for detention within the participating parcels.

Elverta Specific Plan Full Buildout (Cumulative / Program-Level)

Upon full buildout of the Elverta Specific Plan, Alternative B would include 2.1 acres of detention.

Open Space

Participating Parcels (Project-Level)

Alternative B includes 6.3 acres of open space within the participating parcels, primarily adjacent to the power line easement that bisects the project site in a north-south direction.

Elverta Specific Plan Full Buildout (Cumulative / Program-Level)

Upon full buildout of the Elverta Specific Plan, Alternative B would include 25.3 acres of open space.

2.5 Alternative C – Approved Specific Plan with 25% Density Bonus Alternative

Alternative C, or the Approved Specific Plan with 25% Density Bonus Alternative, would develop the project site with the same land use layout as the Approved Specific Plan analyzed in the previously prepared EIR (DERA, 2007). However, the residential density would be increased by 25% from 4,950 units to 6,190 units. The geographic location of planned land use types are similar to Alternatives A and B. However, the drainage/riparian corridors are substantially different than for those two alternatives, as they would be more trapezoidal in shape and smaller in overall size. Similar to Alternative A, Alternative C proposes to fill approximately 27.57 acres of waters of the U.S. The project requires Section 404 permits from USACE. Additional entitlements are listed in **Section 1.6.2**.

2.5.1 Proposed Land Uses

Development within the participating parcels (project-level) is shown in **Table 2-1**, above. Proposed development upon full buildout of the Specific Plan (Program-Level/Cumulative Conditions) is shown in **Table 2-2**, above. Proposed development for the participating parcels (Project-Level conditions) is summarized in **Table 2-1** and shown in **Figure 2-4a**. Proposed development upon full buildout of the Specific Plan (Program-Level/Cumulative Conditions) is summarized in **Table 2-2** and shown in **Figure 2-4b.**

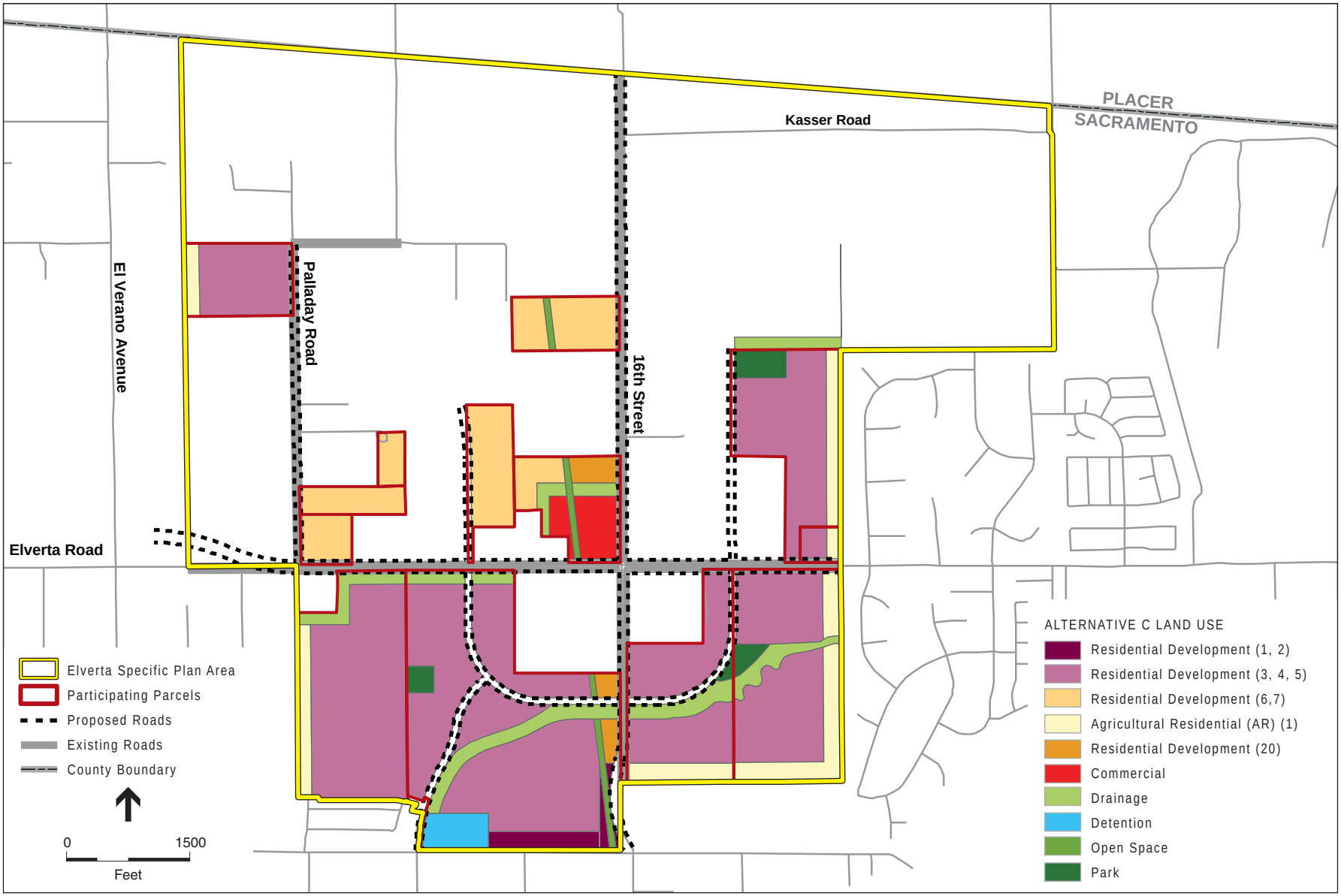
Residential

Participating Parcels (Project-Level)

Alternative C includes 2,456 residential units on approximately 470 acres, ranging in gross density from a high of 20 units per acre to a low of one unit per acre in the agricultural residential component.

Elverta Specific Plan Full Buildout (Cumulative / Program-Level)

Upon full buildout of the Elverta Specific Plan, Alternative C would include up to 6,190 residential units on 1,432.1 acres, with the same density ranges as those for the participating parcels.

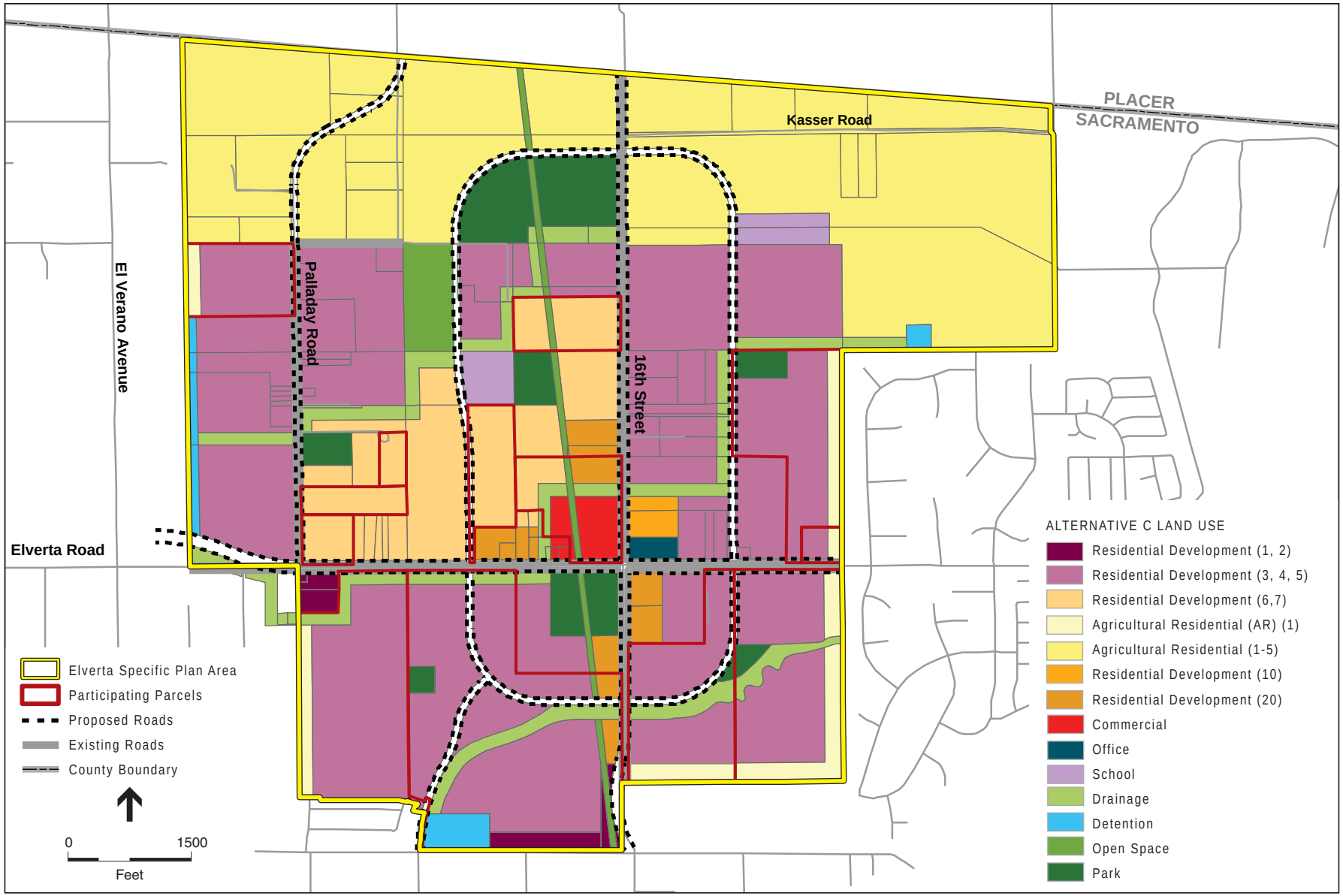


SOURCE: NAIP, 2009; ESRI, 2009; RCH Group, 2010; and ESA, 2012

Elverta Specific Plan EIS . 207431

Figure 2-4a

Alternative C – Approved Specific Plan Alternative Participating Parcels



SOURCE: NAIP, 2009; ESRI, 2009; RCH Group, 2010; and ESA, 2012

Figure 2-4b
Alternative C – Approved Specific Plan Alternative
Full Plan Buildout

Commercial / Office

Participating Parcels (Project-Level)

Alternative C includes 13.8 acres of commercial land use within the participating parcels.

Elverta Specific Plan Full Buildout (Cumulative / Program-Level)

Upon full buildout of the Elverta Specific Plan, Alternative C would include 15.0 acres of commercial land uses and 4.4 acres of office land uses.

Schools

Participating Parcels (Project-Level)

Alternative C does not include any schools within the participating parcels.

Elverta Specific Plan Full Buildout (Cumulative / Program-Level)

Upon full buildout of the Elverta Specific Plan, Alternative C would include two neighborhood elementary schools on a total of 20.2 acres, to serve students associated with both the Elverta and Center School Districts.

Parks

Participating Parcels (Project-Level)

Alternative C includes 10.8 acres of parks divided between three park sites, within the participating parcels.

Elverta Specific Plan Full Buildout (Cumulative / Program-Level)

Upon full buildout of the Elverta Specific Plan, Alternative C would include 73.3 acres of parks.

Drainage/Riparian Corridor

Participating Parcels (Project-Level)

Alternative C includes 34.8 acres of Drainage/Riparian Corridor within the participating parcels. As described previously, these corridors would differ from Alternative A and B in that they would be smaller in size and would have less focus on habitat creation.

Elverta Specific Plan Full Buildout (Cumulative / Program-Level)

Upon full buildout of the Elverta Specific Plan, Alternative C would include 98.9 acres of Drainage/Riparian Corridor.

Detention

Participating Parcels (Project-Level) and Elverta Specific Plan Full Buildout (Cumulative / Program-Level)

Alternative C includes 8.0 acres allocated for detention within the participating parcels which would remain under full build-out.

Open Space

Participating Parcels (Project-Level)

Alternative C includes 1.1 acres of open space within the participating parcels, primarily adjacent to the power line easement that bisects the project site in a north-south direction.

Elverta Specific Plan Full Buildout (Cumulative / Program-Level)

Upon full buildout of the Elverta Specific Plan, Alternative C would include 18.4 acres of open space.

2.6 Alternative D – No Permit Alternative (No Action) Alternative

Alternative D, or the No Permit Alternative, avoids all jurisdictional wetlands and other waters of the U.S., and assumes a 25-foot buffer would be provided around all wetland swales and a 10-foot buffer around all other jurisdictional wetlands. Development under this alternative would not require a USACE Section 404 permit as no jurisdictional features would be filled. In order to avoid the wetland features, approximately 70% of the land developed under Alternatives A, B and C would be removed from development. Therefore, this alternative proposes lower intensity land uses for the project site and only low-density residential development would occur.

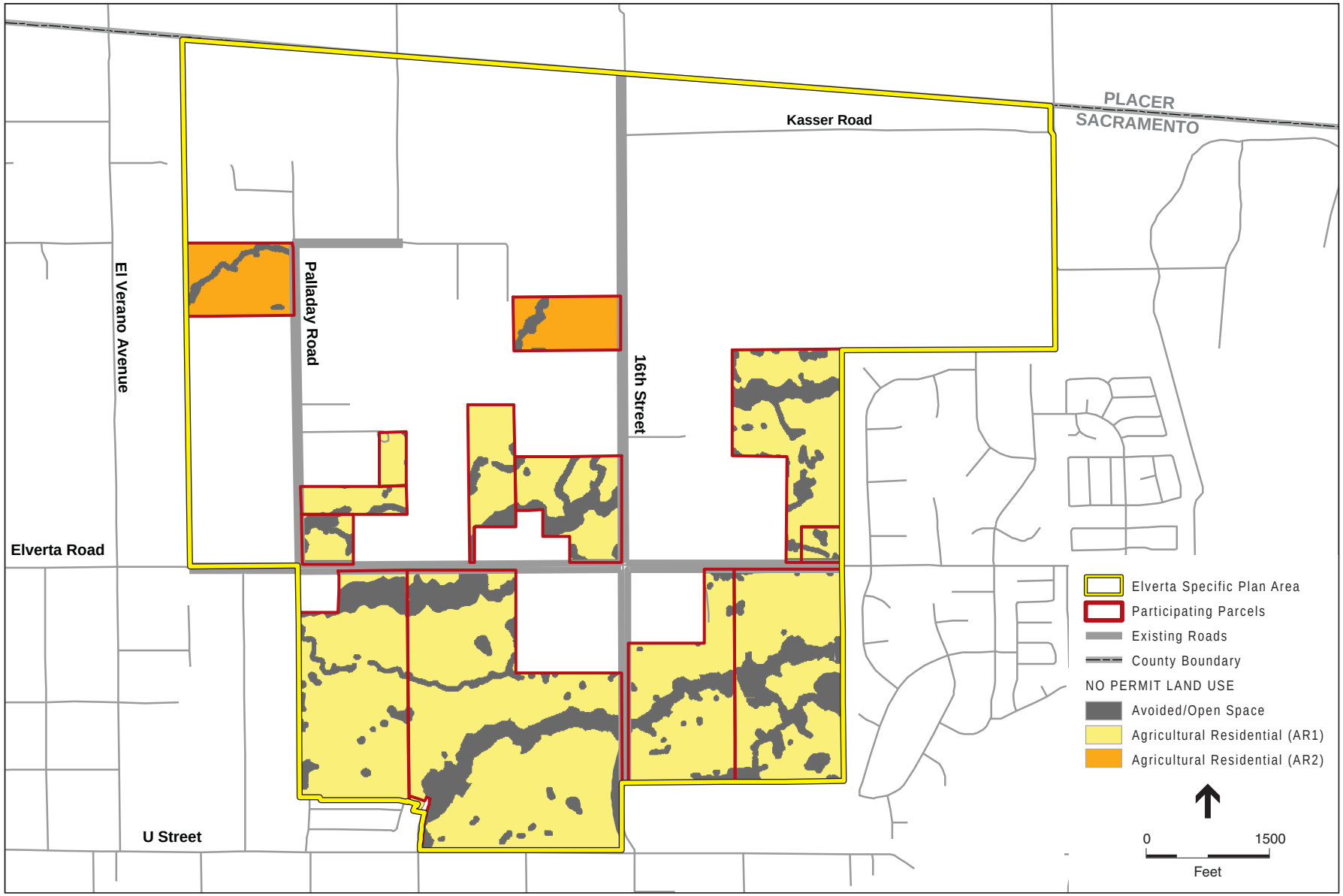
2.6.1 Proposed Land Uses

Development within the participating parcels (project-level) is shown in **Table 2-1**, above. Proposed development upon full buildout of the Specific Plan (Program-Level/Cumulative Conditions) is shown in **Table 2-2**, above. Proposed development for the participating parcels (Project-Level conditions) is summarized in **Table 2-1** and shown in **Figure 2-5a**. Proposed development upon full buildout of the Specific Plan (Program-Level/Cumulative Conditions) is summarized in **Table 2-2** and shown in **Figure 2-5b.**

Residential

Participating Parcels (Project-Level)

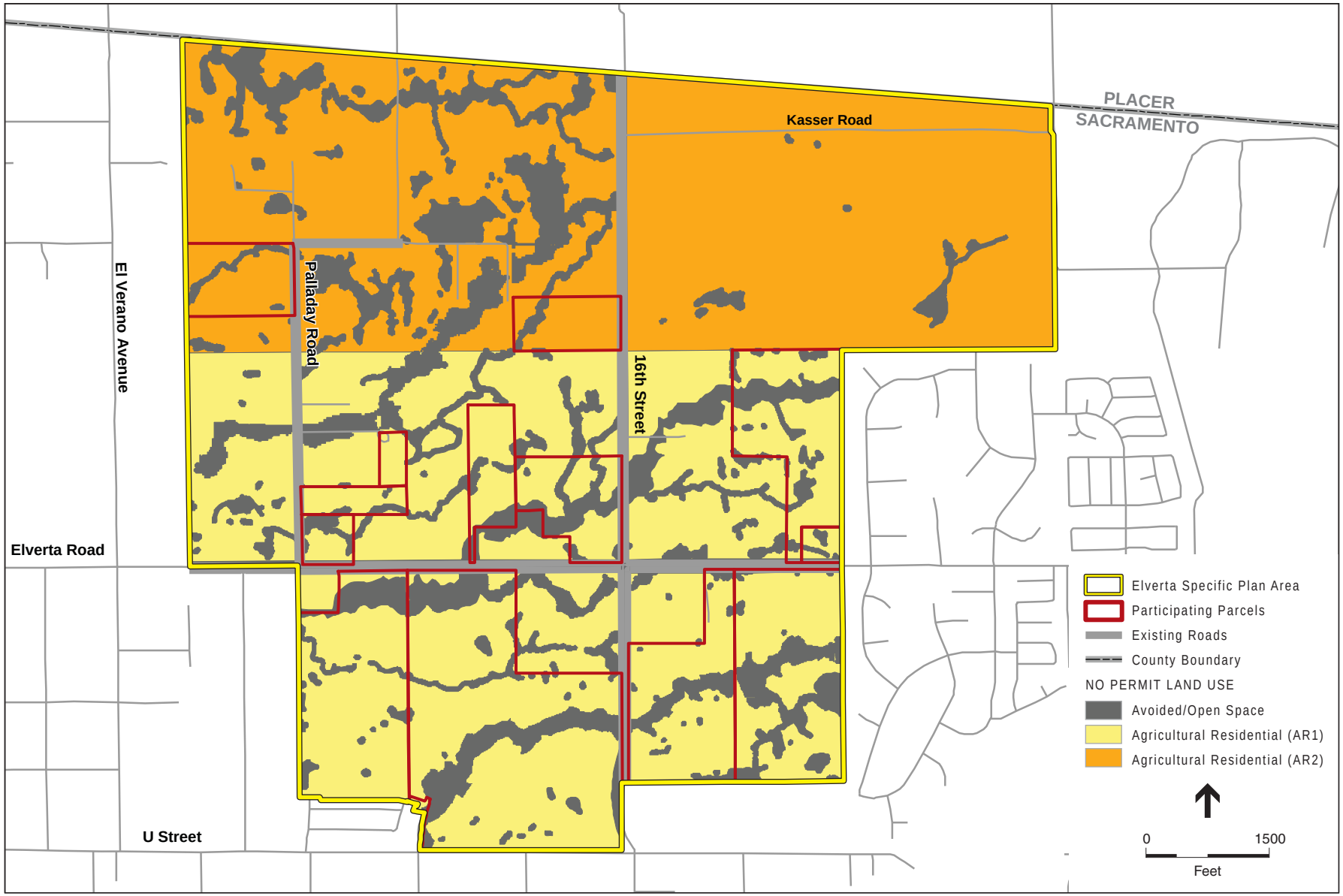
Alternative D includes 530 residential units on 547.3 acres within the participating parcels, with a density of one unit per acre in the southern portion of the project site and a density of two units per acre in the northern portion of the project site.



SOURCE: NAIP, 2009; ESRI, 2009; RCH Group, 2010; and ESA, 2012

Elverta Specific Plan EIS . 207431

Figure 2-5a
Alternative D – No Permit Alternative
Participating Parcels



SOURCE: NAIP, 2009; ESRI, 2009; RCH Group, 2010; and ESA, 2012

Elverta Specific Plan EIS . 207431

Figure 2-5b
Alternative D – No Permit Alternative
Full Plan Buildout

Elverta Specific Plan Full Buildout (Cumulative / Program-Level)

Upon full buildout of the Elverta Specific Plan, Alternative D would include up to 827 residential units on 1,413.7 acres, with the same densities as those for the participating parcels.

2.7 Alternatives Considered but Eliminated from Further Evaluation

Several alternatives were considered which were not fully evaluated within this EIS. These alternatives were considered infeasible based on several factors discussed below. Proposed alternatives considered but eliminated from further consideration included:

On-Site Alternatives

- 2005 Permit Application
- Approved Specific Plan with Original Density

Off-Site Alternatives

- Placer Vineyard
- Sutters Point
- Panhandle
- Natomas Joint Vision Area

2.7.1 On-Site Alternatives

2005 Permit Application

This alternative includes the twenty (20) original individual permit applications submitted to the USACE in 2005. Since 2005, the list of property owners participating in the project has changed. This alternative was eliminated because the configuration of the participating landowners has since changed based on the current permit applications as described in **Chapter 1**. This alternative includes more development during the first phase (as the number of participating parcels was greater) but would have similar land uses and density compared to the Applicant's Preferred Alternative.

Approved Specific Plan with Original Density

The Approved Specific Plan with Original Density Alternative would develop the project site entirely consistently with the adopted Elverta Specific Plan (and related land use entitlements) that was evaluated in the EIR prepared by Sacramento County (DERA, 2007). This alternative includes the same 1,744± acres of land located in north-central Sacramento County (see **Figures 1-1** and **1-2** in Chapter 1.0). The EIR had a larger number of participating parcels and determined that development of these parcels would impact 36.4 acres of wetland habitat including vernal pools, seasonal wetlands, seasonal marsh, wet swales, bermed wetlands, ponds, and channels. The

alternative is primarily residential in character: it includes 880.3 acres of urban residential uses and 551.8 acres of agricultural-residential uses with a total holding capacity of up to 4,950 units; 15.0 acres of commercial uses; 4.4 acres of office/professional uses; 20.2 acres of school uses; 73.3 acres of park uses; 18.4 acres (former landfill site) to be designated as open space; and 191.9 acres to be used for drainageways, detention facilities, trails, powerline corridor and major roads. The geographic organization of land use types (residential, commercial, schools, etc.) for this alternative is similar to that of Alternatives A, B and C. However, this alternative would not include the 25% residential unit density increase, and would include 4,950 units (versus 6,190 units for Alternatives A-C). A summary of land uses for this alternative is provided in **Table 2-4**.

This alternative was eliminated from further analysis due to the recent changes in state climate change legislation. Specifically, Assembly Bill 32 (AB 32) and Senate Bill 375 (SB 375) direct the design of communities with greater energy efficiency. Because development of a specific plan without energy efficiency measures built in would conflict with these goals and would reduce the economic viability of the project, this alternative was dismissed from further consideration. Alternatives A, B and C analyzed in this EIS allow for the 25 percent increase in density and generally support the goals of AB 32 and SB 375 for more energy efficient communities.

TABLE 2-4
APPROVED SPECIFIC PLAN WITH ORIGINAL DENSITY –
LAND USE SUMMARY TABLE

Land Use Designation	Acres	Dwelling Units	Percent of Dwelling Units
AR 1,5	502.3	450	9
AR 1	49.5	50	1
RD 1,2	6.9	10	-
RD 2	3.2	7	-
RD 3,4,5	662.7	2,769	57
RD 6,7	161.7	910	18
RD 10	7.0	56	1
RD 20	38.8	698	14
Commercial	15.0	-	-
Office / Professional	4.4	-	-
Parks	73.3	-	-
Schools	20.2	-	-
Drainage / Trails / Detention / Joint Use	101.3	-	-
Power Line Corridor / Trail	16.3	-	-
Landfill Site / Open Space	18.4	-	-
Major Roads / Other	74.3	-	-
Totals	**1,744.6**	**4,950**	**100**

SOURCE: RHC Group 2010.

2.7.2 Off-Site Alternatives

Several off-site locations were examined for proposed development, including lands in Southern Placer County, Southern Sutter County and Northern Sacramento County. Lands in Yolo County were not deemed to be feasible due to the amount of physical and environmental constraints (floodplains, habitat, existing land uses, etc.) associated with lands along the eastern edge of Yolo County. Outside of the off-site alternatives discussed below, there are no other approved areas in northern Sacramento County able to accommodate a development program such as that proposed for the project site. In addition, there are no other non-approved lands of sufficient size that could be reasonably assembled to accommodate a mixed-use planned community similar in scope to that proposed for the project site. **Figure 2-6** shows a map of off-site alternatives.

Placer Vineyard

Placer Vineyards is a 5,230 acre mixed-use planned community that, at buildout, could include up to 14,132 homes at varying densities, a 434 acre employment center, 166 acres of retail commercial and 920 acres of parks and open space. Placer Vineyards abuts the project site to the north across the Placer County line. Existing transportation corridors (Base Line and 16th Street) bisect Placer Vineyards. This development area is in Placer County and would not meet the stated purpose and need for development in north central Sacramento County.

Sutter Point

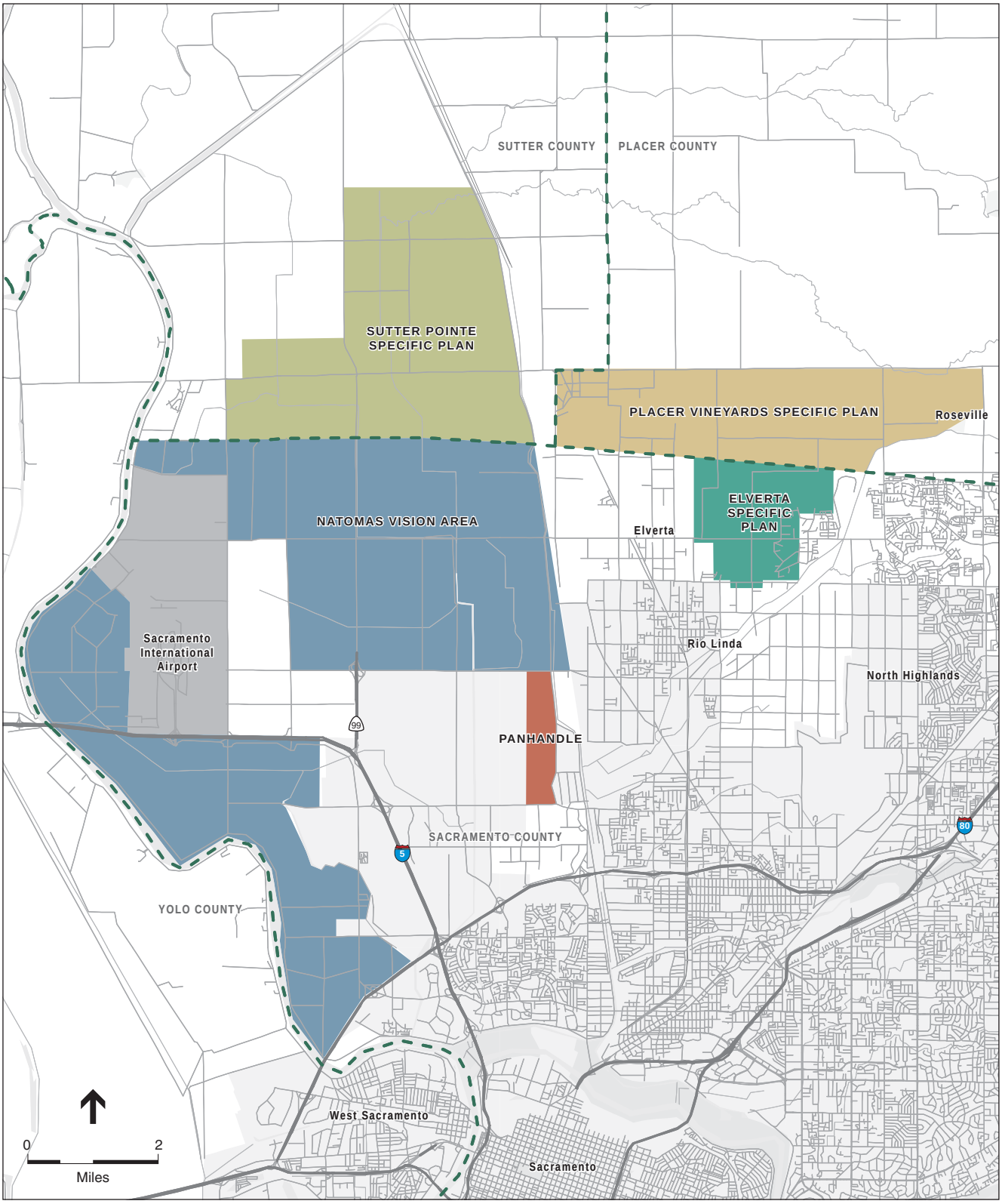
The Sutter Point Specific Plan is a 7,528 acre mixed-use community planned to accommodate up to 17,500 new homes, close to 50 million square feet of industrial and retail space and close to 1,000 acres of community facilities. The Sutter site is just to the north of the Sutter County / Sacramento County line approximately 5 miles from the project site. Highway 99 bisects the Sutter site. This development area is in Sutter County would not meet the stated purpose and need for development in north central Sacramento County.

Panhandle

The Panhandle is an area of land located approximately 5 miles west of the project site in unincorporated Sacramento County. The Panhandle site meets the locational criteria of the Project purpose but is limited by its size (roughly 600 acres) to provide a large, mixed-use development. The City of Sacramento is also proposing to annex the Panhandle, and therefore the need to provide a development within northern Sacramento County would not be met. Given the size and planning constraints associated with this site, this alternative was dropped from further consideration.

Natomas Joint Vision Area

The Natomas Joint Vision Area is an approximately 20,000 acre assemblage of land in unincorporated Sacramento County just to the north of the City of Sacramento, approximately 5 miles to the west of the project site. All of the lands within the Natomas Joint Vision Area fall within the boundary of the North Natomas Habitat Conservation Plan (HCP) and are subject to additional development fees. The Natomas Joint Vision Area meets all of the criteria (location, size, services) as a viable



SOURCE: DeLorme Street Atlas, 2000; MacKay & Somps, 2010; and ESA, 2011

Elverta Specific Plan EIS . 207431

Figure 2-6
Offsite Alternatives

alternative to the project site. It also meets the stated project purpose as providing for a growth center for northern Sacramento County. In general, parcels within the Joint Vision Area are large and regularly shaped that would allow for the assemblage of acreage sufficient in size to accommodate a development program similar to that planned for the project site. However, the land is owned by multiple entities that may not be willing sellers.

A Draft Concept Plan for the area notes that 12,000 acres of land are considered non-committed (not yet developed or slated for development), with approximately 6,000 – 7,000 acres available for urban development. The other half of the non-committed land occurs in areas subject to in-basin flooding. Lands not subject to flooding involve properties with significant farmland importance. However, a majority of these landholdings have filed for non-renewal of their Williamson Act contracts.

Lastly, the Natomas Joint Vision Area contains a variety of wetland features and other waters of the U.S., including seasonal wetlands, freshwater marsh, and riparian habitat. The site also contains suitable habitat for federally and state listed species, including giant garter snake, valley elderberry longhorn beetle, and Swainson's hawk. Based on these factors, it is likely that a development of a size similar to the Plan Area would result in significant and adverse impacts to wetlands and listed species. For these reasons, this alternative would fail to reduce potential effects to wetlands and other aquatic resources, and was therefore dismissed from further consideration.

2.8 References

County of Sacramento. 2007. *Final Elverta Specific Plan.* Prepared by The Hodgson Company with Towne Consulting LLC et al. Published August 2007.

County of Sacramento. 2008. *Sacramento County Housing Element 2008-2013.* Chapter 3, Sub-Strategy VII-A, Policy HE-59c [page 3-91]. Published December 2008.

DERA, 2007. Final Environmental Impact Report – Elverta Specific Plan and Associated Subdivision Map Known as Countryside Equestrian Estates. County of Sacramento Department of Environmental Review and Assessment Published May 2007.

Hodgson, 2009. Presentation on the Elverta Specific Plan Proposed Riparian Corridor Concept. April 23, 2009.

MacKay and Somps, 2011. Draft Revision of the Storm Drainage Master Plan for the Elverta Specific Plan. June 10, 2011.

CHAPTER 3.0
Affected Environment

3.1 Introduction

Per 40 CFR §1502.15, an EIS shall include a description of the environment to be affected by the alternatives under consideration. Issues that are discussed include:

- Aesthetics
- Air Quality and Global Climate Change
- Biological Resources
- Aquatic Resources
- Cultural and Historic Resources
- Socioeconomics and Environmental Justice
- Geology, Soils and Mineral Resources
- Hazards and Hazardous Materials
- Hydrology, Flooding and Water Quality
- Land Use and Agriculture
- Noise
- Public Services, Utilities and Recreation
- Transportation and Traffic

This Page is Intentionally Left Blank

3.2 Aesthetics

This section provides a description of the visual, i.e., aesthetic resources for the project site and vicinity.

3.2.1 Existing Setting

Visual resources are the natural and human-built features of the landscape that can be seen and that contribute to an attractive landscape appearance and the public's enjoyment of the environment.

Descriptions of visual character and quality used in this section rely on the following standard terms (FHWA, 1983):

- Vividness: The visual power or memorability of landscape components as they combine in striking or distinctive visual patterns.
- Intactness: The visual integrity of the natural and artificial landscape and its freedom from encroaching elements. Intactness can be present in well-kept urban and rural landscapes, as well as in natural settings.
- Unity: The visual coherence and compositional harmony of the landscape considered as a whole. Unity frequently attests to the careful design of individual components in the artificial landscape.

Visual resources are the natural and human-built features of the landscape that can be seen and that contribute to an attractive landscape appearance and the public's enjoyment of the environment. Viewer sensitivity or concern is based on the visibility of resources in the landscape, proximity of viewers to the visual resource, elevation of viewers relative to the visual resource, frequency and duration of view(s), and types and expectations of individuals and viewer groups. Generally, visual sensitivity increases with an increase in total numbers of viewers, frequency of viewing, and duration of views. Also, visual sensitivity is higher for views seen by people who are driving for pleasure; people engaging in recreational activities such as hiking, biking, or camping; and homeowners. Sensitivity tends to be lower for views seen by people driving to and from work or as part of their work. Views from recreation trails and areas, scenic highways, and scenic overlooks are generally assessed as having high visual sensitivity.

3.2.1.1 Regional Setting

The project site is located in north-central Sacramento County, California. A mix of agricultural, developed, and natural landscapes characterize the region. To the north of the project site is primarily open space with some agricultural uses (including grazing) and scattered rural residences. To the east, south and west of the project site are primarily residential uses with open space, agricultural and recreational uses dispersed throughout. Medium and high density residential uses are located primarily to the east and south within the communities of Elverta and Rio Linda and the North Highlands area. Low density residential uses (ranch homes and larger estates) are located immediately south and west of the project site. Recreational uses and open space are dominant along Dry Creek drainage corridor, including golf courses, Dry Creek Parkway, Gibson Ranch and the Cherry Island

Soccer Complex. Active agricultural uses include livestock grazing, equestrian uses, row crops. Fallow agricultural lands are also located throughout the region. The McClellan Business Park and associated McClellan Airport are located over a mile southeast of the project site, but are not visible from the project site.

Views of the surrounding land uses have a moderate level of intactness and unity as suburban residential uses are grouped together and the transition to low-density/rural residential uses is somewhat gradual. The change from one density to another is not immediately obvious. The vividness of the surrounding area is low. Residences in rural and suburban areas surrounding the site are primarily indistinctive and typical of nearby lots.

3.2.1.2 Project Setting

Views of the Project Site

The topography of the 1,745 acre project site is flat to gently undulating, with elevations ranging from a high of approximately 85 feet in the northeast to a low of approximately 50 feet in the west/southwest. This range in elevation is not immediately evident while driving or walking along the existing roadways around and within the project site. The site appears flat with unnoticeable elevation variation. **Figure 3.2-1** through **Figure 3.2-6** show existing views in the Plan area. **Figure 3.2-7** shows the viewpoints used in the photographs.

The project site consists primarily of non-native annual grassland habitat used for dry land pasture, with minor areas used for irrigated truck crops such as strawberries. The site's pasture lands support cattle grazing and equestrian activities. Views of the project site also include intermittent agricultural buildings and equipment. Trees are generally lacking throughout the site, although groups of trees have been planted in clusters around residences and as windbreaks along roadways. A PG&E power transmission line bisects the planning area in a generally north-south direction. Rural residential households are located within the project site, mostly grouped along Elverta Road, Palladay Road, 16th Street, and Kasser Road. Two residences also conduct business activities within the project site. The Elverta Honey Bears Preschool on Elverta Road (APN 202-0080-015) is a weekday preschool within a separate building from the residence and includes a fenced playground and asphalt-paved parking area. The other commercial site, Hundaelbillsung (APN 202-007-021) is a canine obedience school. The eastern and southern portions of the planning area are uninhabited. A portion of a 20-acre parcel on Palladay Road was historically used as a landfill (the Monroe Landfill) for domestic waste (DERA, 2007).

Off-site viewer groups in the area include private residences, motor vehicle travelers along area roads, bicyclists, and pedestrians using the roadways for travel (to and from school and work) as well as recreational activity. Due to the large size of uninterrupted open space and grasslands, the project site has a moderate to high level of intactness and unity. The rural character of the site has a moderate level of vividness because it provides a memorable visual experience to travelers and residents through a mix of open grasslands, mature trees, sporadic animal grazing, equestrian activities visible from roadways, and an expansive view of the skyline. However, agricultural equipment, sporadic instances of dilapidated agriculture-related buildings and debris (including abandoned vehicles) detracts somewhat from the visual experience.

PHOTOGRAPH 1 – Eastern Project site boundary; view to north from Elverta Road.

PHOTOGRAPH 2 – Eastern Project site boundary; view to west along Elverta Road.

PHOTOGRAPH 3 – Eastern project site boundary; view to south from Elverta Road. Substation shown in foreground.

SOURCE: ESA, 2011

Figure 3.2-1
Project Site Photographs – Viewpoint 1

PHOTOGRAPH 1 – View to northeast from 16th Street and Elverta Road. Farm-house and wind mill shown.

PHOTOGRAPH 2 – View to northwest from 16th Street and Elverta Road.

PHOTOGRAPH 3 – View to south from 16th Street and Elverta Road.

SOURCE: ESA, 2011

Elverta Specific Plan EIS . 207431

Figure 3.2-2
Project Site Photographs – Viewpoint 2

PHOTOGRAPH 1 – View to southeast from 16th Street and Kasser Road.

PHOTOGRAPH 2 – View to west from 16th Street and Kasser Road.

PHOTOGRAPH 3 – View to south from 16th Street and Kasser Road.

SOURCE: ESA, 2011

Figure 3.2-3
Project Site Photographs – Viewpoint 3

PHOTOGRAPH 1 – View to north from 16th Street and U Street; 230 kV powerlines.

PHOTOGRAPH 2 – View to east; 16th Street and U Street, the southeastern Project site boundary.

PHOTOGRAPH 3 – View to west along U Street.

SOURCE: ESA, 2011

Elverta Specific Plan EIS . 207431

Figure 3.2-4
Project Site Photographs – Viewpoint 4

PHOTOGRAPH 1 – View to north from U Street at 14th Street.

PHOTOGRAPH 2 – View to northeast from north end of Dry Creek Road.

PHOTOGRAPH 3 – View to southwest from Palladay Road.

SOURCE: ESA, 2011

Figure 3.2-5
Project Site Photographs – Viewpoints 5, 6, and 7

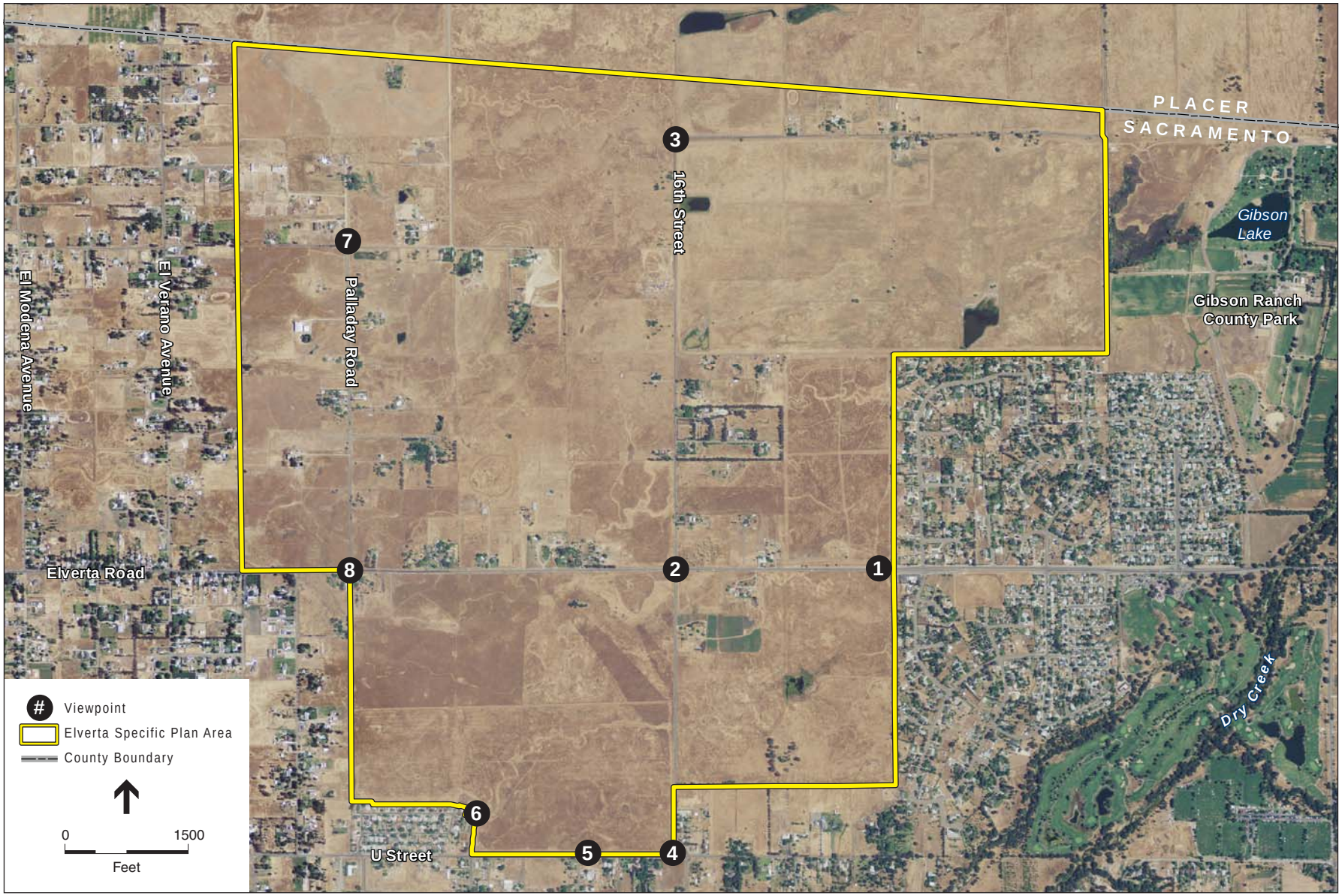
PHOTOGRAPH 1 – View to east from Elverta Road and Palladay Road.

PHOTOGRAPH 2 – View to west from Elverta Road and Palladay Road.

SOURCE: ESA, 2011

Elverta Specific Plan EIS . 207431

Figure 3.2-6
Project Site Photographs – Viewpoint 8



SOURCE: ESRI, 2009; NAIP, 2009; RCH Group, 2010; and ESA, 2011

Elverta Specific Plan EIS . 207431

Figure 3.2-7
Project Site Viewpoints

Scenic Vistas and Highways

There are no officially designated or eligible State scenic highways. The nearest highway segment that is officially designated as a State Scenic Highway is Highway 160, located more than 15 miles southwest of the project site (Caltrans, 2007). There are also no locally designated scenic highways or vistas in the vicinity of the project site which would be affected.

Light and Glare

Light and glare in the project area are mostly from outdoor street lights and from indoor/outdoor lights illuminating existing residences and businesses in the area. Motorists traveling along local roadways, including Elverta Road, 16th Street and U Street also contribute to nighttime sources of light and glare in the project area.

3.2.2 Regulatory Setting

There are no federal, state or local laws that are applicable to the alternative under consideration.

3.2.3 References

California Department of Transportation (Caltrans), 2007. Officially Designated State Scenic Highways and Historic Parkways. Available online: http://www.dot.ca.gov/hq/LandArch/scenic_highways/index.htm

DERA, 2007. Final Environmental Impact Report – Elverta Specific Plan and Associated Subdivision Map Known as Countryside Equestrian Estates. County of Sacramento Department of Environmental Review and Assessment Published May 2007.

Federal Highway Administration (FHWA), 1983. *Visual Impact Assessment for Highway Projects.* Publication No. FHWA-HI-88-054. Available online: http://www.dot.ca.gov/ser/downloads/visual/FHWAVisualImpactAssmt.pdf

Sacramento County, 1974. Scenic Highways Element of the General Plan. Available online: http://www.msa2.saccounty.net/planning/Pages/GeneralPlan.aspx

Sacramento County, 2011. *General Plan of 2005 – 2030.* Amended November 9, 2011.

3.3 Air Quality and Global Climate Change

3.3.1 Existing Setting

This section addresses the existing air quality setting for the project site and vicinity. Greenhouse gases and global climate change are also discussed.

The project site is located within the Sacramento Valley Air Basin (SVAB), which includes all of Sacramento, Butte, Colusa, Glenn, Shasta, Sutter, Tehama, Yolo, and Yuba Counties, the western portion of Placer County, and the eastern portion of Solano County.

3.3.1.1 Existing Air Quality

The California Air Resources Board (ARB) regional air quality monitoring network provides information on ambient concentrations of non-attainment criteria air pollutants. The closest monitoring station to the project site is located in North Highlands (monitors ozone and PM10). The nearest station that monitors PM2.5 is the Del Paso Manor station in Sacramento. **Table 3.3-1** presents a three-year summary of air pollutant (concentration) data collected at these monitoring stations for ozone, PM10, and PM2.5 (particulate matter (PM) that is 10 microns and 2.5 microns or less in diameter, respectively), the pollutants for which Sacramento County remains "nonattainment." **Table 3.3-1** includes a comparison of monitored air pollutant concentrations with state and national ambient air quality standards.

3.3.1.2 Sensitive Receptors

Some receptors are considered more sensitive than others to air pollutants. Reasons for greater sensitivity include pre-existing health problems, proximity to emissions source, or duration of exposure to air pollutants. Schools, hospitals and convalescent homes are considered to be relatively sensitive to poor air quality because children, elderly people and the infirm are more susceptible to respiratory infections and other air quality-related health problems than the general public. Residential areas are also sensitive to poor air quality because people usually stay home for extended periods of time. There are many sensitive residential receptors adjacent to and within the project site boundary.

TABLE 3.3-1
AIR QUALITY DATA SUMMARY (2009-2011) FOR THE PROJECT AREA

	Monitoring Data by Year		
Pollutant	**2009**	**2010**	**2011**
Ozone – North Highlands Station			
Highest 1 Hour Average (ppm)[b]	**0.097**	**0.100**	**0.112**
Days over State Standard (0.09 ppm)[a]	1	3	5
Highest 8 Hour Average (ppm)[b]	**0.086**	**0.090**	**0.093**
Days over National Standard (0.075 ppm)[a]	7	3	9
Days over State Standard (0.07 ppm)[a]	18	10	20
Particulate Matter (PM10) – North Highlands Station			
Highest 24 Hour Average – State/National ($\mu g/m^3$)[b]	34.0/33.0	49.0/48.0	**68.0**/65.0
Estimated Days over National Standard (150 $\mu g/m^3$)[a,c]	0	0	0
Estimated Days over State Standard (50 $\mu g/m^3$)[a,c]	0	0	6.1
State Annual Average (State Standard 20 $\mu g/m^3$)[a,b]	19.1	15.6	19.6
Particulate Matter (PM2.5) – Del Paso Manor Station			
Highest 24 Hour Average ($\mu g/m3$)[b] – National Measurement	**49.8**	33.9	**54.3**
Estimated Days over National Standard (35 $\mu g/m^3$)[a,c]	8.9	0	9.5
State Annual Average (12 $\mu g/m3$)[b]	10.6	8.7	10.4

a Generally, state standards and national standards are not to be exceeded more than once per year.
b ppm = parts per million; $\mu g/m^3$ = micrograms per cubic meter.
c PM10 and PM2.5 is not measured every day of the year. Number of estimated days over the standard is based on 365 days per year.

NA = Not Available. Values in **Bold** exceed the respective air quality standard.

SOURCE: California Air Resources Board (ARB), 2012a. *Summaries of Air Quality Data*, 2009-2011; http://www.arb.ca.gov/adam/topfour/topfour1.php

3.3.1.3 Criteria Air Pollutants

Criteria air pollutants are air pollutants that are regulated based on scientific criteria (human health-based and/or environmentally-based) for setting permissible levels. The following criteria air pollutants are discussed: Ozone, Carbon Monoxide, Respirable Particulate Matter, Nitrogen Dioxide, Sulfur Dioxide and Lead.

Ozone. Short-term exposure to ozone can irritate the eyes and cause constriction of the airways. Besides causing shortness of breath, ozone can aggravate existing respiratory diseases such as asthma, bronchitis, and emphysema. As depicted in **Table 3.3-1** above, ozone levels in the project site vicinity exceed the state and national standards.

Carbon Monoxide (CO). When inhaled at high concentrations, CO combines with hemoglobin in the blood and reduces the oxygen-carrying capacity of the blood. This results in reduced oxygen reaching the brain, heart, and other body tissues. This condition is especially critical for people with cardiovascular diseases, chronic lung disease, or anemia, as well as for fetuses.

Nitrogen Dioxide (NO_2). Automobiles and industrial operations are the main sources of NO_2. NO_2 is an air quality concern because it acts as a respiratory irritant and is a precursor of ozone.

Sulfur Dioxide (SO_2). SO_2 is a precursor to the formation of atmospheric sulfate and particulate matter and contributes to potential atmospheric sulfuric acid formation that could precipitate downwind as acid rain.

Respirable Particulate Matter (PM10 and PM2.5). PM10 and PM2.5 consist of particulate matter that is 10 microns (one-millionth of a meter) or less in diameter and 2.5 microns or less in diameter, respectively. PM10 and PM2.5 are a health concern particularly at levels above the federal and state ambient air quality standards. PM2.5 (including diesel exhaust particles) is thought to have greater effects on health, because these particles are so small and thus, are able to penetrate to the deepest parts of the lungs. Scientific studies have suggested links between fine particulate matter and numerous health problems including asthma, bronchitis, and acute and chronic respiratory symptoms such as shortness of breath and painful breathing. Children are more susceptible to the health risks of PM10 and PM2.5 because their immune and respiratory systems are still developing. As depicted in **Table 3.3-1** above, PM10 levels in the project site vicinity have exceeded the state standard in the last three years and PM2.5 levels exceed the state and national standards.

Mortality studies since the 1990s have shown a statistically significant direct association between mortality (premature deaths) and daily concentrations of particulate matter in the air. Despite important gaps in scientific knowledge and continued reasons for some skepticism, a comprehensive evaluation of the research findings provides persuasive evidence that exposure to fine particulate air pollution has adverse effects on cardiopulmonary health (Dockery and Pope, 2006).

Lead. Ambient lead concentrations meet both the federal and state standards within and near the project site. Lead has a range of adverse neurotoxin health effects, and was formerly released into the atmosphere primarily via leaded gasoline products.

3.3.1.4 Toxic Air Contaminants (TACs)

TACs are airborne substances that are capable of causing short-term (acute) and/or long-term (chronic or carcinogenic, i.e., cancer causing) adverse human health effects (i.e., injury or illness). The current California list of TACs includes approximately 200 compounds, including particulate emissions from diesel-fueled engines. For TACs, there is no federal or state ambient air quality standard against which to measure a project's air quality impacts. For this reason, TACs are analyzed by performing a health risk assessment.

TACs may be emitted from a variety of common sources including gasoline stations, automobiles, dry cleaners, industrial operations, and painting operations.

3.3.1.5 Odorous Emissions

Though offensive odors from stationary sources rarely cause any physical harm, they still remain unpleasant and can lead to public distress generating citizen complaints to local governments. There is no federal standard for odors. The Sacramento Metropolitan Air Quality Management District (SMAQMD) generally considers odor sources to have a substantial number of odor complaints

if they have had one confirmed complaint per year averaged over a 3-year period or three unconfirmed complaints per year averaged over a 3-year period.

3.3.1.6 Greenhouse Gases and Global Climate Change

Gases that trap heat in the atmosphere are called greenhouse gases (GHGs). The accumulation of GHGs in the atmosphere has been linked to global climate change. Global climate change is a change in the average weather conditions on earth that can be measured by wind patterns, storms, precipitation, and temperature. GHGs include all of the following naturally-occurring and anthropogenic (man-made) gases: carbon dioxide (CO_2), methane, nitrous oxide (N_2O), sulfur hexafluoride, perfluorocarbons, hydrofluorocarbons, and nitrogen trifluoride (NF_3) (California Health and Safety Code §38505(g)). CO_2 is the reference gas for climate change. To account for the warming potential of GHGs, and to combine emissions of gases with differing properties, GHG emissions are typically quantified and reported as tons per year of CO_2 equivalents (CO_2e).

Potential global warming impacts in California could include loss in snow pack, sea level rise, more extreme heat days per year, more high ozone days, more large forest fires, and more drought years. Secondary effects are likely to include a global rise in sea level, impacts to agriculture, changes in disease vectors, and changes in habitat and biodiversity.

3.3.2 Regulatory Setting

3.3.2.1 Federal

Federal Clean Air Act

The Federal Clean Air Act (FCAA) requires the U.S. Environmental Protection Agency (USEPA) to identify National Ambient Air Quality Standards (NAAQS or national standards) to protect public health and welfare. National standards have been established for ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, PM10, PM2.5, and lead. **Table 3.3-2** shows current national and state ambient air quality standards and provides a brief discussion of the related health effects and principal sources for each pollutant.

TABLE 3.3-2
STATE AND NATIONAL CRITERIA AIR POLLUTANT STANDARDS, EFFECTS, AND SOURCES

Pollutant	Averaging Time	State Standard	National Standard	Pollutant Health and Atmospheric Effects	Major Pollutant Sources
Ozone	1 hour	0.09 ppm	---	High concentrations can directly affect lungs, causing irritation. Long-term exposure may cause damage to lung tissue.	Formed when reactive organic gases (ROG) and nitrogen oxides (NOx) react in the presence of sunlight. Major sources include on-road motor vehicles, solvent evaporation, and commercial / industrial mobile equipment.
	8 hours	0.070 ppm	0.075 ppm		
Carbon Monoxide	1 hour	20 ppm	35 ppm	Classified as a chemical asphyxiant, carbon monoxide interferes with the transfer of fresh oxygen to the blood and deprives sensitive tissues of oxygen.	Internal combustion engines, primarily gasoline-powered motor vehicles.
	8 hours	9.0 ppm	9 ppm		
Nitrogen Dioxide	1 hour	0.18 ppm	100 ppb	Irritating to eyes and respiratory tract. Colors atmosphere reddish-brown.	Motor vehicles, petroleum refining operations, industrial sources, aircraft, ships, and railroads.
	Annual Avg.	0.030 ppm	53 ppb		
Sulfur Dioxide	1 hour	0.25 ppm	75 ppb	Irritates upper respiratory tract; injurious to lung tissue. Can yellow the leaves of plants, destructive to marble, iron, and steel. Limits visibility and reduces sunlight.	Fuel combustion, chemical plants, sulfur recovery plants, and metal processing.
	3 hours	---	0.5 ppm		
	24 hours	0.04 ppm	0.14 ppm		
Respirable Particulate Matter (PM10)	24 hours	50 $\mu g/m^3$	150 $\mu g/m^3$	May irritate eyes and respiratory tract, decreases in lung capacity, can cause cancer and increased mortality. Produces haze and limits visibility.	Dust and fume-producing industrial and agricultural operations, combustion, atmospheric photochemical reactions, and natural activities (e.g., wind-raised dust and ocean sprays).
	Annual Avg.	20 $\mu g/m^3$	---		
Fine Particulate Matter (PM2.5)	24 hours	---	35 $\mu g/m^3$	Increases respiratory disease, lung damage, cancer, and premature death. Reduces visibility and results in surface soiling.	Fuel combustion in motor vehicles, equipment, and industrial sources; residential and agricultural burning; Also, formed from photochemical reactions of other pollutants, including NOx, sulfur oxides, and organics.
	Annual Avg.	12 $\mu g/m^3$	15.0 $\mu g/m^3$		
Lead	Monthly Ave.	1.5 $\mu g/m^3$	---	Disturbs gastrointestinal system, and causes anemia, kidney disease, and neuromuscular and neurological dysfunction.	Present source: lead smelters, battery manufacturing & recycling facilities. Past source: combustion of leaded gasoline.
	Quarterly	---	1.5 $\mu g/m^3$		
Hydrogen Sulfide	1 hour	0.03 ppm	No National Standard	Nuisance odor (rotten egg smell), headache and breathing difficulties (higher concentrations)	Geothermal power plants, petroleum production and refining.
Sulfates	24 hour	25 $\mu g/m^3$	No National Standard	Breathing difficulties, aggravates asthma, reduced visibility	Produced by the reaction in the air of SO_2.
Visibility Reducing Particles	8 hour	Extinction of 0.23/km; visibility of 10 miles or more	No National Standard	Reduces visibility, reduced airport safety, lower real estate value, discourages tourism.	See PM2.5.

ppm = parts per million; $\mu g/m^3$ = micrograms per cubic meter.

SOURCES: California Air Resources Board (ARB), 2012b. *Ambient Air Quality Standards,* available at http://www.arb.ca.gov/research/aaqs/aaqs2.pdf Standards last updated June 7, 2012; and ARB, 2009. *ARB Fact Sheet: Air Pollution Sources, Effects and Control,* http://www.arb.ca.gov/research/health/fs/fs2/fs2.htm, page last updated December 2009.

Pursuant to the 1990 FCAA Amendments, the USEPA classifies air basins (or portions thereof) as "attainment" or "nonattainment" for each criteria air pollutants, based on whether or not the NAAQS had been achieved. **Table 3.3-3** shows the current attainment status of Sacramento County.

TABLE 3.3-3
SACRAMENTO COUNTY ATTAINMENT STATUS

	Designation/Classification	
Pollutant	**Federal Standards**	**State Standards**
Ozone – one hour	No Federal Standard	Nonattainment/Serious
Ozone – eight hour	Nonattainment/Severe	Nonattainment
PM10	Nonattainment/Moderate[1]	Nonattainment
PM2.5	Nonattainment	Nonattainment
CO	Attainment	Attainment
Nitrogen Dioxide	Attainment	Attainment
Sulfur Dioxide	Attainment[2]	Attainment
Lead	Attainment	Attainment
Hydrogen Sulfide	No Federal Standard	Unclassified
Sulfates	No Federal Standard	Attainment
Visibility Reducing Particles	No Federal Standard	Unclassified

1. Sacramento County currently meets federal PM10 standards and SMAQMD has submitted a redesignation request and maintenance plan to be formally designated attainment.
2. In regards to the federal SO_2 designation, the ARB recommended to USEPA that the state be classified attainment.

SOURCE: Sacramento Metropolitan Air Quality Management District (SMAQMD), 2012. *Air Quality Standards Attainment Status,* http://airquality.org/aqdata/attainmentstat.shtml, page accessed November 12, 2012; California Air Resources Board (ARB), 2012c. *Area Designation Maps,* http://www.arb.ca.gov/desig/adm/adm.htm, page updated May 8, 2012. USEPA, 2012. *Criteria Pollutant Area Summary Report*, http://www.epa.gov/air/oaqps/greenbk/ancl2.html, page update July 20, 2012.

The FCAA requires each state to prepare an air quality control plan referred to as the State Implementation Plan (SIP). The FCAA Amendments added requirements for states containing areas that violate the NAAQS to revise their SIPs to incorporate additional control measures to reduce air pollution.

Regulation of TACs, termed Hazardous Air Pollutants (HAPs) under federal regulations, is achieved through federal, state, and local controls on individual sources. The 1977 FCAA Amendments required the USEPA to identify National Emission Standards for Hazardous Air Pollutants (NESHAPs) to protect public health and welfare. These substances include certain volatile organic chemicals, pesticides, herbicides, and radionuclides that present a tangible hazard, based on scientific studies of exposure to humans and other mammals, though there is uncertainty in the precise degree of hazard.

Federal Conformity Requirements

The purpose of the General Conformity Rule (40 CFR Part 51, Subpart W) is to ensure that federal projects conform to applicable SIPs so that they do not interfere with strategies employed to attain the national standards. The rule applies to federal projects in nonattainment areas for national standards and in areas designated as "maintenance" areas (an area with a maintenance plan, meeting the requirements of section 175A of the FCAA).

A federal project that does not exceed the *de minimis* threshold rates specified in USEPA regulations may still be subject to a general conformity determination if the sum of direct and indirect emissions would exceed 10 percent of the emissions of the nonattainment or maintenance area. If emissions would exceed 10 percent, the federal project is considered "regionally significant," and thus general conformity rules apply. If the emissions would not exceed the *de minimis* levels and are not regionally significant, then the project is assumed to conform, and no further analysis or determination is required.

If a federal action falls under the general conformity rule, the federal agency responsible for the action is responsible for making the conformity determination. General conformity with respect to the EIS alternatives would be determined before the Record of Decision is signed.

3.3.2.2 State

State of California Criteria Air Pollutant Standards

California has adopted more stringent state ambient air quality standards for most of the criteria air pollutants. In addition, California has established state ambient air quality standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles. These standards are shown in **Table 3.3-2** above. In addition, the California Clean Air Act (CCAA), which is patterned after the federal Clean Air Act, also requires areas to be designated as "attainment" or "non-attainment" for the state standards. Thus, areas in California have two sets of attainment / non-attainment designations: one set with respect to the national standards and one set with respect to the state standards. These designations for Sacramento County are depicted above in **Table 3.3-3**.

State of California Toxic Air Contaminants Standards

The State Air Toxics Program was established in 1983 under Assembly Bill (AB) 1807 (Tanner). A total of 243 substances have been designated TACs under California law; they include the 189 (federal) HAPs adopted in accordance with AB 2728. The Air Toxics "Hot Spots" Information and Assessment Act of 1987 (AB 2588) seeks to identify and evaluate risk from air toxics sources; however, AB 2588 does not regulate air toxics emissions. Toxic air contaminant emissions from individual facilities are quantified and prioritized. "High-priority" facilities are required to perform a health risk assessment and, if specific thresholds are violated, are required to communicate the results to the public in the form of notices and public meetings.

In August of 1998, ARB identified particulate emissions from diesel-fueled engines (diesel particulate matter, or DPM) as TACs. ARB subsequently developed the *Proposed Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles* (ARB, 2000). The document represents proposals to reduce diesel particulate emissions, with the goal of reducing emissions and associated health risks by 75 percent in 2010 and by 85 percent in 2020. The program aims to require the use of state-of-the-art catalyzed diesel particulate filters and ultra low sulfur diesel fuel on diesel-fueled engines.

ARB recently published the *Air Quality and Land Use Handbook: A Community Health Perspective* (ARB, 2005). The primary goal in developing the handbook was to provide information that will

help keep California's children and other vulnerable populations out of harm's way with respect to nearby sources of air pollution. The handbook highlights recent studies that have shown that public exposure to air pollution can be substantially elevated near freeways and certain other facilities. The health risk is greatly reduced with distance. For that reason, ARB provides some general recommendations aimed at keeping appropriate distances between sources of air pollution and sensitive land uses, such as residences.

State of California Greenhouse Gas Standards

In September 2002, Governor Gray Davis signed AB 1493 requiring the development and adoption of regulations to achieve "the maximum feasible reduction of greenhouse gases" emitted by noncommercial passenger vehicles, light-duty trucks, and other vehicles used primarily for personal transportation in the state. In 2005, in recognition of California's vulnerability to the effects of climate change, Governor Schwarzenegger established Executive Order S-3-05, which set forth a series of target dates by which statewide emission of greenhouse gas would be progressively reduced, as follows:

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

Assembly Bill 32

In 2006, California passed the California Global Warming Solutions Act of 2006 (AB No. 32; California Health and Safety Code Division 25.5, Sections 38500, et seq.), which requires the ARB to design and implement emission limits, regulations, and other measures, such that statewide greenhouse gas emissions will be reduced to 1990 levels by 2020.

In December 2007, ARB approved the 2020 emission limit of 427 million metric tons of CO_2e of greenhouse gases. The 2020 target of 427 million metric tons of CO_2e requires the reduction of 169 million metric tons of CO_2e, or approximately 30 percent, from the state's projected 2020 emissions of 596 million metric tons of CO_2e (business-as-usual).

AB 32 required development of a mandatory reporting rule for major sources of GHGs. The ARB reporting rule (California Code of Regulations Title 17, Subchapter 10, Article 2, §95100 to 95133) became effective in January 2009. The rule requires reporting of GHG emissions for:

- Cement plants;
- Petroleum refineries ($\geq$ 25,000 metric tons of CO_2e in any calendar year);
- Hydrogen plants ($\geq$ 25,000 metric tons of CO_2e in any calendar year);
- Electric generating facilities and cogeneration facilities (> 1 MW capacity and > 2,500 metric tons of CO_2e in any year)
- Electricity retail providers and marketers
- Other facilities that emit >25,000 metric tons of CO_2e, for stationary combustion sources, in any calendar year.

Cement plants, oil refineries, fossil-fueled electric-generating facilities/providers, cogeneration facilities, and hydrogen plants and other stationary combustion sources that emit more than 25,000 metric tons/year CO_2e, make up 94 percent of the point source CO_2e emissions in California.

In June 2008, ARB published its *Climate Change Draft Scoping Plan* (ARB, 2008a) that was approved and adopted by the ARB Board on December 11, 2008 as the *Climate Change Scoping Plan* (ARB, 2008b). The *Climate Change Draft Scoping Plan* reported that ARB met the first milestones set by AB 32 in 2007: developing a list of early actions to begin sharply reducing GHG emissions; assembling an inventory of historic emissions; and establishing the 2020 emissions limit. Key elements of the *Climate Change Scoping Plan* include:

- Expanding and strengthening existing energy efficiency programs as well as building and appliance standards;
- Achieving a statewide renewables energy mix of 33 percent;
- Developing a California cap-and-trade program that links with other Western Climate Initiative partner programs to create a regional market system;
- Establishing targets for transportation-related GHG emissions for regions throughout California, and pursuing policies and incentives to achieve those targets;
- Adopting and implementing measures pursuant to existing state laws and policies, including California's clean car standards, goods movement measures, and the Low Carbon Fuel Standard; and
- Creating targeted fees, including a public goods charge on water use, fees on high global warming potential gases, and a fee to fund the administrative costs of the state's long-term commitment to AB 32 implementation (ARB, 2008b).

ARB has not yet determined what amount of GHG emissions reductions it recommends from local government land use decisions; however, the *Climate Change Scoping Plan* does state that successful implementation of the plan relies on local governments' land use planning and urban growth decisions because local governments have primary authority to plan, zone, approve, and permit land development to accommodate population growth and the changing needs of their jurisdictions. ARB further acknowledges that decisions on how land is used will have large effects on the GHG emissions that will result from the transportation, housing, industry, forestry, water, agriculture, electricity, and natural gas emission sectors.

The *Climate Change Scoping Plan* also includes recommended measures that were developed to reduce GHG emissions from key sources and activities while improving public health, promoting a cleaner environment, preserving our natural resources, and ensuring that the impacts of the reductions are equitable and do not disproportionately impact low-income and minority communities. These measures, shown below in **Table 3.3-4** by sector, also put the state on a path to meet the long-term 2050 goal of reducing California's GHG emissions to 80 percent below 1990 levels.

The total reduction for the recommended measures is 174 million metric tons/year of CO_2e, slightly exceeding the 169 million metric tons/year of CO_2e reductions estimated to be needed in the *Climate Change Draft Scoping Plan*. The measures in the *Climate Change Scoping Plan* approved by the ARB will be developed over the next two years and be in place by 2012.

TABLE 3.3-4
LIST OF RECOMMENDED ACTIONS BY SECTOR

Measure No.	Measure Description	GHG Reductions (Annual Million Metric Tons CO_2e)
Transportation		
T-1	Pavley I and II – Light Duty Vehicle Greenhouse Gas Standards	31.7
T-2	Low Carbon Fuel Standard (Discrete Early Action)	15
T-3[1]	Regional Transportation-Related Greenhouse Gas Targets	5
T-4	Vehicle Efficiency Measures	4.5
T-5	Ship Electrification at Ports (Discrete Early Action)	0.2
T-6	Goods Movement Efficiency Measures. • Ship Electrification at Ports • System-Wide Efficiency Improvements	3.5
T-7	Heavy-Duty Vehicle Greenhouse Gas Emission Reduction Measure – Aerodynamic Efficiency (Discrete Early Action)	0.93
T-8	Medium- and Heavy-Duty Vehicle Hybridization	0.5
T-9	High Speed Rail	1
Electricity and Natural Gas		
E-1	Energy Efficiency (32,000 GWh of Reduced Demand) • Increased Utility Energy Efficiency Programs • More Stringent Building & Appliance Standards Additional Efficiency and Conservation Programs	15.2
E-2	Increase Combined Heat and Power Use by 30,000 GWh (Net reductions include avoided transmission line loss)	6.7
E-3	Renewables Portfolio Standard (33% by 2020)	21.3
E-4	Million Solar Roofs (including California Solar Initiative, New Solar Homes Partnership and solar programs of publicly owned utilities) • Target of 3000 MW Total Installation by 2020	2.1
CR-1	Energy Efficiency (800 Million Therms Reduced Consumptions) • Utility Energy Efficiency Programs • Building and Appliance Standards • Additional Efficiency and Conservation Programs	4.3
CR-2	Solar Water Heating (AB 1470 goal)	0.1
Green Buildings		
GB-1	Green Buildings	26
Water		
W-1	Water Use Efficiency	1.4†
W-2	Water Recycling	0.3†
W-3	Water System Energy Efficiency	2.0†
W-4	Reuse Urban Runoff	0.2†
W-5	Increase Renewable Energy Production	0.9†
W-6	Public Goods Charge (Water)	TBD†
Industry		
I-1	Energy Efficiency and Co-Benefits Audits for Large Industrial Sources	TBD
I-2	Oil and Gas Extraction GHG Emission Reduction	0.2
I-3	GHG Leak Reduction from Oil and Gas Transmission	0.9
I-4	Refinery Flare Recovery Process Improvements	0.3
I-5	Removal of Methane Exemption from Existing Refinery Regulations	0.01

TABLE 3.3-4 (Continued)
LIST OF RECOMMENDED ACTIONS BY SECTOR

Measure No.	Measure Description	GHG Reductions (Annual Million Metric Tons CO_2e)
Recycling and Water Management		
RW-1	Landfill Methane Control (Discrete Early Action)	1
RW-2	Additional Reductions in Landfill Methane • Increase the Efficiency of Landfill Methane Capture	TBD†
RW-3	High Recycling/Zero Waste • Commercial Recycling • Increase Production and Markets for Compost • Anaerobic Digestion • Extended Producer Responsibility • Environmentally Preferable Purchasing	9†
Forests		
F-1	Sustainable Forest Target	5
High Global Warming Potential (GWP) Gases		
H-1	Motor Vehicle Air Conditioning Systems: Reduction of Refrigerant Emissions from Non-Professional Services (Discrete Early Action)	0.26
H-2	SF_6 Limits in Non-Utility and Non-Semiconductor Applications (Discrete Early Action)	0.3
H-3	Reduction of Perfuorocarbons in Semiconductor Manufacturing (Discrete Early Action)	0.15
H-4	Limit High GWP Use in Consumer Products Discrete Early Action (Adopted June 2008)	0.25
H-5	High GWP Reductions from Mobile Sources • Low GWP Refrigerants for New Motor Vehicle Air Conditioning Systems • Air Conditioner Refrigerant Leak Test During Vehicle Smog Check • Refrigerant Recovery from Decommissioned Refrigerated Shipping Containers • Enforcement of Federal Ban on Refrigerant Release during Servicing or Dismantling of Motor Vehicle Air Conditioning Systems	3.3
H-6	High GWP Reductions from Stationary Sources • High GWP Stationary Equipment Refrigerant Management Program: – Refrigerant Tracking/Reporting/Repair Deposit Program – Specifications for Commercial and Industrial Refrigeration Systems • Foam Recovery and Destruction Program • SF Leak Reduction and Recycling in Electrical Applications • Alternative Suppressants in Fire Protection Systems • Residential Refrigeration Early Retirement Program	10.9
H-7	Mitigation Fee on High GWP Gases	5
Agriculture		
A-1	Methane Capture at Large Dairies	1.0†

[1] This is not the SB 375 regional target. ARB will establish regional targets for each Metropolitan Planning Organization (MPO) region following the input of the regional targets advisory committee and a consultation process with MPO's and other stakeholders per SB 375

† GHG emission reduction estimates are not included in calculating the total reductions needed to meet the 2020 target

3.3.2.3 Local

Sacramento County

Sacramento County has developed a *Climate Action Plan Strategy and Framework Document* (Sacramento County, 2011) that summarizes actions that the County has already taken and identifies possible future actions to be considered, in order to provide a framework for reducing GHG emissions. The County is committed to working with regional partners to comply with AB 32 in reducing GHG emissions to 1990 levels by 2020, as well as reducing GHG emissions by 80 percent below 1990 levels by 2050 (consistent with Executive Order S-3-05). For municipal operations, Sacramento County has established the goal of reducing GHG emissions by 15 percent from the 2005 "current levels" baseline by 2020, pursuant to ARB recommendations (Sacramento County, 2011). The *Climate Action Plan Strategy and Framework Document* focuses on the specific sources of GHGs, including transportation, energy, water, waste management and recycling, and agriculture.

Sacramento Metropolitan Air Quality Management District

The project site lies within the jurisdiction of the SMAQMD, the agency empowered to regulate air pollutant emissions from stationary sources in Sacramento County. As noted earlier, the FCAA and the CCAA require plans to be developed for areas designated as non-attainment (with the exception of areas designated as non-attainment for the state PM10 standard). Plans are also required under federal law for areas designated as "maintenance" for national standards. Such plans are to include strategies for attaining the standards.

The first air quality plan for the Sacramento Air Quality Maintenance Area was prepared in 1979 to meet FCAA requirements and to address the non-attainment designation for the national ozone and CO standards. This 1979 plan was updated in 1982. Under the 1990 amendments to the FCAA, revised plans were required for those areas, such as the Sacramento metropolitan area that had not attained the standards.

With respect to the national ozone standard, revised documents were published in 1993, 1994, and 2009. The *2009 Sacramento Metropolitan Area 8-hour Ozone Attainment and Reasonable Further Progress Plan* (SMAQMD et al., 2008) is the current federal air quality plan for the Sacramento metropolitan area. The 2009 ozone plan sets out a strategy for attaining the 1997 federal 8-hour ozone standard in the Sacramento Nonattainment Area by 2018. With respect to the national CO standard, the revised plan includes a "maintenance" plan that demonstrates how Sacramento County will continue to maintain CO concentrations below the standard.

Pursuant to state air quality planning requirements, the 1991 *Sacramento Air Quality Attainment Plan*, which is updated triennially, was developed to reduce population exposure to unhealthy levels of ozone through tighter industry controls, cleaner cars and trucks, cleaner fuels, and increased commute alternatives. The most recent update is the *2009 Triennial Report and Plan Revision* (SMAQMD, 2009), adopted December 2009, which identifies "all feasible measures" the SMAQMD will analyze or adopt over the next three years.

3.3.3 References

California Air Resources Board (ARB), 2000. Proposed Risk Reduction Plan for Diesel-Fueled Engines and Vehicles, October 2000.

ARB, 2005. Air Quality and Land Use Handbook: A Community Health Perspective, April 2005.

ARB, 2008a. Climate Change Draft Scoping Plan. June 2008 Discussion Draft.

ARB. 2008b. Climate Change Scoping Plan. December 11, 2008.

ARB, 2009. ARB Fact Sheet: Air Pollution Sources, Effects and Control, http://www.arb.ca.gov/research/health/fs/fs2/fs2.htm, page last reviewed December 2009.

ARB, 2012a. Summaries of Air Quality Data, 2009-2011; http://www.arb.ca.gov/adam/topfour/topfour1.php.

ARB, 2012b. Ambient Air Quality Standards, available at http://www.arb.ca.gov/research/aaqs/aaqs2.pdf Standards last updated June 7, 2012.

ARB, 2012c. Area Designation Maps, http://www.arb.ca.gov/desig/adm/adm.htm, page updated May 8, 2012.

Dockery, D. W., and Pope, C.A., III, 2006. Health Effects of Fine Particulate Air Pollution: Lines that Connect. Journal Air & Waste Management Association, pp. 709–742.

Sacramento County, 2011. Climate Action Plan Strategy and Framework Document, adopted November 9, 2011.

Sacramento Metropolitan Air Quality Management District (SMAQMD), 2009. 2009 Triennial Report and Plan Revision. December 2009.

Sacramento Metropolitan Air Quality Management District (SMAQMD), 2012. *Air Quality Standards Attainment Status,* http://airquality.org/aqdata/attainmentstat.shtml, page accessed November 12, 2012.

Sacramento Metropolitan Air Quality Management District (SMAQMD), et al., 2008. Sacramento Regional 8-Hour Ozone Attainment and Reasonable Further Progress Plan. December 19, 2008.

United States Environmental Protection Agency (USEPA), 2012. Criteria Pollutant Area Summary Report, http://www.epa.gov/air/oaqps/greenbk/ancl2.html, page update July 20, 2012.

This Page is Intentionally Left Blank

3.4 Biological Resources

This section identifies the biological resources that may be affected by the alternatives analyzed within this EIS. The assessment of existing conditions and analysis of potential effects is based upon field surveys, a review of applicable databases, species literature, and several technical reports. The profiles of biological resources in this section provide the environmental baseline by which direct, indirect, and cumulative environmental effects are identified and measured in **Chapter 4.0**. This section focuses upon special-status species and their habitats. Wetlands and other waters of the U.S. that are regulated under Section 404 of the Clean Water Act are addressed in **Section 3.5**, Aquatic Resources.

3.4.1 Existing Setting

3.4.1.1 Regional Setting

The project site is located along the eastern edge of the Sacramento Valley within the Hardpan Terraces ecological subregion. Regional natural plant communities within this subregion include California annual grassland, needlegrass grassland and northern hardpan vernal pools. Climate is typically hot and semi-arid to subhumid. Mean annual precipitation is approximately 10 to 25 inches. Mean annual temperature ranges from 58 to 62 degrees Fahrenheit (Miles and Goudey, 1997).

3.4.1.2 Project Site Setting

The project site and general setting are described in **Section 1.2**. The project site and surrounding region is characterized as generally flat with an elevation change of roughly 35 feet from east to west. The project site drains from the northeast to the southwest, with a small portion of the project site draining to the northwest towards Placer County. Most of the land has been altered to allow for the cultivation of crops, development of fish farms and animal grazing. Grading required for some of these needs have resulted in artificial landforms that have historically held water for periods of time.

3.4.1.3 Vegetative Communities and Wildlife Habitats

The plant community descriptions and nomenclature used in this section generally follow the classification system of *A Guide to Wildlife Habitats of California* (Mayer and Laudenslayer, 1988) and the classification provided in Sawyer and Keeler-Wolf's *A Manual of California Vegetation* (1995). The California Wildlife Habitat Relationships (CWHR) habitat classification scheme has been developed to support the CWHR System, a wildlife information system and predictive model for California's regularly occurring birds, mammals, reptiles, and amphibians.

A number of biological studies have been conducted previously within portions of the project site. These include the following:

- *Jurisdictional Delineation Elverta Specific Plan Area* (Gibson & Skordal, 1999)
- *Gibson Ranch Biological Assessment* (Foothill Associates, 2000)
- *Countryside West ±137 Acre Site Wetland Delineation Report* (Foothill Associates, 2004)

- *Elverta Specific Plan Area Wetlands Delineation* (Davis[2] Consulting Earth Scientists, Inc., 2004)
- *Results of Surveys for Special-Status Species in the Elverta Specific Plan Area – Final Report* (Miriam Green Associates, 2000)
- *Results of Surveys for Special Status Species on Six Parcels in the Elverta Specific Plan Area Sacramento County, California* (Miriam Green Associates, 2004)
- *Results of Surveys for Special Status Species on the Northernmost River West Parcel Sacramento County, California* (Miriam Green Associates, 2004)
- *Gibson Ranch Tree Survey Data* (Foothill Associates, 2000)
- *Dry-Season Sampling for Federally-Listed Large Branchiopods at the Elverta Specific Plan Properties* (Helm Biological Consulting, 2008a)
- *Wet- Season Sampling for Federally-Listed Large Branchiopods at the Elverta Specific Plan Properties* (Helm Biological Consulting, 2008b)
- *Elverta Specific Plan Rare Plant Survey* (ESA, 2008)

Existing vegetation types within the project site were derived from these data sources in addition to field investigations. Field conditions were verified by ESA biologists in 2008 and subsequently mapped. Field conditions were re-verified by Barnett Environmental in 2012 (**Figure 3.4-1** and **Table 3.4-1**).

TABLE 3.4-1
HABITAT TYPES WITHIN PROJECT SITE

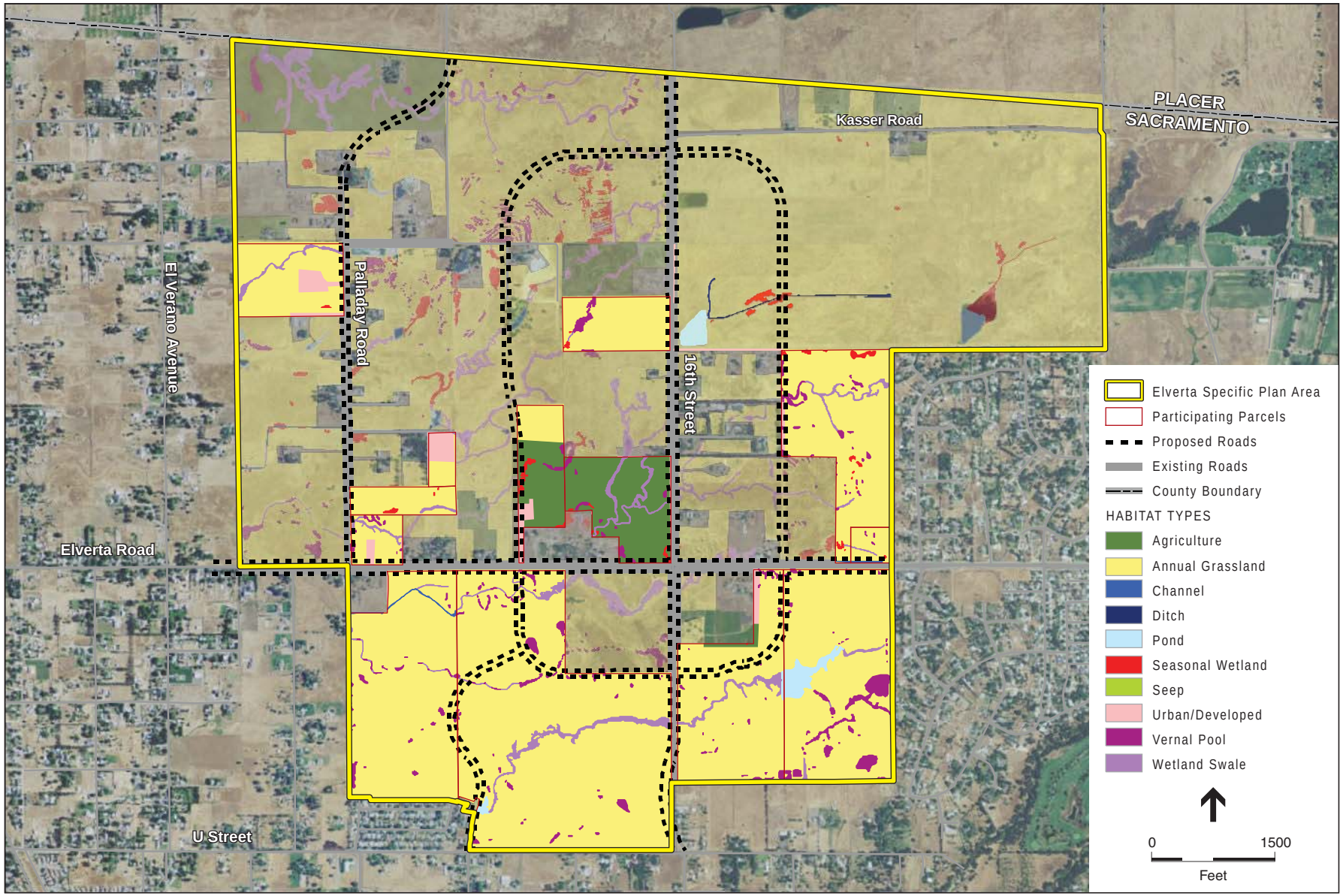
Habitat Type	Acres[1]	Percent Composition
Annual Grassland	1,354.12	77.6%
Agriculture	132.19	7.6%
Urban/Developed	170.15	9.7%
Drainage Ditch (Riverine)	1.37	<0.1%
Lake / Pond (Lacustrine)	14.00	0.8%
Seasonal Wetland	13.07	0.7%
Stream Channel (Riverine)	0.61	<0.1%
Vernal Pool	20.50	1.2%
Wetland Swale	38.59	2.2%
Total	**1,744.60**	**100%**

1. All acres approximate.

SOURCE: ESA, 2011; Barnett Environmental 2012.

Annual Grassland / California Annual Grassland Series

The annual grassland habitat type makes up the majority (over 77 percent) of the project site. Like most habitats in the project site, annual grasslands been modified by past land uses, including livestock grazing, dumping and crop cultivation. This vegetation type is dominated by non-native annual grasses and weedy annual and perennial forbs, primarily of Mediterranean origin, that have replaced native perennial grasslands, scrub and woodland as a result of human disturbance. On the project site, non-native annual grassland surrounds vernal pool complexes, providing an important upland element that may be used for species movement and dispersal between pools.



SOURCE: NAIP, 2009; ESRI, 2009; RCH Group, 2010; and ESA, 2012

Elverta Specific Plan EIS . 207431

Figure 3.4-1
Habitat Types within the Project Site

Common grass species that have been documented within the project site include slender wild oat (*Avena barbata*), ripgut brome (*Bromus diandrus*), soft chess (*Bromus hordeaceus*), and Italian ryegrass (*Lolium multiflorum*). Native wildflowers documented in the project site include dwarf brodiaea (*Brodiaea terrestris*), Fremont's goldfields (*Lasthenia fremontii*), miniature lupine (*Lupinus bicolor*), vinegar weed (*Trichostema lanceolatum*), white-tipped clover (*Trifolium variegatum*), and white hyacinth (*Triteleia hyacinthina*). Invasive plants documented in the project site include yellow starthistle (*Centaurea solstitialis*), bull thistle (*Cirsium vulgare*), medusahead grass (*Taeniatherum caput-medusae*), Mediterranean barley (*Hordeum marinum* ssp. *gussonianum*), Pacific bentgrass (*Agrostis avenacea*), and mannagrass (*Glyceria declinata*).

Agricultural

The project site supports cultivation of several types of agricultural crops. Cultivated lands provide minimal habitat for native plant species, although natural vegetation can occur along field edges and artificial water features such as ditches and stock ponds. Open and cultivated fields provide over-wintering foraging opportunities for many species of waterfowl, shorebirds, and raptors. Migratory waterfowl and shorebirds depend on waste rice and corn that remains after harvest, while deer often forage in alfalfa and grain fields.

Urban / Developed

Within the project site, urban habitats include roadways, buildings, and areas adjacent to residences, barns, horse paddocks, and corrals. Landscape trees and other tree species that occur in these areas include black walnut (*Juglans nigra*), black locust (*Robinia pseudoacacia*), valley oak (*Quercus lobata*), blue oak (*Q. douglasii*), willow (*Salix* sp.), cottonwood (*Populus* spp.), eucalyptus (*Eucalyptus* sp.), fig (*Ficus carica*) and a variety of ornamental pine (*Pinus* spp.) and fruit trees (ESA, 2008).

Urban or developed habitats are those dominated by plant species introduced by humans and established or maintained by human disturbances or activities (Holland and Keil, 1990). Some are entirely artificial, such as areas influenced by urban landscaping or plantings. On such sites, the native vegetation has typically been removed by clearing in preparation for landscaping or development. Cleared areas that are planted with or colonized by non-indigenous plant species can create distinct communities dominated by annual grasses and forbs, shrubs, or trees. Some of these communities are only perpetuated with direct human intervention such as irrigation, weed control, or application of fertilizers, while others are capable of becoming naturalized. In some situations, introduced non-indigenous species invade native habitats, altering the composition of the native understory or canopy, or both.

Drainage Ditches and Stream Channels (Riverine)

Various types of ditches and drainages are found on the project site, including agricultural ditches, roadside ditches, and storm drains. Watercourses within the property include four unnamed intermittent streams, one in the northwesterly portion of the area and three central to the project site. All onsite intermittent streams drain towards Steelhead Creek. Various small ephemeral tributaries also feed into the intermittent streams. These riverine communities are typically

characterized by a mixture of species commonly found in lacustrine, seasonal wetland, and freshwater marsh communities.

Common species found within these channels include water primrose (*Ludwigia peploides*), willow smartweed (*Persicaria lapathifolia*), and algae. Along channel edges and on banks common species include creeping spikerush (*Eleocharis macrostachya*), Bermuda grass (*Cynodon dactylon*), pennyroyal (*Mentha pulegium*), Italian ryegrass, Mediterranean barley (*Hordeum marinum gussoneanum*), and hyssop loosestrife. Species of wildlife common to this habitat type are similar to those found in lacustrine and seasonal wetlands habitats.

Ponds (Lacustrine)

There are several ponds within the project site that sustain ponding for long durations during the growing season, but eventually dry up in middle to late summer in most years. Two of the ponds were artificially created by excavation and berm construction activities in the past. The ponds support a mix of vernal pool, seasonal wetland, and emergent marsh plant species, which tend to segregate based upon depth and duration of ponding regimes. The lower (bottom) portions support emergent marsh habitat characterized by creeping spikerush, arrowhead *(Sagittaria sp.),* cattail *(Typha* spp*.),* least spikerush *(Eleocharis acicularis),* Fremont's cottonwood shrubs *(Populus fremontii),* and willows *(Salix* spp*.)*. The sides and perimeters of the ponds support a mix of seasonal wetland and vernal pool species including stalked popcorn flower (*Plagiobothrys stipitatus* var. *micranthus*), smooth goldfields (*Lasthenia glaberrima*), annual rabbit-foot grass (*Polypogon monspeliensis*), tall flatsedge (*Cyperus eragrostis*), and swamp timothy (*Crypsis schoenoides*) (Gibson & Skordal, 1999).

Seasonal Wetland

The seasonal wetland vegetation community has some similarities to the vernal pool habitat type (see below), however differences in topography, duration of inundation (shorter period), and/or plant species composition distinguishes seasonal wetland habitats from vernal pool habitats. Within the project site, this community occurs in shallow depressions within annual grassland (either due to natural topographic features or previous site disturbance) or in man-made drainage ditches and can support annual plant species typically associated with vernal pools, but generally in much lower numbers and/or with much less native species diversity than that of vernal pools. Within the project site, common plant species in the seasonal wetland community include creeping spikerush (*Eleocharis macrostachya*), irisleaf rush (*Juncus xiphioides*), and prostrate knotweed (*Polygonum aviculare*) but the dominant plant species include non-native plants such as Mediterranean barley, Italian ryegrass, and curly dock (*Rumex crispus*).

Vernal Pool

Vernal pools are ephemeral wetlands that form in shallow depressions underlain by an impervious or restrictive soil layer near the surface that impedes the percolation of water. The impervious layer is typically formed from claypan, cement-like hardpan, or bedrock. Vernal pools pond during the wet season and become dry in late spring or early summer. Germination and growth begin with winter rains, often continuing even when inundated. Evaporation of the pools often leaves concentric bands of vegetation. The topography of vernal pool grasslands is typically

undulating, with mima mounds and pools aggregating most commonly on old alluvial fans. The vernal pools within the project site have been classified as northern hardpan vernal pools (Holland 1986), which are formed on old, very acidic, iron-silica cemented hardpan soils.

Vernal pools in the study area range from shallow depth pools that sustain 1 to 6-inch ponding depths, medium depth pools that sustain 6 to 12-inch ponding depths, and deep pools which sustain ponding depths of 12 to 16 inches or more (Gibson & Skordal, 1999).

The shallow vernal pools are characterized by perennial rye grass, Mediterranean barley, stalked popcorn flower, Fremont's goldfields, and purple hairgrass *(Deschampsia danthonioides)*. The medium depth vernal pools are characterized by coyote thistle *(Eryngium vaseyi),* smooth goldfields, stalked popcorn flower, wooly marbles *(Psilocarphus brevissimus),* Carter's buttercup *(Ranunculus alveolatus),* and bractless hedge-hyssop *(Gratiola ebracteata*). By contrast, the deeper vernal pools are characterized by creeping spikerush, smooth goldfields, annual rabbit-foot grass, and Carter's buttercup (Gibson & Skordal, 1999).

Wetland Swale

Wetland swales in the project site occur within linear depressions along sloping terrain; they transport seasonal surface flows and runoff. These areas sustain saturation and, to a lesser extent, inundation for long duration during a portion of the growing season. Wetland hydrology indicators observed in the field include location within a defined swale overlaying tight or hardpan soils, oxidized rhizopheres on live roots in the upper soil surface, and algae matting. Typical wetland swales in the study area are dominated by perennial rye grass and Mediterranean barley. Common wetland associates include coyote thistle (*Eryngium* spp.), toad rush *(Juncus bufonius),* annual rabbit-foot grass, and stalked popcorn flower.

3.4.1.4 Sensitive Habitats

For the purpose of this EIS, sensitive habitats include a) areas of special concern to federal, state, or local agencies, b) areas regulated under Section 404 of the federal Clean Water Act, and c) areas protected under state and local regulations and policies. Federally designated critical habitat for species listed under the Federal Endangered Species Act (FESA) is discussed in Section 3.4.1.6 below. Habitat types on the project site that would be considered sensitive by regulatory agencies include vernal pools and other seasonal wetlands.

In addition, the Sacramento County General Plan provides tree protection policies for non-oak native trees along riparian areas if used by Swainson's Hawk, as well as landmark and native oak trees measuring a minimum of 6 inches in diameter or 10 inches aggregate for multi-trunk trees at 4.5 feet above ground. There are scattered oaks throughout the project site.

3.4.1.5 Wildlife

The project site provides nesting and foraging habitat for common wildlife species. Species observed on the site include western meadowlark *(Sturnella neglecta),* ring-necked pheasant *(Phasianus calchicus),* white-crowned sparrow *(Zanatrichia leucaphrys),* mourning dove *(Zenaida macraura),*

and house sparrow *(Passer domesticus)*. Black phoebes *(Sayarnis nigricans),* great egrets *(Ardea alba),* cattle egrets *(Bubulcus ibis),* Canada geese *(Branta canadensis),* and mallards *(Anas platyrhynchas)* were also observed in a stock pond/marsh area. Red-tailed hawks, red-shouldered hawks, American kestrels, and great horned owl have been observed nesting within the project site and within the vicinity. Turkey vultures have been observed foraging and roosting within the project area (Sacramento County, 2007).

3.4.1.6 Wildlife Corridors

Wildlife corridors refer to established migration routes commonly used by resident and migratory species for passage from one location to another. Maintaining the continuity of established wildlife corridors is important to a) sustain species with specific foraging requirements, b) preserve a species' distribution potential, and c) retain diversity among many wildlife populations. Habitat loss, fragmentation, and degradation resulting from a change in land use or habitat conversion can alter the use and viability of wildlife movement corridors. According to Beier and Loe (1992), wildlife habitat corridors should fulfill several functions. They should maintain connectivity for daily movement, travel, mate-seeking, and migration; plant propagation; genetic interchange; population movement in response to environmental change or natural disaster; and recolonization of habitats subject to local extirpation.

The project site does not provide any riparian corridors or other continuous movement corridor which might provide wildlife species with appropriate protected habitat for migration. The project site has been used, historically, for agricultural purposes and is regularly disturbed through human practices such as active farming or ranching. In addition, much of the surrounding land use is developed or has been converted for agricultural use or residential housing. Based on the surrounding land use and lack of valuable habitat onsite, the project site does not function as a wildlife movement corridor or contain established migratory routes.

3.4.1.7 Potentially Affected Species and Habitats

Methodology

A list of special-status plant and wildlife species that have the potential to occur within the vicinity of the project site was compiled based on a background information search for previously documented special-status species within the project site vicinity. The California Natural Diversity Database (CNDDB) Rarefind program (CDFG, 2011) and the U.S. Fish and Wildlife Service (USFWS) online list (USFWS, 2011) were queried for the *Rio Linda, California* 7.5-minute quadrangle (**Appendix D**). Project site habitats were also evaluated for their suitability to support special status species. As noted previously, this includes several specific studies and protocol-level surveys. The results of these assessments are included in **Table 3.4-2**. Conclusions regarding habitat suitability and species occurrence are based on previous survey results, existing literature and databases described previously. Potentially affected species are shown in **bold**.

Species Surveys

As described in **Section 3.4.1.3**, several general biological and some species-specific surveys were conducted on 1,158 acres (approximately two-thirds) of the Elverta Specific Plan area between 1999 and 2008. Habitat for species on the remaining portions of the project site was

identified using aerial photographs, observations from roadways and adjoining accessible properties, along with applicable information from electronic databases. The results of these surveys are included in **Table 3.4-2** where applicable.

Vernal Pool Habitat Surveys

As noted in **Table 3.4-1**, the project site contains approximately 13.07 acres of seasonal wetland, 20.50 acres of vernal pool, and 38.59 acres of wetland swale habitat. All of these habitat types may provide suitable habitat for vernal pool crustaceans, including vernal pool fairy shrimp and vernal pool tadpole shrimp. To better assess habitat suitability for these species on the project site, extensive field surveys, sampling, and mapping was conducted (Helm Biological Consulting, 2008a and 2008b). This assessment determined that the project site contains approximately 30.86 acres of suitable habitat for vernal pool invertebrate species, with most vernal pools and some seasonal wetlands and swales being identified as suitable (**Figure 3.4-2**). Habitat quality for these features ranges from occupied habitat to marginally suitable habitat.

Critical Habitat

The FESA (see Section 3.4.2.1 below) requires the federal government to designate critical habitat for any species it lists under the FESA. Critical habitat is defined as: (1) specific areas within the geographical area occupied by the species at the time of listing, if they contain physical or biological features essential to conservation, and those features may require special management considerations or protection; and (2) specific areas outside the geographical area occupied by the species if the agency determines that the area itself is essential for conservation. There is no designated critical habitat within the project site.

TABLE 3.4-2
LIST OF POTENTIALLY AFFECTED SPECIES

Species	Status Federal/ State/ CNPS	Suitable Habitat	Potential for Effect
FEDERALLY LISTED SPECIES			
Invertebrates			
Branchinecta lynchi **Vernal pool fairy shrimp**	FT/--/--	Occurs in vernal pools, seasonally ponded areas within vernal swales, rock outcrop ephemeral pools, playas and alkali flats from Shasta County through most of the length of the Central Valley to Tulare County. Pools are grass or mud bottomed, with clear to tea-colored water, and are often in basalt flow depression pools in grasslands	May effect. Suitable habitat is present in the project site and the species has been recorded from several vernal pools within the project site.
Desmocerus californicus dimorphus Valley elderberry longhorn beetle	FT/--/--	Breeds and forages exclusively on elderberry shrubs (*Sambucus mexicana*) typically associated with riparian forests, riparian woodlands, elderberry savannas, and other Central Valley habitats. Occurs only in the Central Valley of California. Prefers to lay eggs in elderberries 2–8 inches in diameter; some preference shown for "stressed" elderberries.	No effect. No suitable habitat within the project site.
Lepidurus packardi **Vernal pool tadpole shrimp**	FE/--/--	Occurs in vernal pools containing clear to highly turbid water.	May effect. Suitable habitat is present in the project site however the species was not observed during multiple-year, dry and wet season vernal pool branchiopod surveys within the project site.
Fish			
Hypomesus transpacificus Delta smelt	FT/ST/--	Open surface waters in the Sacramento/San Joaquin Delta. Seasonally in Suisun Bay, Carquinez Strait and San Pablo Bay. Found in Delta estuaries with dense aquatic vegetation and low occurrence of predators.	No effect. No suitable habitat within the project site.
Oncorhynchus mykiss Central Valley steelhead	FT/--/--	This evolutionary significant unit (ESU) enters the Sacramento and San Joaquin Rivers and their tributaries from July to May; spawning from December to April. Young move to rearing areas in and through the Sacramento and San Joaquin Rivers, Delta, and San Pablo and San Francisco Bays.	No effect. No suitable habitat within the project site.
Oncorhynchus tshawytscha Central Valley spring-run Chinook salmon	FT/ST/--	This ESU enters the Sacramento and San Joaquin Rivers and tributaries March to July; spawning from late August to early October. Young move to rearing areas in and through the Sacramento and San Joaquin Rivers, Delta, and San Pablo and San Francisco Bays.	No effect. No suitable habitat within the project site.
Oncorhynchus tshawytscha Sacramento River winter-run Chinook salmon	FE/SE/--	This ESU enters the Sacramento River December to May; spawning peaks May and June. Upstream movement occurs more quickly than in spring run population. Young move to rearing areas in and through the Sacramento River, Delta, and San Pablo and San Francisco.	No effect. No suitable habitat within the project site.

TABLE 3.4-2 (Continued)
LIST OF POTENTIALLY AFFECTED SPECIES

Species	Status Federal/ State/ CNPS	Suitable Habitat	Potential for Effect
Amphibians			
Ambystoma californiense California tiger salamander, central population	FT/CSC/--	Annual grassland and grassy understory of valley-foothill hardwood habitats in central and northern California. Needs underground refuges and vernal pools or other seasonal water sources.	Not likely to affect. Suitable habitat exists in the project site, although populations have not been documented in this area and there are no known occurrences in the project site vicinity.
Rana draytonii California red-legged frog	FT/CSC/--	Breeds in slow moving streams, ponds, and marshes with emergent vegetation and an absence or low occurrence of predators.	Not likely to affect. Limited suitable habitat exists in the project site, although this species is thought to be extirpated from the Central Valley floor. There are no known occurrences in the project site vicinity.
Reptiles			
Thamnophis gigas Giant garter snake	FT/CT/--	Found primarily in marshes, sloughs, drainage canals, and irrigation ditches, especially around rice fields, and occasionally in slow-moving creeks in California's interior.	No effect. No suitable habitat within the project site.
Birds			
***Aquila chrysaetos* Golden eagle**	BEPA/CFP/--	Forages in open terrain such as grasslands, deserts, savannahs, and early successional stages of forest and shrub habitats.	May effect. Suitable winter foraging habitat is present within the project site in the grasslands, however suitable nesting habitat is absent. The closest observation is approximately 13 miles southeast of the project site.
Critical Habitat			
Oncorynchus mykiss Central Valley steelhead	Critical Habitat		No effect. Critical Habitat does not occur near the project site.
STATE/LOCAL PROTECTED SPECIES			
Fish			
Archoplites interruptus Sacramento perch	--/CSC/--	Sloughs, slow-moving rivers, and lakes of the Central Valley. Emergent vegetation necessary for nurseries.	No effect. No suitable habitat within the project site.
Pogonichthys macrolepidotus Sacramento splittail	--/CSC/--	Currently known only from the Delta, Suisun Bay and associated marshes. Prefers slow-moving river sections and dead end sloughs. Requires flooded vegetation for spawning and juvenile foraging habitat. Spawning occurs over flooded vegetation in tidal freshwater marshes.	No effect. No suitable habitat within the project site.
Amphibians			
***Spea hammondii* Western spadefoot**	--/CSC/--	Occurs seasonally in grasslands, prairies, chaparral, and woodlands, in and around wet sites. Breeds in shallow, temporary pools formed by winter rains. Takes refuge in burrows.	May effect. Suitable habitat is present in the project site however the species was not found during field surveys conducted in suitable habitat.

TABLE 3.4-2 (Continued)
LIST OF POTENTIALLY AFFECTED SPECIES

Species	Status Federal/ State/ CNPS	Suitable Habitat	Potential for Effect
Reptiles			
Actinemys marmorata marmorata **Western pond turtle**	--/CSC/--	Ponds, marshes, rivers, streams, and irrigation ditches with aquatic vegetation. Requires basking sites and suitable upland habitat for egg-laying. Nest sites most often characterized as having gentle slopes (<15%) with little vegetation or sandy banks.	May effect. Suitable habitat is present in the project site however the species was not found during field surveys conducted in suitable habitat.
Birds			
Agelaius tricolor **Tricolored blackbird**	--/CSC/--	Nests in colonies within vicinity of fresh water/ marshy areas. Colonies prefer heavy growths of cattails and tules.	May effect. Suitable nesting habitat is present within the project site although there are no known occurrences in the project site. The nearest recorded occurrence is approximately 3 miles northwest of the project site.
Accipiter cooperii Cooper's hawk	--/CSC/--	Nests in dense stands of live oak, riparian forest, and similar dense stands, typically near a water source.	Not likely to affect. While observed soaring in project area during field surveys, suitable nesting habitat is absent from the project site.
Ammodramus savannarum **Grasshopper sparrow**	--/CSC/--	Prairie, cultivated grasslands, weedy fallow fields, and alfalfa fields. Prefer drier sparse sites, with open or bare ground for feeding. Nests are built on the ground, near clumps of tall grass or at the base of a shrub with overhanging vegetation.	May effect. Suitable habitat is present in the project site however the species was not found during field surveys conducted in suitable habitat. There are no known occurrences in the project site vicinity.
Athene cunicularia **Western burrowing owl**	--/CSC/--	Found in open grasslands with low vegetation, golf courses, and disturbed/ruderal habitat in urban areas.	May effect. Suitable nesting habitat is present within the project site, however species has not been observed during field surveys. The nearest recorded occurrence is approximately 2.5 miles northwest of the project site.
Buteo swansoni **Swainson's hawk**	--/CT/--	Forages in open and agricultural fields and nests in mature trees usually in riparian corridors.	May effect. Suitable foraging habitat is present within the project site, however nesting habitat is limited. Species has been observed foraging over the southern portion of the project site. No known nesting occurrences have been recorded within the project site. The nearest recorded occurrence is approximately 3.0 miles northwest of the project site.
Circus cyaneus **Northern harrier**	--/CSC/--	Forages in grasslands, freshwater marsh; nests in agricultural fields and other open habitat.	May effect. Suitable nesting habitat is present within the project site, although no known nesting occurrences have been recorded within the project site. The species has been observed foraging and perching throughout the project site.
Elanus leucurus **White-tailed kite**	--/CFP/--	Forages in open grasslands and agricultural fields and marshes. Nests in scattered mature trees within foraging habitat.	May effect. Suitable nesting and foraging habitat is present within the project site. The species has been observed foraging and roosting throughout the project site.
Eremophila alpestris actia California horned lark	--/CSC/--	Frequents open grasslands and other habitats with low, sparse vegetation.	Not likely to affect. May use project site habitats as a winter transient.
Lanius ludovicianus **Loggerhead shrike**	--/CSC/--	Frequents open habitats with sparse shrubs and trees, bare ground, and/or low herbaceous cover. Nests in hedgerows and shrubs.	May effect. Suitable nesting and foraging habitat is present within the project site. The species has been observed foraging and roosting throughout the project site.

TABLE 3.4-2 (Continued)
LIST OF POTENTIALLY AFFECTED SPECIES

Species	Status Federal/ State/ CNPS	Suitable Habitat	Potential for Effect
Progne subis Purple martin	--/CSC/--	Inhabits woodlands, low elevation coniferous forests of Douglas fir, ponderosa pine, and Monterey pine. Nests in old woodpecker cavities mostly, also in human-made structures. Nests often located in tall, isolated trees/snags.	No effect. No suitable habitat within the project site.
Riparia riparia Bank swallow	--/ST/--	Banks of rivers, creeks, lakes, and seashores; nests in excavated dirt tunnels near the top of steep banks.	No effect. No suitable nesting habitat within the project site.
Mammals			
Taxidea taxus **American badger**	--/CSC/--	Found in dry, open grasslands, fields, and pastures.	May effect. Suitable habitat is present within the project site. The nearest recorded occurrence is approximately 11 miles south of the project site.
Plants			
Balsamorhiza macrolepis var. macrolepis Big-scale balsamroot	--/--/1B.2	Perennial herb found in chaparral, cismontane woodland, valley and foothill grassland habitats. Blooms March-June. Found at 295-5102 feet in elevation.	No effect. Limited suitable habitat exists in the project site and the project site is not within the elevation range of species.
Cordylanthus mollis ssp. hispidus Hispid bird's-beak	--/--/1B.1	Annual herb found in meadows, seeps, playas, valley and foothill grasslands. Blooms June-September. Found below 508 feet in elevation.	No effect. No suitable habitat within the project site.
Downingia pusilla **Dwarf downingia**	--/--/2.2	Annual herb in the *Campanulaceae* family. Prefers lake margins, vernal pools and wet places sometimes playas and grasslands in mesic soils.	May effect. One population recorded on project site in 2000. Subsequent surveys failed to detect this occurrence. There are 9 previously recorded occurrences within 5 miles of the project site.
Gratiola heterosepala **Boggs Lake hedge-hyssop**	--/CE/1B.2	Annual herb found along the margins of marshes and swamps and in vernal pools with clay soil. Blooms April-August. Elevation: 30 to 7,800 ft.	May effect. Suitable habitat is present within the project site. This species has not been observed with the project site since 2000.
Hibiscus lasiocarpos **var.** ***occidentalis*** **Woolly rose-mallow**	--/--/2.2	Perennial emergent herb found in freshwater marshes and swamps. Blooms June-September. Found below 394 feet in elevation.	May effect. Suitable habitat is present within the project site in the stock ponds and marshes, however species was not found during plant surveys.
Juncus leiospermus **var.** ***ahartii*** **Ahart's dwarf rush**	--/--/1B.2	Annual herb found along vernal pool margins and vernal swales. Blooms March-May. Elevation: 100 to 750 ft.	May effect. Suitable habitat is present within the project site, and the species has been recorded from several vernal pools within the project site, although more recent surveys have failed to detect its presence.
Juncus leiospermus var. *leiospermus* Red Bluff dwarf rush	--/--/1B.1	Annual herb found in cismontane woodland, meadows, seeps, valley and foothill grasslands, vernal pools. Blooms March – May. Found at 115 to 3346 feet in elevation.	No effect. Suitable habitat is present within the project site however species has not been observed during field surveys and project site is not within the elevation range of species.
Legenere limosa **Legenere**	--/--/1B.1	Annual herb found in vernal pools. Blooms April-June. Elevation: 0 to 2,900 ft.	May effect. Suitable habitat is present within the project site however species has not been observed during field surveys.

TABLE 3.4-2 (Continued)
LIST OF POTENTIALLY AFFECTED SPECIES

Species	Status Federal/ State/ CNPS	Suitable Habitat	Potential for Effect
Navarretia myersii ssp. myersii **Pincushion navarretia**	--/--/1B.1	A dicot in the family *Polemoniaceae*, is an annual herb that is native to California and is endemic to California. This species is found in vernal pools that are often acidic. It is known from fewer than twenty occurrences. Blooms May. Elevation: 60 to 1,000 ft.	May effect. Suitable habitat is present within vernal pools however species has not been observed during field surveys.
Sagittaria sanfordii **Sanford's arrowhead**	--/--/1B.2	Perennial, rhizomatous, emergent herb found in marshes, swamps, and assorted shallow freshwater habitats. Blooms: May-October. Elevation: 0 to 2,000 ft.	May effect. Suitable habitat is present within the project site and species has been documented on project site by field surveys in 2008.
Natural Communities			
Northern Claypan Vernal Pool	Natural Community		May effect. Natural community occurs within project site.
Northern Hardpan Vernal Pool	Natural Community		May effect. Natural community occurs within project site.

STATUS CODES:

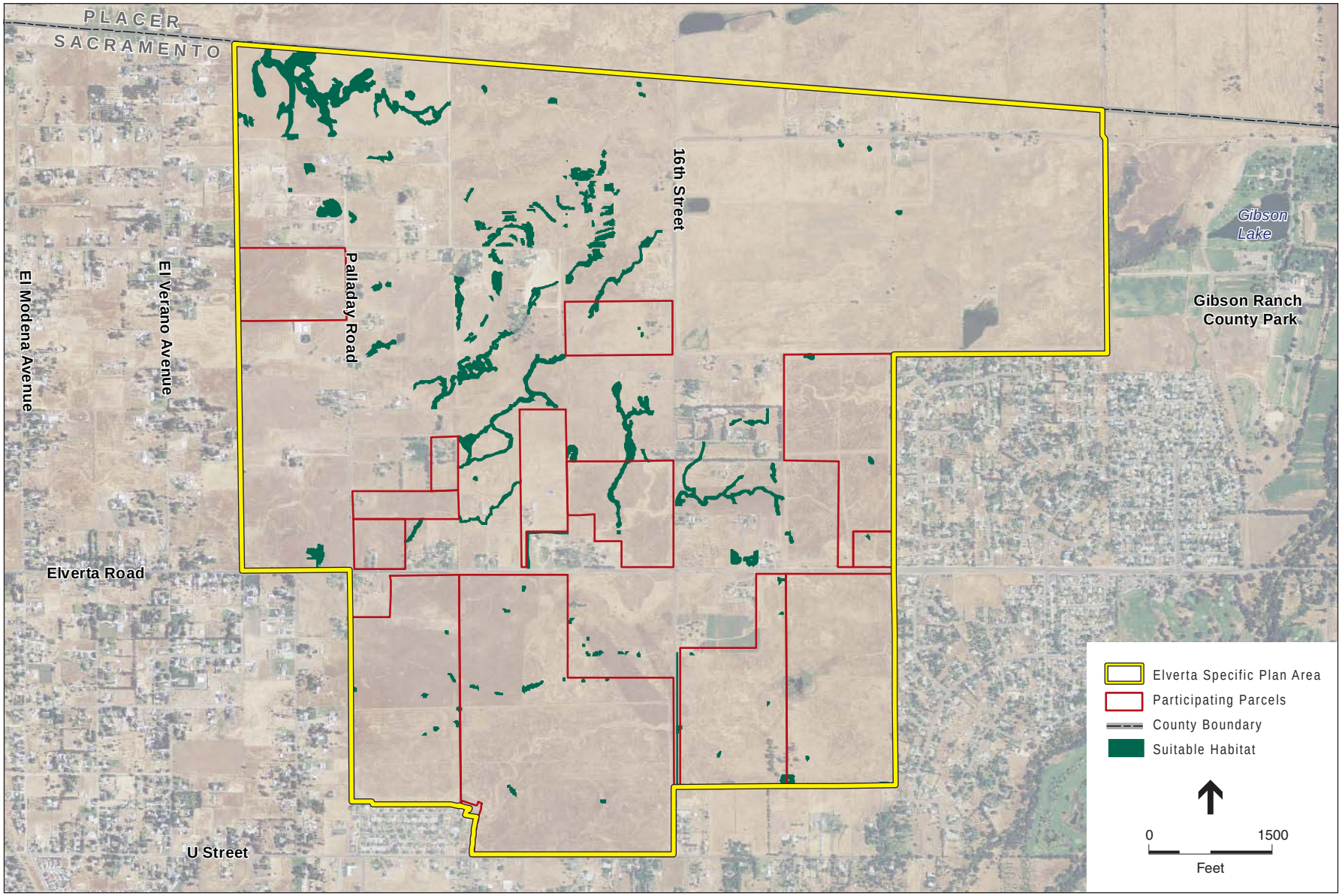
Federal
FE = Endangered
FT = Threatened
FC = Candidate
BEPA = Bald Eagle Protection Act

State
CE = Endangered
CT = Threatened
CR = Rare
CFP = Fully Protected
CSC = (CA) Department of Fish and Game Special Concern species

California Native Plant Society
List 1B = Plants rare, threatened, or endangered in California and elsewhere
List 2 = Plants rare, threatened, or endangered in California, but more common elsewhere
List 3 = Plants about which we need more information--a review list
List 4 = Plants of limited distribution--a watch list

0.1 = Seriously endangered in California
0.2 = Fairly endangered in California
0.3 = Not very endangered in California

SOURCE: California Natural Diversity Database (2010), USFWS (2011)



SOURCE: ESRI, 2009; NAIP, 2009; RCH Group, 2010; and ESA, 2012

Elverta Specific Plan EIS . 207431

Figure 3.4-2

Suitable Vernal Pool Crustacean Habitat

Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon

The *Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon* (USFWS, 2005) was released by USFWS on December 15, 2005. This plan features 33 species of plants and animals that occur exclusively or primarily within vernal pool ecosystems, including the federally listed vernal pool fairy shrimp and tadpole shrimp. The plan outlines recovery priorities and provides goals, objectives, strategies, and criteria for recovery. One of the overall objectives of the recovery plan is to promote natural ecosystem processes and functions by protecting and conserving intact vernal pools and vernal pool complexes. Habitat protection under the recovery plan includes the protection of the topographic, geographic, and edaphic features that support hydrologically interconnected systems of vernal pools, swales, and other seasonal wetlands within an upland matrix that together form hydrologically and ecologically functional vernal pool complexes.

The project site is within the Southeastern Sacramento Valley vernal pool region identified in the recovery plan, however the site is not within a core area. Core areas are the specific sites USFWS has deemed necessary to recover vernal pool species that are federally listed as endangered and threatened, based on the premise that these areas represent viable populations or will contribute to habitat connectivity and therefore increase opportunities for dispersal and genetic exchange. Recovery efforts are to be focused on the core areas within each vernal pool region.

Federally-Listed Species

Federally-listed species are plants and animals that are legally protected under FESA and include the following:

- Plants or animals listed or proposed for listing as threatened or endangered under FESA (50 Code of Federal Regulations [CFR] 17.12 [listed plants], 17.11 [listed animals] and various notices in the FR [proposed species]).
- Plants or animals that are candidates for possible future listing as threatened or endangered under FESA (61 FR 40, February 28, 1996).

Based on a review of special-status fish, wildlife and plant species in the *Rio Linda* 7.5-minute quadrangles (USFWS, 2011), a total of three federally listed and protected species have the potential to occur within the project site or surrounding area. Of these, one is known to occur within the project site (vernal pool fairy shrimp). Federally listed and protected species that may be affected by the proposed alternatives include:

Listed Species

- vernal pool fairy shrimp (*Branchinecta lynchi*), Threatened
- vernal pool tadpole shrimp (*Lepidurus packardi*), Endangered

Protected Species

- Golden eagle (*Aquila chrysaetos*), Protected under the Bald Eagle Protection Act

Vernal Pool Fairy Shrimp

Vernal pool fairy shrimp are small, aquatic crustaceans. They feed on algae, bacteria, protozoa, rotifers, and bits of detritus (USFWS, 2010a). Vernal pool fairy shrimp are found in a variety of vernal pool habitats, ranging from small, clear, sandstone rock pools to large, turbid, alkaline,

grassland valley floor pools. Most commonly they occur in pools in grass or mud bottomed swales, or basalt flow depression pools in unplowed grasslands (USFWS, 2010a).

The species is known to occupy a wide range of vernal pool types, thus its historic distribution likely coincided with the historic distribution of Central Valley, southern California, and southern Oregon vernal pools. In California, current known populations extend from Shasta County through most of the Central Valley to Tulare County. They range in coastal valleys from northern Solano County to the Carrizo Plain in San Luis Obispo County. A few additional isolated populations exist in southern California, including locations in Los Angeles, Santa Barbara, and Ventura Counties. Although vernal pool fairy shrimp are distributed more widely than other listed vernal pool species, they are generally uncommon throughout their range and are rarely abundant where they are found (USFWS, 2005).

Vernal pool habitat is present within the project site, and vernal pool fairy shrimp have been recorded from several vernal pools within the project site (Helm Biological Consulting, 2008a and 2008b).

Vernal Pool Tadpole Shrimp

Vernal pool tadpole shrimp are small, aquatic crustaceans. They feed on living organisms such as fairy shrimp and organic detritus (USFWS, 2010a), and can be identified by the large, shield-like carapace that covers the anterior half of their bodies. Compared to other vernal pool crustaceans the vernal pool tadpole shrimp has a long life span, maturing at a minimum of 25 days and taking an average of 54 days to reproduce. Vernal pool tadpole shrimp are found in a variety of vernal pool types, ranging from clear to highly turbid water, temperatures from 50 to 84 degrees Fahrenheit, and sizes from small to very large (USFWS, 2010a). They have been found in a variety of geologic formations and soil types; however, the majority have been found on High Terrace landforms and in Redding and Corning soils (USFWS, 2005).

This species probably historically occurred wherever appropriate vernal pool habitat existed throughout the Central Valley and Central Coast regions (USFWS, 2005). Currently, this species is known to occur within the Central Valley from east of Redding in Shasta County to Merced County, with isolated occurrences in Fresno, Kings, and Tulare Counties. In the Central Coast Region they are known from private land in Alameda County and San Francisco National Wildlife Refuge (USFWS, 2005). There are several occurrences recorded in the CNDDB scattered through the Central Valley from Shasta to northwestern Tulare County (CDFG, 2010).

Vernal pool habitat is present within the project site; however vernal pool tadpole shrimp have not been recorded within the project site during multiple-year, dry and wet season vernal pool branchiopod surveys (Helm Biological Consulting, 2008a and 2008b).

Golden Eagle

The golden eagle is an uncommon, permanent resident and migrant throughout California (except in the center of the Central Valley where it is a winter visitor). Golden eagles nest in open areas on cliffs and in large trees, often constructing multiple nests in one breeding territory (Zeiner et al., 1988–1990). They forage in open terrain such as grasslands, deserts, savannahs, and early successional stages of forest and shrub habitats (Zeiner et al., 1988–1990).

The grassland habitat within the project site could provide potential winter foraging habitat; however, suitable nesting habitat is absent.

State and Local Special-Status Species

State and local special-status species are plants and animals that are legally protected under the California Endangered Species Act (CESA) or other state or local regulations and species that are considered sufficiently rare by the scientific community to qualify for such listing. These species include the following categories:

- Plants or animals listed or proposed for listing by the State of California as threatened or endangered under the CESA (14 California Code of Regulations [CCR] 670.5);
- Plants listed as rare or endangered under the California Native Plant Protection Act (California Fish and Game Code, Section 1900 et seq.);
- Plants that meet the definitions of rare and endangered under the California Environmental Quality Act (CEQA). CEQA Section 15380 provides that a plant or animal species may be treated as "rare or endangered" even if not on one of the official lists (State CEQA Guidelines, Section 15380);
- Plants considered under the California Native Plant Society (CNPS) to be "rare, threatened or endangered in California" (Lists 1A, 1B, and 2 in CNPS, 2010);
- Animal species of special concern to CDFG; and
- Animals fully protected in California (California Fish and Game Code, Sections 3511 [birds], 4700 [mammals], and 5050 [reptiles and amphibians]).

Based upon the CNDDB database search for special-status species as well as an analysis of habitat suitability within the project site, ESA identified 15 state and local special-status species that have the potential to occur within and/or adjacent to the project site.

Western Spadefoot

Western spadefoot are a CDFG species of concern. Western spadefoot are toads that spend most of their lives (8 to 9 months per year) underground in subterranean dormancy. While underground they enter a state of torpor. They typically emerge between January and May to breed and forage, with the time of emergence dependent on rainfall and temperature. During their breeding season, they are typically found within several meters of temporary water sources such as vernal pools or pools in ephemeral streams (Jennings and Hayes, 1994; Stebbins, 2003; USFWS, 2005; Zeiner et al., 1988-1990).

Western spadefoot prefer areas with open grassland vegetation where soil is sandy or gravelly, at elevations between sea level and 4,500 feet; however, they are most commonly found below 3,000 feet. While western spadefoot are mostly terrestrial, using uplands for aestivation, foraging, and dispersal, adjacent temporary pools or drainages that fill with winter and spring rains are used for breeding (Stebbins, 2003; USFWS, 2005; Zeiner et al., 1988-1990). Western spadefoot have also been documented in most vernal pool habitat types. Vernal pools or other temporary wetlands may be ideal for breeding because of the absence or reduced abundance of predators, both native and non-native, many which require permanent sources of water (USFWS, 2005). Western spadefoot

have been extirpated from most of the southern California lowlands and many historic locations in the Central Valley. Abundance has seriously declined in the Sacramento and eastern San Joaquin Valleys, with populations in the Coast Ranges suffering less drastic declines (USFWS, 2005).

Suitable habitat for the western spadefoot is present within the project site, however this species has not been recorded within the project site.

Western Pond Turtle

The western pond turtle is a CDFG species of concern. This aquatic turtle inhabits ponds, marshes, rivers, streams, and irrigation ditches with aquatic vegetation, and requires areas with suitable basking sites and upland habitat for egg-laying. One to two clutches of 3 to 11 eggs are laid from June through August. Threats to this species include alteration, loss, and fragmentation of habitat as a result of urban and agricultural development.

Although this species has not been observed on the project site, suitable habitat for this species (open water habitats such as ponds) is present.

Tricolored Blackbird

Tricolored blackbirds are a CDFG species of concern. Tricolored blackbirds are a colonial species that nests in dense vegetation in and around freshwater wetlands. They are opportunistic foragers, during the breeding season consuming mostly small animal material, such as insects while in the non-breeding season consuming seeds and cultivated grain (Hamilton, 2004; Zeiner et al., 1988-1990). Breeding season is usually mid-April to late-July, but breeding has been reported as late as November (Hamilton, 2004).

During breeding, tricolored blackbirds require freshwater wetland areas large enough to support colonies of 50 pairs or more. They prefer freshwater emergent wetlands with tall, dense cattails or tules for breeding, but will also breed in thickets of willow, blackberry, wild rose, or tall herbs. During the non-breeding season flocks are highly mobile and forage in grasslands, croplands, and wetlands (Zeiner et al., 1988-1990). Tricolored blackbirds are locally common throughout the Central Valley and coastal areas south of Sonoma County. Historically, they were restricted to California and northern Baja California, and generally were found in the valleys and areas with agricultural production (Zeiner et al., 1988-1990).

Suitable breeding habitat for the tricolored blackbird is present within the project site, and this species has been recorded adjacent to the project site (CNDDB, 2010).

Grasshopper Sparrow

Grasshopper sparrows are a CDFG species of concern. Grasshopper sparrows are a small-bodied, large-headed, flat-crowned and short-tailed grassland sparrow. It is the only sparrow with unstreaked breasts. Grasshopper sparrows forage primarily on grasshoppers, but other insects including bees, wasps, beetles, and caterpillars are also known prey items. The remainder of their diet is made up of seeds (Shuford and Gardali, 2008). In California grasshopper sparrows require dry, well-drained grasslands with patches of bare ground. Within the grasslands scattered, taller shrubs and annuals are used for perches. They breed in a variety of grassland habitats including native bunchgrass, wild rye, wet meadows with a variety of forbs, annual grasslands with

scattered shrubs, and sometimes in pastures (Shuford and Gardali, 2008). This species is a short to medium distance migrant that nests primarily in the eastern half of the United States and winters in the southern United States, Mexico, and Central America. Small breeding populations are scattered in the western states including California. In California breeding populations arrive on their breeding territories from March to mid May (Shuford and Gardali, 2008).

Suitable roosting and foraging habitat is available for this species in portions of the grassland habitat throughout the project site.

Western Burrowing Owl

Western burrowing owls are a CDFG species of concern. The burrowing owl is a small diurnal owl that nests underground in the burrows of small mammals, especially those of ground squirrels. Culverts and other human-made structures may also be suitable habitat for the burrowing owl. Often a burrowing owl will occupy several burrows in an area. In the Central Valley, the burrowing owl is a year-round resident of open spaces such as grasslands, agricultural fields, air fields, and levees. Vegetation must be very short or very sparse to be suitable habitat for burrowing owl. Breeding peaks from April to May, but can occur from March to August. The burrowing owl forages on insects and small mammals and will also consume reptiles, birds, and carrion (Zeiner et al., 1988-1990).

The open fields with little or no vegetation in the project site provide suitable foraging habitat for burrowing owls. Ground squirrel or other small mammal burrows in the project site provide nesting habitat for burrowing owl. There are numerous recorded occurrences of burrowing owl adjacent to the project site; however none have been observed within the project site.

Swainson's Hawk

The Swainson's hawk is a long-distance migrant species. The Central Valley population winters primarily in Mexico and arrives on their breeding grounds in the Central Valley in mid-March to early April. Nests are generally found in scattered trees or along riparian systems adjacent to agricultural fields or pastures, but the species will also nest in tall shrubs and trees in proximity to developments near foraging habitat. Prey species mainly include small mammals, reptiles, and insects. Egg-laying generally occurs in April and young hatch in May and June. Most young have fledged the nest by the end of July and are relatively independent of parental protection. However, fledged young remain with their parents until they migrate in the fall. Migration to the wintering grounds generally occurs around September. Some individuals or small groups may winter in California (Zeiner et al., 1988–1990).

Surveys have not detected active nest sites for this species, although it has been observed foraging in the project area (Sacramento County, 2007). The nearest known CNDDB nesting occurrence is approximately 3.0 miles northwest of the project site.

Northern Harrier

Northern harrier inhabits areas of tall, dense, grasses, moist or dry shrubs, and the edges of row crops for nesting, cover, and feeding. Common food items are voles, frogs, small reptiles, crustaceans, and insects. Nests are built on ground with shrubby vegetation.

This species has been observed foraging and perching in grasslands throughout most of the project site (Sacramento County, 2007). Nesting habitat is also present within the project site, but there are no recorded occurrences.

White-Tailed Kite

The white tailed kite is a year-round resident in central California. It typically nests in oak woodlands or trees, especially along marshes or river margins and may use any suitable tree or shrub that is of moderate height. Its nesting season may begin as early as February and extends into August. This raptor forages during the day for rodents—especially voles—in wet or dry grasslands and fields (Zeiner et al., 1988–1990). White-tailed kites forage characteristically by hovering over the location of a potential prey item.

White-tailed kites have been observed foraging and perching throughout most of the project site (Sacramento County, 2007). Suitable nesting habitat is available in scattered locations within the project site.

Loggerhead Shrike

This species is a common resident of open habitat throughout the Central Valley. Loggerhead shrikes breed mainly in shrublands or open woodlands with grass cover and areas of bare ground. They require tall shrubs or trees (also use fences or power lines) for hunting perches, territorial advertisement, and pair maintenance; open areas of short grasses, forbs, or bare ground for hunting; and large shrubs or trees for nest placement. They also need impaling sites for prey manipulation or storage, which can include sharp, thorny, or multistemmed plants and barbed-wire fences (Shuford and Gardali, 2008).

Loggerhead shrikes hunt by perching on appropriate substrates and scanning the area, taking prey primarily from the ground but occasionally in flight, and often impaling prey for easier manipulation or for storage for later consumption. The diet of loggerhead shrikes varies seasonally and includes arthropods (especially grasshoppers, crickets, beetles and caterpillars), reptiles, amphibians, small rodents, and birds (Shuford and Gardali, 2008).

The annual grasslands within the project site provide suitable foraging and breeding habitat for this species. Loggerhead shrikes have been observed perched on fence posts, snags, or overhead wires, and may nest in the area of the project site (Miriam Green Associates, 2004a).

American Badger

American badgers are carnivorous, eating fossorial rodents, reptiles, insects, earthworms, eggs, birds, and carrion. Their diet shifts in response to prey abundance. Badgers are active year-round, although they do experience periods of torpor during the winter (Zeiner et al., 1988-1990). American badgers are present in most shrub, forest, and herbaceous habitats where friable soils are present. They are most abundant in drier, open areas including grasslands, savannahs, and mountain meadows near the timberline. Badgers dig burrows for cover; they frequently use old burrows, but some badgers will dig a new burrow each night during the summer (Williams, 1986; Zeiner et al., 1988-1990).

American badgers were historically residents of California, except in the humid coastal areas of Del Norte and northern Humboldt Counties (Williams, 1986; Zeiner et al., 1988-1990). Currently, they survive in low numbers in the periphery of the Central Valley, adjacent lowlands of eastern Monterey, San Benito, and San Luis Obispo Counties, and coastal areas south of Mendocino County. They have been extirpated from much of southern California (Williams, 1986).

The open grassland habitat within the project site provides suitable habitat for the American badger; however the nearest CNDDB occurrence is approximately 11 miles south of the project site.

Dwarf Downingia

Dwarf downingia is a small annual herb in the bell-flower family (Campanulaceae) that blooms from March through May (CNPS, 2007). The range of this species extends from the southern Sacramento Valley through the northern and central San Joaquin Valley and east to Napa and Sonoma counties. Dwarf downingia is primarily associated with vernal pools, but has been known to grow in roadside ditches (Hickman, 1993).

This species has the potential to occur within vernal pools and along drainages within the study area. One population of dwarf downingia was found in a vernal pool during April 2000 surveys (Miriam Green Associates, 2000). The vernal pool was located west of 16th street, about halfway between Elverta Road and U Street. The vernal pool was highly degraded, appearing to have been historically graded or disked. This species was not observed on parcels surveyed in 2004 or 2008 (ESA, 2008).

Bogg's Lake Hedge-Hyssop

Bogg's Lake hedge-hyssop is a tiny annual herb in the figwort family (Scrophulariaceae) that blooms from April through August. Occurrences of this species range from the inner north Coast Range to the Sacramento Valley and central Sierra Nevada foothills to the Modoc Plateau. This species grows in shallow waters along the edges of lakes and vernal pools (Hickman, 1993; CNPS, 2010).

Suitable habitat for Bogg's Lake hedge-hyssop is present within the project site, although previous surveys on the project site have not detected its presence (ESA, 2008).

Woolly Rose-Mallow

Woolly rose-mallow is a perennial herb, which blooms from June through September. Its habitat type is freshwater marshes and swamps, moist freshwater-soaked riverbanks and low peat islands in sloughs at elevations below 394 feet (Hickman, 1993; CNPS, 2010).

Suitable habitat for woolly rose-mallow is present within the wetland areas throughout the project site, however it was not observed on any parcels surveyed. Additionally there are no previously recorded occurrences of this species within a five-mile radius of the project site (ESA, 2008).

Ahart's Dwarf Rush

Ahart's dwarf rush is a minute annual herb in the rush family (Juncaceae) that blooms from March through May. The range of this species extends from the eastern Sacramento Valley through the northeastern San Joaquin Valley. Ahart's dwarf rush is generally restricted to growing at the edges of vernal pools (Hickman, 1993; CNPS, 2010).

Suitable habitat for Ahart's dwarf rush is present within the project site, however previous survey have not detected its presence (ESA, 2008).

Legenere

Legenere is a diminutive annual herb in the bell-flower family that typically blooms from April through June. This species occurs in the southern portions of the northern Coast Range, southern Sacramento Valley, northern San Joaquin Valley, and the Santa Cruz mountains. This species generally grows in the lower-lying portions of vernal pools (Hickman, 1993; CNPS, 2010).

Suitable habitat for legenere is present within the project site, however this species has not been observed within the project site (ESA, 2008).

Pincushion Navarretia

Pincushion navarretia is a small annual herb in the phlox family (Polemoniaceae) that typically flowers in May (CNPS, 2007). The range of the species is limited to Placer, Sacramento, Amador, Calaveras, and Merced counties. It grows in vernal pools with clay soils.

This species has the potential to occur in vernal pools within the study area; however, there are no known CNDDB occurrences within the vicinity of the study area (CDFG, 2007). This species was not observed on parcels surveyed in 2008 (ESA, 2008).

Sanford's Arrowhead

Sanford's arrowhead is an emergent perennial herb in the water-plantain family (Alismataceae). The species has linear to ovate leaves that are three-angled, and it blooms from May through October. Sanford's arrowhead generally occurs in standing or slow-moving freshwater ponds, marshes, and ditches (Hickman, 1993; CNPS, 2010). Common associated species include smartweed (*Polygonum* spp.), water plantain (*Alisma triviale*), water primrose (*Ludwigia peploides*), broad-leaved cattail, and duckweed (*Lemna* sp.) (CDFG, 2010). The historic distribution of this species included Del Norte County, the Central Valley, and Ventura County, but the species has been mostly extirpated from the Central Valley (Hickman, 1993; CNPS, 2010).

Open water habitats (i.e. ponds) which occur in the project site provide suitable habitat for Sanford's arrowhead. An occurrence of this species was recorded in a large pond within the project site (ESA, 2008).

3.4.2 Regulatory Setting

The project site falls within the general geographic range of a number of "special-status" plants and wildlife. In this assessment, special-status species are those species that are federally listed as threatened or endangered, proposed for listing as threatened or endangered, or candidates for listing. Special-status species also includes those species considered by State or local resource agencies or conservation groups, such as CDFG and CNPS, as being rare or in decline. An endangered plant or wildlife species is one that is considered in danger of becoming extinct throughout all or a significant portion of its range. A threatened species is one that is likely to become endangered within the foreseeable future. Species that have been proposed for listing are in the process of

being listed. Candidate species are those for which the USFWS currently has enough information to support a proposal for listing but has not yet done so. Species on this list receive special attention from federal and state agencies during environmental review, but they are not otherwise protected under the FESA. Species have also been listed by the State of California as threatened, endangered or fully protected (from take), while CDFG has identified species of special concern (those species that may be rare or in decline). Finally, CNPS also maintains a list of plant species that may be rare, regionally unique, or in decline.

Federal

Federal Endangered Species Act

The FESA grants protection over species that are formally listed as threatened, endangered, or proposed. The primary protective requirement in the case of projects requiring federal permits, authorizations, or funding, is Section 7 of FESA, which requires federal lead agencies to consult (or "confer" in the case of proposed species or proposed critical habitat) with the USFWS (and National Oceanic Atmospheric Administration [NOAA] Fisheries where marine species may be affected) to ensure that their actions do not jeopardize the continued existence of federally listed species. In addition to Section 7 requirements, Section 9 of the FESA protects listed wildlife species from "take". Take is broadly defined as those activities that "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect [a protected species], or attempt to engage in any such conduct." An activity can be in violation of take prohibitions even if the activity is unintentional or accidental. Significant modification or degradation of occupied habitat for listed species, or activities that prevent or significantly impair essential behavioral patterns, including breeding, feeding, or sheltering, are also considered "take" under the FESA. Federal agencies may receive authorization for the incidental take of listed species under Section 7 through the issuance of a Biological Opinion from the USFWS and/or NOAA Fisheries. State, local, and private entities may receive incidental take authorization under an approved Habitat Conservation Plan (HCP). For this project, the USACE is the lead federal agency responsible for consultation with the USFWS under Section 7 of FESA.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) of 1918 makes it unlawful to take or attempt to take any migratory bird, any part, nest, or egg of any such bird except under the terms of a permit issued by the U. S. Department of the Interior. In total, 836 bird species are protected by the MBTA, 58 of which are currently legally hunted as game birds. A migratory bird is any species or family of birds that live, reproduce or migrate within or across international borders at some point during their annual life cycle.

The Bald Eagle Protection Act

The Bald Eagle Protection Act (16 U.S.C. 668-668c) prohibits anyone, without a permit issued by the Secretary of the Interior, from "taking" bald and golden eagles, including their parts, nests, or eggs. The Act defines "take" as "pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb." In addition to immediate impacts, this definition also covers impacts that result from human-induced alterations initiated around a previously used nest site during a time when eagles are not present, if, upon the eagle's return, such alterations agitate or bother an eagle to a

degree that interferes with or interrupts normal breeding, feeding, or sheltering habits, and causes injury, death or nest abandonment.

Executive Order 11312: Invasive Species

Executive Order 11312 directs all federal agencies to prevent and control introductions of invasive nonnative species in a cost-effective and environmentally sound manner to minimize their economic, ecological, and human health impacts. Executive Order 11312 established a national Invasive Species Council made up of federal agencies and departments and a supporting Invasive Species Advisory Committee composed of state, local and private entities. The Invasive Species Council and Advisory Committee oversee and facilitate implementation of the Executive Order, including preparation of a National Invasive Species Management Plan.

State

California Endangered Species Act

Pursuant to CESA and Section 2081 of the California Fish and Game Code, a permit from the CDFG is required for a project that could result in the take of a state-listed threatened or endangered species (i.e., species listed under CESA). Under CESA, the definition of "take" includes an activity that would directly or indirectly kill an individual of a species, but the state definition does not include "harm" or "harass," as the federal definition does. As a result, the threshold for take under the CESA is typically higher than that under the FESA. Under CESA, CDFG maintains a list of threatened species and endangered species (California Fish and Game Code 2070). The CDFG also maintains two additional lists: (1) a list of candidate species that are species CDFG has formally noticed as being under review for addition to either the list of endangered species or the list of threatened species; and (2) a list of "species of special concern;" these lists serve as "watch lists."

Consistent with the requirements of CESA, a state agency reviewing a project within its jurisdiction must determine whether any state-listed endangered or threatened species may be present in the project site and determine whether the proposed alternatives would have a potentially significant impact on such species.

California Fish and Game Code

The California Fish and Game Code protects a variety of species from take. Certain species are considered *fully protected*, meaning that the code explicitly prohibits all take of individuals of these species except for take permitted for scientific research. Section 5050 lists fully protected amphibians and reptiles, Section 5515 lists fully protected fish, Section 3511 lists fully protected birds, and Section 4700 lists fully protected mammals. It also is possible for a species to be protected under the California Fish and Game Code, but not fully protected.

Eggs and nests of all birds are protected under Section 3503, nesting birds (including raptors and passerines) under Sections 3503.5 and 3513, and birds of prey under Section 3503.5. Migratory nongame birds are protected under Section 3800 and other specified birds under Section 3505.

California Native Plant Protection Act

The California Native Plant Protection Act of 1977 (Fish and Game Code Sections 1900–1913) is intended to preserve, protect, and enhance endangered or rare native plants in California and gives the CDFG authority to designate state endangered, threatened, and rare plants and provides specific protection measures for identified populations. The Act also directs the California Fish and Game Commission to adopt regulations governing taking, possessing, propagation, and sale of any endangered or rare native plant.

Vascular plants listed as rare or endangered by CNPS (2010), but which have no designated status or protection under federal or state endangered species legislation, are defined as follows:

- **List 1A:** Plants Believed Extinct.
- **List 1B:** Plants Rare, Threatened, or Endangered in California and elsewhere.
- **List 2:** Plants Rare, Threatened, or Endangered in California, but more numerous elsewhere.
- **List 3:** Plants About Which More Information is Needed - A Review List.
- **List 4:** Plants of Limited Distribution - A Watch List.

In general, plants appearing on CNPS List 1 or 2 are considered to be rare by local standards and therefore are addressed within the document.

Local

Sacramento County Swainson's Hawk Ordinance

Sacramento County's Swainson's Hawk Ordinance establishes requirements and guidelines for the mitigation of Swainson's hawk foraging habitat within the unincorporated areas of the County. This ordinance applies to projects five acres or greater that are not within an approved Habitat Conservation Plan area and have been determined to result in a significant impact or significant cumulative impact to Swainson's hawk foraging habitat.

Sacramento County 2030 General Plan

The General Plan includes the following landmark and heritage tree protection policies, which were developed in order to preserve native oaks and other landmark trees including non-oak native tree species.

Policies

CO-138. Protect and preserve non-oak native trees along riparian areas if used by Swainson's Hawk, as well as landmark and native oak trees measuring a minimum of 6 inches in diameter or 10 inches aggregate for multi-trunk trees at 4.5 feet above ground.

CO-139. Native trees other than oaks, which cannot be protected through development, shall be replaced with in-kind species in accordance with established tree planting specifications, the combined diameter of which shall equal the combined diameter of the trees removed.

CO-140. For projects involving native oak woodlands, oak savannah or mixed riparian areas, ensure mitigation through either of the following methods:

- An adopted habitat conservation plan.
- Ensure no net loss of canopy area through a combination of the following: (1) preserving the main, central portions of consolidated and isolated groves constituting the existing canopy and (2) provide an area on-site to mitigate any canopy lost. Native oak mitigation area must be a contiguous area on-site which is equal to the size of canopy area lost and shall be adjacent to existing oak canopy to ensure opportunities for regeneration.
- Removal of native oaks shall be compensated with native oak species with a minimum of a one to one dbh replacement.
- A provision for a comparable on-site area for the propagation of oak trees may substitute for replacement tree planting requirements at the discretion of the County Tree Coordinator when removal of a mature oak tree is necessary.
- If the project site is not capable of supporting all the required replacement trees, a sum equivalent to the replacement cost of the number of trees that cannot be accommodated may be paid to the County's Tree Preservation Fund or another appropriate tree preservation fund.
- If on-site mitigation is not possible given site limitation, off-site mitigation may be considered. Such a mitigation area must meet all of the following criteria to preserve, enhance, and maintain a natural woodland habitat in perpetuity, preferably by transfer of title to an appropriate public entity. Protected woodland habitat could be used as a suitable site for replacement tree plantings required by ordinances or other mitigations.
    - Equal or greater in area to the total area that is included within a radius of 30 feet of the dripline of all trees to be removed;
    - Adjacent to protected stream corridor or other preserved natural areas; o Supports a significant number of native broadleaf trees; and
    - Offers good potential for continued regeneration of an integrated woodland community.

CO-141. In 15 years the native oak canopy within on-site mitigation areas shall be 50 percent canopy coverage for valley oak and 30 percent canopy coverage for blue oak and other native oaks.

3.4.3 References

Beier, P. and S. Loe. 1992. *A Checklist for Evaluating Impacts to Wildlife Movement Corridors*. Wildlife Society Bulletin 20(4):434-440.

Beier, P. and R.F. Noss. 1998. Do Habitat Corridors Provide Connectivity? Conservation Biology 12(6):1241-1252. December.

California Department of Fish and Game (CDFG). 2010. California Natural Diversity Database (CNDDB) Rarefind computer program (Version 3.1.0). California Department of Fish and Game, Biogeographic Data Branch. Sacramento, CA. Commercial Version dated: July 3, 2010. Data will expire on November 9, 2010. Accessed November 9, 2010.

California Native Plant Society (CNPS). 2010. Inventory of Rare and Endangered Plants (online edition, v7-10d 11-02-10). California Native Plant Society, Sacramento, California. Accessed online November 9, 2010: http://www.cnps.org/inventory.

Davis[2] Consulting Earth Scientists, Inc. 2004. Elverta Specific Plan Wetlands Delineation, Sacramento County, CA APN 202-0070-015; 202-0080-005, 007, 010, 011, 038, 046, 050, 051; 203-0080-037. Prepared for the Hodgson Company. Sacramento, CA.

ESA. 2008. Elverta Specific Plan Rare Plant Survey. Sacramento, CA.

Foothill Associates. 2004. Wetland Delineation Report for the Countryside West ±137 acre site (Gibson Ranch). Prepared for River West. Sacramento, CA.

Foothill Associates. 2000a. Gibson Ranch Biological Assessment. Sacramento, CA.

Foothill Associates. 2000b. Gibson Ranch Tree Survey Data (October 2000). Sacramento, CA.

Gibson & Skordal. 1999. Jurisdictional Delineation for the Elverta Specific Plan Area, Sacramento, County, CA. Prepared for the Hodgson Company. Sacramento, CA.

Hamilton, W.J. 2004. Tricolored Blackbird (*Agelaius tricolor*). *In* The Riparian Bird Conservation Plan: a strategy for reversing the decline of riparian-associated birds in California. California Partners in Flight. Accessed online September 7, 2010: http://www.prbo.org/calpif/htmldocs/species/riparian/tricolored_blackbird.htm.

Helm Biological Consulting, LLC. 2008a. Wet season sampling for federally-listed branchiopods at the Elverta Specific Plan properties. Lincoln, CA.

Helm Biological Consulting, LLC. 2008b. Dry season sampling for federally-listed branchiopods at the Elverta Specific Plan properties. Lincoln, CA.

Hickman, James C (Ed.). 1993. The Jepson Manual. University of California Press, Berkeley, CA.

Holland, R.F. 1986. Preliminary descriptions of the terrestrial natural communities of California. State of California, Department of Fish and Game.

Holland, V. L. and D. J. Keil. 1990. California vegetation, 4th edition. El Corral Publications, San Luis Obispo, California.

Jennings, M. R., and M. P. Hayes. 1994. Amphibian and reptile species of special concern in California. Final Report to the California Department of Fish and Game, Inland Fisheries Division, Rancho Cordova, CA. 225 pp.

Miriam Green Associates. 2000. Results of Surveys for Special-Status Species in the Elverta Specific Plan Area – Final Report (August 2000). Sacramento, CA.

Miriam Green Associates. 2004a. Results of Surveys for Special-Status Species on the Northernmost River West Parcel Sacramento County, California – Preliminary Report (May 2004). Sacramento, CA.

Miriam Green Associates. 2004b. Results of Surveys for Special-Status Species on Six Parcels in the Elverta Specific Plan Area Sacramento County, California – Preliminary Report (April 2004). Sacramento, CA.

Mayer, K. E., and W.F. Laudenslayer, Jr. 1988. *A Guide to Wildlife Habitats of California*. State of California Resources Agency, California Department of Fish and Game. Sacramento, CA. Accessed online May 2008: http://www.dfg.ca.gov/whdab/html/wildlife_habitats.html.

Miles, S. R. and C. B. Goudey. 1997. *Ecological Subregions of California: Section and Subsection Descriptions*. USDA Forest Service, Pacific Southwest Region Publication R5-EM-TP-005. San Francisco, CA.

Sacramento County. 2007. Final Environmental Impact Report for Elverta Specific Plan and Associate Subdivision Map known as Countryside Equestrian Estates (Control Numbers: 99-SFB-GPB-CZB-AHS-0351 & 00-RZB-SDP-0442; State Clearinghouse Number: 2000092026). Sacramento, CA.

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

Shuford, W. D., and Gardali, T., editors. 2008. California Bird Species of Special Concern: A ranked assessment of species, subspecies, and distinct populations of birds of immediate conservation concern in California. Studies of Western Birds 1. Western Field Ornithologists, Camarillo, California, and California Department of Fish and Game, Sacramento.

Stebbins, R. C. 2003. A field guide to western reptiles and amphibians. Third edition, revised. Houghton Mifflin Company, Boston, MA

U.S. Fish and Wildlife Service (USFWS). 2005. Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon. Region 1. Portland, Oregon.

U.S. Fish and Wildlife Service (USFWS). 2010a. Endangered Species Accounts. Prepared by Endangered Species Division of the Sacramento Fish & Wildlife Office. Accessed online September 7, 2010: http://sacramento.fws.gov/es/spp_info.htm.

U.S. Fish and Wildlife Service (USFWS). 2011. Federal Endangered and Threatened Species that Occur in or may be Affected by Projects in the *Rio Linda, California* USGS 7.5-minute Topographic Quadrangles. Sacramento Fish and Wildlife Service, Endangered Species Division. Accessed online October 16, 2011 at: http://www.fws.gov/sacramento/es/spp_list.htm

Williams, D.F. 1986. Mammalian Species of Special Concern in California. Wildlife Management Division Administrative Report 86-1 (June 1986). California Department of Fish and Game. Sacramento, California.

Zeiner, D.C., W.F. Laudenslayer, and K.E. Mayer. 1988-1990. California's Wildlife. Vols I, II, and III. California Statewide Wildlife Habitat Relationships System. California Department of Fish and Game. Sacramento, California.

3.5 Aquatic Resources

This section identifies the aquatic resources and jurisdictional features that may be affected by the project. The assessment of existing conditions and analysis of potential effects is based upon previous jurisdictional delineations and wetland assessments. The general and specific profiles of aquatic resources contained in this section provide the environmental baseline by which direct, indirect, and cumulative environmental effects are identified and measured in **Chapter 4.0**. This section focuses upon wetlands and other waters of the U.S. that are regulated under Section 404 of the Clean Water Act.

3.5.1 Existing Setting

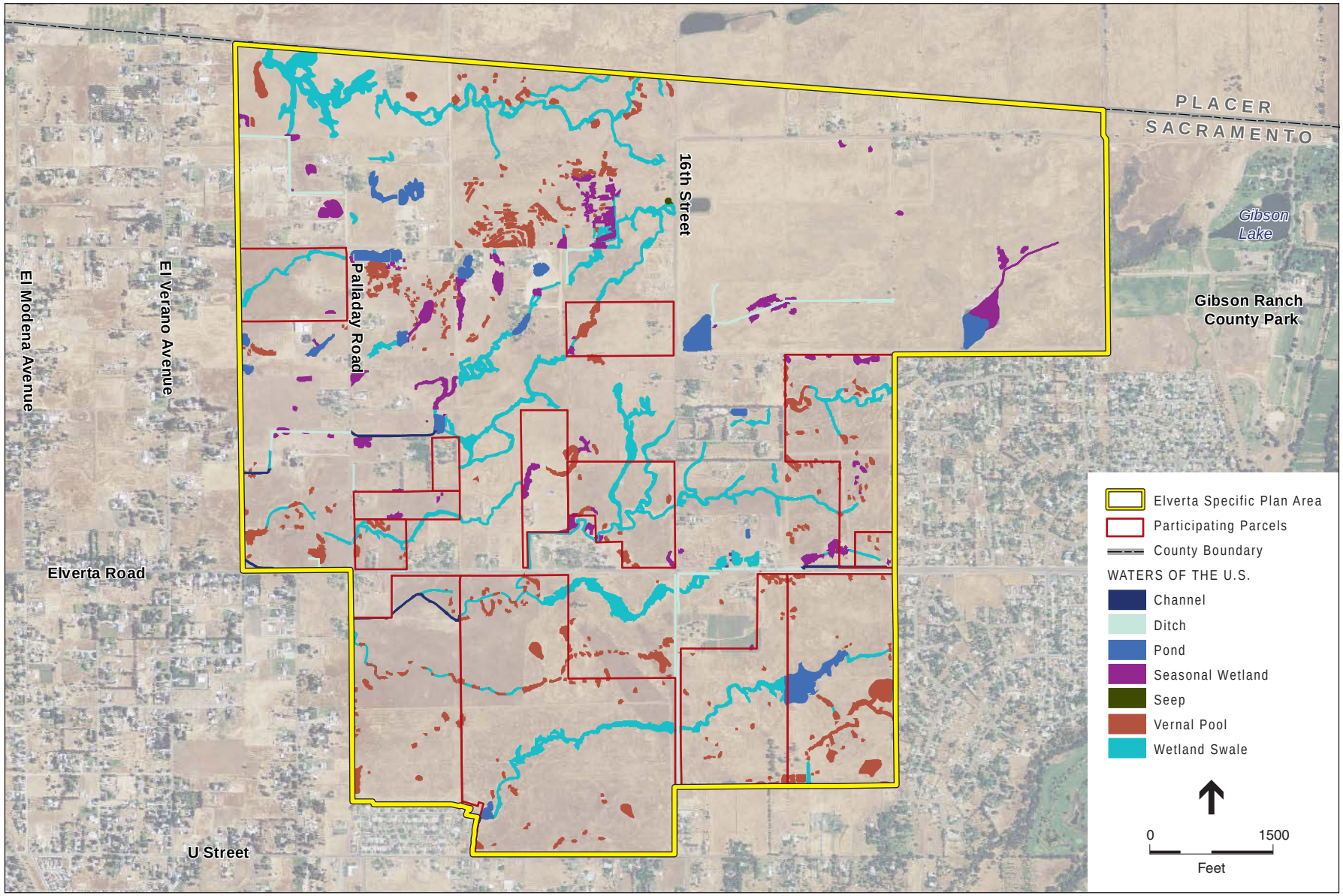
3.5.1.1 Delineation Methodology

Wetlands and other waters of the U.S. on the participating parcels within the project site were formally delineated in accordance with the methodology prescribed in the *U.S. Army Corps of Engineers Wetland Delineation Manual* (Environmental Laboratory, 1987). Participating parcels were delineated in 1999 and 2004, and subsequently updated and revised in 2006 and 2007, as compiled in the *Jurisdictional Delineation Elverta Specific Plan Area* (Gibson & Skordal, 2007). USACE verified wetland delineations are valid for 5 years, therefore the participating parcels had to be re-delineated and re-verified in 2012. Barnett Environmental completed the updated delineation in April 2012 and the USACE verified it in May 2012. This compilation of delineations includes updates and revisions based upon the following original studies for the project site:

- Gibson & Skordal. 1999. *Jurisdictional Delineation for the Elverta Specific Plan Area, Sacramento, County, CA*. August 1999 (revised December 1999) Prepared for The Hodgson Company.
- Foothill Associates. 2004. Wetland Delineation Report for the Countryside West ±137 acre site (Gibson Ranch). Prepared for River West. (April 30, 2004)
- Davis[2] Consulting Earth Scientists, Inc. 2004. Elverta Specific Plan Wetlands Delineation, Sacramento County, CA Parcel Numbers 202-0070-015; 202-0080-005, 007, 010, 011, 038, 046, 050, 051; 203-0080-037. Prepared for the Hodgson Company. March 2, 2004.

Features on participating parcels were delineated and verified by the USACE individually. Non-participating parcels were delineated based on previous and updated surveys and through remote sensing techniques (primarily through interpretation of aerial photography) by Gibson & Skordal and ESA biologists.

As shown in **Table 3.5-1**, a total of 88.21 acres of potentially jurisdictional features occur on the project site. Of these acres, the USACE has verified a total of 23.01 acres of wetlands and 4.56 acres of other waters of the U.S. on the participating parcels. Delineated features include seasonal wetlands, vernal pools, wetland swales, and open water (drainage ditch, pond, and stream channel). The biological elements of these features are described in **Section 3.4**. **Table 3.5-2** summarizes the features on the participating parcels that have been verified by the USACE. **Figure 3.5-1** shows the location of all wetlands and other waters of the U.S. within the project site.



SOURCE: Bing Maps, 2009; ESRI, 2009; RCH Group, 2010; and ESA, 2012

Elverta Specific Plan EIS . 207431

Figure 3.5-1

Potentially Jurisdictional Waters of the U.S.

TABLE 3.5-1
WETLAND FEATURES WITHIN THE PROJECT SITE

Type of Wetland Feature	Acres[1]
Wetlands	
Seasonal Wetland	13.07
Wetland Seep	0.07
Vernal Pool	20.50
Wetland Swale	38.59
Total area of wetlands:	**72.23**
Other Waters	
Drainage Ditch	1.37
Pond	14.00
Stream Channel	0.61
Total area of other waters:	**15.98**
Total area of wetlands and other waters:	**88.21**

1. All acres approximate.
SOURCE: ESA, 2012; Barnett Environmental, 2012.

TABLE 3.5-2
USACE VERIFIED WATERS OF THE U.S. WITHIN THE PARTICPATING PARCELS

Type of Jurisdictional Feature	Acres[1]
Wetlands	
Seasonal Wetland	1.70
Wetland Swale	10.08
Vernal Pool	11.23
Total area of wetlands:	**23.01**
Other Waters	
Drainage Ditch	0.46
Pond	3.80
Stream Channel	0.30
Total area of other waters:	**4.56**
Total area of jurisdictional features:	**27.57**

1. All acres approximate.
SOURCE: ESA, 2012;; Barnett Environmental, 2012

3.5.1.2 Wetland Types

Wetlands

Seasonal Wetlands

Seasonal wetlands are relatively shallow topographic depressions that pond for a short duration, support a fairly low diversity of plant species, and tend to support species with a high tolerance for disturbance. Seasonal wetlands are freshwater wetlands that support ponded or saturated soil conditions during winter and spring and are dry through the summer and fall. Seasonal wetlands are defined by a hydrologic regime that is dominated by saturation, rather than inundation. Seasonal wetlands inundate for short periods of time following a storm event but the primary hydrologic

regime is one of saturation. Vegetation is characterized by species of annual and perennial, native and non-native grasses and forbs that begin their growth as aquatic or semi-aquatic plants, typically resembling a wetland community, that make a transition to a dry-land environment as the pool dries. Wetland plant species that are either low-growing, tenacious perennials that tolerate disturbance or annuals that tolerate seasonal wetness often colonize seasonal wetlands. Upland grasses and forbs can become established while wetland species desiccate. Although seasonal wetlands and vernal pools share similar hydrologic characteristics, species composition of seasonal wetlands is typically more ruderal in nature. Therefore, seasonal wetlands are not considered vernal pools, which support a more specialized and less common native flora.

Wetland Swale

Wetland swales are topographical, linear depressions that drain water through gently sloping areas. These features do have a defined bed and bank or ordinary high water mark; rather, they are dominated by wetland vegetation, such as ryegrass (*Lolium* sp.). They otherwise function similarly to seasonal wetlands, with most features becoming dry in the summer months, and saturated or shallowly inundated in the winter months.

Vernal Pools

Vernal pools are seasonal wetlands that form in shallow depressions underlain by an impervious or restrictive soil layer near the surface that restricts the percolation of water. They pond during the wet season and become dry in late spring. Vernal pools are typically distinguished by a unique host of species adapted to the extreme conditions created by the cycles of inundation and drying. Vernal pools differ in species composition from the seasonal wetlands described above during the early spring when growing conditions are appropriate for vernal pool species. Vernal pool habitat typically occurs in defined depressions that sustain ponded conditions for long duration in the winter and early spring rainy season, but then dry up by early to late May. Typically, these depressions are sustained hydrologically by rainfall and surface runoff.

Many of the wildlife species occurring in vernal pools are adapted to ephemeral habitat conditions and include a variety of aquatic invertebrates and crustaceans such as fairy shrimp, tadpole shrimp, copepods, beetle larvae, mites, and flatworms.

Other Waters of the U.S.

Open water in the project site occurs within constructed ditches; natural ephemeral or intermittent channels or swales; and man-made ponds. Although many of the constructed open water features are periodically maintained to increase capacity for water conveyance, some of the more naturalized features still support emergent wetland and marsh species.

Channels within the project site were delineated based on clear evidence of regular sustained flows, which included the presence of a defined bed and bank, scouring and deposition of sands and gravel substrates, and the absence of perennial upland vegetation and topsoil. Field indicators of the ordinary high water mark were used as a basis for defining the landward extent of the channels.

The man-made ponds in the project site sustain ponding for long duration during the growing season, but eventually dry up in middle to late summer in most years. Most of these features were artificially created by previous excavation and berm construction activities.

3.5.1.3 Elverta CRAM

The California Rapid Assessment Method (CRAM) is a standardized methodology to assess the ecological health of wetlands and riparian habitats. It is designed for assessing ambient conditions within watersheds, and through the measurement of various parameters in the field, the relative condition of specific wetland features may be ranked. It can also be used to assess the performance of compensatory mitigation projects and restoration projects. A CRAM was conducted for the project site and two other reference sites to determine the relative ecological health of the wetland features found on the project site. A copy of the CRAM is provided in **Appendix M.**

The *Elverta Specific Plan Project Summary Report of CRAM Application, Sampling, Data Interpretation, and Quality Assurance* (Elverta CRAM; Roberts Environmental and Conservation Planning LLC, 2010) report was prepared to identify existing wetland conditions at: (1) the project site; (2) the Orchard Creek reference site, a preservation site for vernal pool wetlands in southwestern Placer County; and (3) the Empire Ranch reference site, a development project in Folsom, in easternmost Sacramento County, at which detention basins and stream courses are managed as elements in the site's stormwater system in ways that allow enhanced wetland conditions. The Empire Ranch reference site has been identified by the project applicants as approximating wetland conditions within the proposed drainage corridors on the project site if the applicant's preferred alternative was implemented.

The CRAM was designed to provide a rapid assessment of the condition of California wetlands by examining and measuring specific attributes. Attributes to be measured are categorized into "modules" that are focused on characterizing the following for each wetland class: (1) Buffer and Landscape Context, (2) Hydrology, (3) Physical Structure, and (4) Biotic Structure. All CRAM modules assess these same four attributes, although the metrics used in the modules vary to address specific wetland characteristics based on the type of wetland being assessed. In all modules, the CRAM "Index Score" is calculated as the average of these four attribute scores. This method also identifies stressors for the habitats. Four different wetland habitat types were studied in the Elverta CRAM report: depressional wetlands, vernal pools, vernal pool systems and riverine.

When describing wetland conditions, the CRAM scores should not be oversimplified, but instead focus on the scores by attribute type for each wetland type analyzed. Qualitative value should not be assigned to the CRAM index scores (the average of the attribute scores) because there is limited data to provide a comparison (i.e., because the vernal pool habitat received an index score of 60, it does not necessarily mean it is a "bad" or "low-quality" wetland). This study compared three different sites, but the two reference sites are under some form of management to support the wetlands, so they do not represent natural sites. The results of the CRAM assessment are summarized in **Table 3.5-3**.

TABLE 3.5-3
CRAM SCORES FOR PROJECT SITE AND REFERENCE SITES

Location	Mean Index Score[1]	Mean Attribute Scores			
		Buffer/Landscape Context	Hydrology	Physical Structure	Biotic Structure
Depressional Wetlands					
Elverta Specific Plan Site	59	45	78	50	64
Orchard Creek Reference Site	**69**	**80**	**96**	50	50
Empire Ranch Reference Site	64	63	42	**71**	**84**
Riverine Wetlands					
Elverta Specific Plan Site	57	76	77	63	41
Orchard Creek Reference Site	**73**	**93**	**89**	50	59
Empire Ranch Reference Site	**73**	64	78	**79**	**71**
Single Vernal Pool Wetlands					
Elverta Specific Plan Site	70	47	89	**58**	**86**
Orchard Creek Reference Site	**81**	**93**	**100**	48	83
Empire Ranch Reference Site	67	62	89	50	67
Vernal Pool Systems Wetlands					
Elverta Specific Plan Site	71	55	89	59	79
Orchard Creek Reference Site	**91**	**93**	**100**	**75**	**95**

1. Highest score shown in **bold** type

SOURCE: Roberts Environmental and Conservation Planning LLC, 2010

As summarized above, the Orchard Creek reference site scores higher (i.e., provides relatively higher ecological functions) for all wetland types when compared to the project site and Empire Ranch site, particularly in terms of buffer and landscape context and hydrology. These results appear to be consistent with a management focus at the Orchard Creek site on providing high values for vernal pool wetlands, as well as providing suitable conditions for other wetland types to the extent that the site's primary management focus results in favorable conditions for the other types.

The overall index scores for the project site and the Empire Ranch reference site do not appear to differ substantially except for riverine wetlands. The project site supports better biotic structure than Empire Ranch, but provides poorer conditions for buffer and landscape context. The Empire Ranch scores for depressional and riverine wetlands indicate that this site provides better physical and biotic structure conditions when compared to the project site. The results for the Empire Ranch site are consistent with the management focus for these wetlands: to maintain water quality, limit discharges, and provide habitat in depressional and riverine ("riparian") wetlands within a developed area. Relatively dense development in the watershed(s) of these wetlands affects their setting and function, and the observed high scores for some attributes suggest both good design and active management to maintain desirable wetland conditions.

To summarize, when compared to the reference sites, the wetland features on the project site exhibit condition losses consistent with past land uses for all wetland categories, and therefore have a lower score than the reference sites on average. The project site scores highest in terms of vernal pool

habitat conditions, while conditions for depressional and riverine wetlands are relatively more degraded when contrasted with the values provided by the two reference sites.

3.5.2 Regulatory Setting

3.5.2.1 Federal

Section 404 of the Clean Water Act

The USACE is the agency responsible for regulating the discharge of dredged or fill material into jurisdictional wetlands and other waters of the U.S. under Section 404 of the Clean Water Act. The U.S. Environmental Protection Agency (EPA) has overall responsibility for the Clean Water Act.

Wetlands are ecologically complex habitats that support a variety of plant and animal life. The federal government defines wetlands as "areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support (and do support, under normal circumstances) a prevalence of vegetation typically adapted for life in saturated soil conditions" (33 CFR 328.3[b] and 40 CFR 230.3). Under normal circumstances, the federal definition of wetlands requires that three parameters be present: wetland hydrology, hydric soils, and hydrophytic vegetation. Examples of jurisdictional wetlands include freshwater marsh, seasonal wetlands, and vernal pools that have a significant nexus to navigable waterways.

"Other waters of the U.S." refer to aquatic features that are regulated by the Clean Water Act but are not wetlands (33 CFR 328.4). To be considered jurisdictional, these features must exhibit an ordinary high-water mark, and be tributary to or possess a significant nexus to a navigable waterway. Examples of other waters of the U.S. include rivers, creeks, intermittent channels, ponds and lakes.

Section 404 of the Clean Water Act provides the statutory mechanism for the USACE to permit the discharge of dredged or fill material into waters of the United States. Projects that would result in the placement of dredged or fill material into waters of the U.S. require a permit from the USACE. The USACE may either issue individual permits on a case-by-case basis or general permits at a program level. As described previously, for this project, the USACE has determined that issuing permits pursuant to Section 404 would be considered a major federal action under National Environmental Protection Act (NEPA), and therefore has prepared this Environmental Impact Statement (EIS) to evaluate the effects of those actions.

Section 404(b)(1) of the Clean Water Act

Under Section 404(b)(1) of the Clean Water Act, the USACE must comply with the guidelines developed by EPA when approving discharges. The Section 404(b)(1) Guidelines contain the substantive criteria for permitting dredged and fill material discharges under the Clean Water Act. This includes evaluating projects and alternatives in compliance with EPA's *Section 404(b)(1) Guidelines for Specification of Disposal Sites for Dredge or Fill Material* (40 CFR § 230). As part of the public review process, the USACE is required to determine whether a project complies with Section 404(b)(1) Guidelines. The Section 404(b)(1) Guidelines prohibit the discharge of dredged or fill materials to waters of the United States if there is a "practicable alternative to the proposed discharge that would have less adverse impact on the aquatic ecosystem, so long as the

alternative does not have other significant adverse consequences" (40 CFR § 230.10(a)). Practicable alternatives include activities that do not involve a discharge of fill into waters of the United States or involve a discharge at another location(s) in waters of the United States. An alternative is "practicable" if it is "available and capable of being done after taking into consideration cost, existing technology and logistics in light of overall project purposes" (40 CFR § 230.10(a)(2)).

If the proposed activity would involve a discharge into a special aquatic site such as a wetland, the Section 404(b)(1) Guidelines distinguish between those projects that are water dependent and those projects that are not. A water dependent project is one that requires access to water to achieve its basic purpose. A marina is an example of a water dependent project. A non-water dependent project is one that does not require access to water for its basic purpose. A university/school is an example of a non-water dependent project. The Applicant's Preferred Alternative is not a water dependent project.

The Section 404(b)(1) Guidelines establish two "presumptions" for non-water dependent projects that propose a discharge into a special aquatic site: 1) that a practicable alternative is available that does not involve discharging into a special aquatic site; and 2) that all practicable alternatives to a proposed discharge which do not involve a discharge into a special aquatic site are presumed to have less adverse impact to aquatic resources. The applicant has the burden of clearly demonstrating that these presumptions do not apply in a particular case (40 CFR § 23010(a)(3)).

A Memorandum of Agreement (MOA) between the EPA and the USACE Concerning the Determination of Mitigation Under the Clean Water Act Section 404(b)(1) Guidelines (1990) summarizes the thrust of the Section 404(b)(1) Guidelines as first to avoid impacts to waters, second to minimize impacts, and third to provide compensatory mitigation for unavoidable impacts. In March 2008, the EPA and USACE issued the Compensatory Mitigation Rule (33 CFR 332) that provides new standards to ensure no-net-loss of wetlands and emphasizes use of the best available science. This rule reinforces the goal to first avoid and then minimize impacts to waters, and then provides a preference hierarchy for compensatory mitigation in the following order: mitigation banks, in-lieu fee program credits, and permittee-responsible mitigation.

In addition to the above provisions, the Section 404(b)(1) Guidelines also prohibit discharges that cause or contribute to violation of water quality standards, violate any toxic effluent limit under Section 307 of the Clean Water Act, jeopardize the continued existence of any listed species, or destroy or modify listed species' critical habitat (40 CFR §230.10(b)).

Executive Order 11990: Protection of Wetlands

Executive Order 11990 established the protection of wetlands and riparian systems as the official policy of the federal government. It requires all federal agencies to consider wetland protection as an important part of their policies and take action to minimize the destruction, loss, or degradation of wetlands, and to preserve and enhance the natural and beneficial values of wetlands.

3.5.2.2 State

Section 401 Water Quality Certification/Porter-Cologne Water Quality Control Act

Under Section 401 of the Federal Clean Water Act, applicants for a federal license or permit to conduct activities which may result in the discharge of a pollutant into waters of the United States must obtain certification from the State Water Resources Control Board (SWRCB), acting through the appropriate RWQCB, in which the discharge would originate or, if appropriate, from the interstate water pollution control agency with jurisdiction over affected waters at the point where the discharge would originate. The RWQCB must certify that a USACE permit action does not exceed state water quality objectives.

Discharges to wetlands and "other waters of the state" are also subject to state regulation under the California Porter-Cologne Water Quality Control Act (Porter-Cologne; Ca. Water Code, Div. 7, §§ 13000–14958). Water Code section 13260 requires "any person discharging waste, or proposing to discharge waste, within any region that could affect the waters of the state to file a report of waste discharge (Water Code § 13260(a)(1)). The term "waters of the state" is defined as "any surface water or groundwater, including saline waters, within the boundaries of the state" (Water Code § 13050(e)). Therefore, whether or not USACE has concurrent jurisdiction under Section 404 of the Clean Water Act, the SWRCB and RWQCB have jurisdiction to regulate waters of the state by issuing Waste Discharge Requirements or waivers thereof.

3.5.3 References

Environmental Laboratory. 1987. Corps of Engineers Wetlands Delineation Manual. Technical Report Y-87-1, U.S. Engineer Waterways Experiment Station, Vicksburg, MS.

Foothill Associates. 2004. Wetland Delineation Report for the Countryside West ±137 acre site (Gibson Ranch). Prepared for River West. (April 30, 2004)

Gibson & Skordal.1999. Jurisdictional Delineation Elverta Specific Plan Area. Sacramento, CA. Prepared for The Hodgson Company.

Roberts Environmental and Conservation Planning LLC. 2010. Elverta Specific Plan Project Summary Report of CRAM Application, Sampling, Data Interpretation, and Quality Assurance. Davis, CA. Prepared for Bruce D. Barnett, Ph.D.

This Page is Intentionally Left Blank

3.6 Cultural and Historic Resources

3.6.1 Existing Setting

This section describes the cultural resources that may be affected by the Applicant's Preferred Alternative and other alternatives considered in this EIS. For the purposes of this section, the area of potential effect (APE) is the same as the "Plan area" or "project site" described in **Section 1.2**. The following setting information is summarized from the *Determination of Eligibility and Effect for Portions of the Elverta Specific Area Plan, Sacramento California* completed by Peak & Associates (2008, **Appendix E**) and the *Elverta Specific Plan And Associated Subdivision Map Known as Countryside Equestrian Estates* completed by the Sacramento Department of Environmental Review and Assessment (DERA, 2007).

3.6.1.1 Archaeological and Ethnographic Setting

The Sacramento Delta was one of the first regions in California to attract intensive archaeological fieldwork. As early as 1893, archaeologists began excavating prehistoric sites in the Stockton area. By 1931, the focus of archaeological work was directed towards the Cosumnes River where surveys were conducted by Sacramento Junior College.

The APE lies in the territory attributed to the Nisenan, a branch of the Maidu group of the Penutian language family. Tribes of this language family dominated the Central Valley, San Francisco Bay areas, and western Sierra Nevada foothills at the coming of the Europeans. The Nisenan controlled the drainages of the Yuba, Bear, and American rivers, along with the lower portion of the Feather River. The tribes of this whole region referred to themselves as Nisenan, meaning "people," in contrast to the surrounding tribes, in spite of close linguistic and cultural similarities. For this reason, they are usually named by this term rather than the more technical "Southern Maidu." The local main village was of more importance to the people than the tribal designation, and groups identified themselves by the name of the central village.

The Valley Maidu settlement pattern was basically oriented to major river drainages, with ancillary villages located on tributary streams and sloughs. Major villages often supported a population exceeding 500 people. The flat grasslands between water courses were used for collecting vegetable foods and hunting, but these activities leave little, if any, archeological evidence. Both the valley and foothill Nisenan lived by hunting and gathering, with the latter being more important. Acorns in the forms of meal, soup or bread provided the staple diet, augmented by a wide variety of seeds and tubers. Hunting and fishing were regularly practiced, but provided less of the diet than vegetable foods. The bedrock mortar and pestle were employed to process the acorn meats into flour, and the mortar cups are frequently found throughout the range of oak trees. Both salmon and eel were caught at Salmon Falls near Folsom.

3.6.1.2 Historic Setting

The APE lies just north of the lands of the Rancho del Paso. The 44,000 acre Rancho del Paso was granted to Eliab Grimes by the Mexican government in December of 1844. Unlike other land grants in California, the land was held intact as a block and was not subdivided until 1910. The Sacramento Valley Colonization Company, a subsidiary of the United States Farm Land Company of Chicago was the purchaser in 1910 for $1,500,000.

The first rail line to provide service to the area was the Sacramento Northern, and interurban electric railway that was competing with the Western Pacific for service to the northern Sacramento valley. Regular service began in 1906, with a stop at "Dry Creek" serving the community of Rio Linda. The post office was established at the site in 1914. Just north of the Rancho del Paso and west of the Plan area, Elverta grew up along the route of the Sacramento Northern as a service center and shipping point for the region. The community was named for Elverta Dike, whose husband had given a lot to the community church in 1908. A post office was also established at the town in 1908.

The project vicinity was occupied fairly early in the history of Northern Sacramento area development. By 1866, two buildings had been constructed within the Plan area; one noted as "Haskins' house" and the other simply noted as "House" on area maps of that time period. There was a fairly extensive road system at that time, with the Sacramento and Nevada Road crossing from south to north through the Plan area, as well as a branch of an alternate route, the Upper Nevada Road. The 1911 Arcade topographic map shows a total of six buildings in the Plan area – one on Colburn's land in section 16, one on Keithley's land in section 22, one on the Kavanaugh holding in section 15, and three on the Graham holdings, in both section 21 and 15. By 1911, Elverta Road crossed the Plan area form the east to west, but the major north-south road in the Plan area was still the route of the Sacramento-Nevada Road.

The subdivision of the adjacent lands of the Rancho del Paso to the south of the Plan area began in the 1910s. Around this same time, the reclamation of the American Basin and subsequent subdivision of the large tracts of lands occurred to the east of the Plan area by the Natomas Company, which brought additional interest in developing the lands of the region. The 1923 County map shows some of the same owners or their heirs in possession of large tracts of land (Colburn, Graham and Keithley), but some portions of sections 15 and 16 had been subdivided into 20 acre parcels. The project area had been subdivided into at least 13 different parcels. By 1950, the area was developed to a greater degree, with at least 14 buildings/building complexes present. By this date the road pattern of the region was substantially altered, with Palladay Road built primarily as a north-south road along a quarter section line. The Plan area was primarily used for rural residential and agricultural uses (small scale farming and dairy operations), much as it is today.

3.6.1.3 Paleontological Resources

Paleontological resources are the fossilized remains of plants and animals, including vertebrates (animals with backbones), invertebrates (e.g., starfish, clams, ammonites, and coral marine), and fossils of microscopic plants and animals (microfossils). The age and abundance of fossils depend on the location, topographic setting, and particular geologic formation in which they are found.

On a regional scale, fossilized plants, animals and microorganisms occur primarily in marine and non-marine sedimentary rock units.

The geologic units underlying the APE are predominantly Holocene (11,000 years to present day) Alluvium. The University of California Museum of Paleontology Collections (UCMP) Database was accessed on November 10, 2010 and reviewed for any listed paleontological resources within the same formation as the project site. Forty-two paleontological resources have been identified within Sacramento County; however, all of these resources were encountered during excavation activities within Pleistocene (i.e., 11,000 – 1,800,000 years before present) aged formations located in more southerly portions of the County.

3.6.1.4 Archaeological Resources

A review of the files maintained at the North Central Information Center of the California Historical Resources Information System has been conducted for each phase of study (2000, 2004, 2006, and 2008). During 2000, 2004, 2006, and 2008, Peak & Associates conducted intensive pedestrian surveys in the Plan area (additional surveys were conducted as the project boundary changed over time). The properties were inspected by walking linear transects except where structures were located. No prehistoric sites were identified within the APE during the course of any of these studies. Two recorded resources, concrete building foundations, are considered archeological sites because no structures are present, but both are historic sites where structures were present at one time. These sites consist of concrete foundations with few associated artifacts.

Lacking a cultural deposit, these foundations are not eligible for the National Register of Historic Places (NRHP) under Criterion B, C or D (NRHP Criteria are discussed under **Section 3.6.2.1** below). They are not significant resources. All of the foundations within the vicinity are residences, barns, and other outbuildings related to farming and dairying. It does not appear that any foundation within the APE satisfies the Criterion A.

Native American Consultation

Native American consultation was conducted during the 2000 survey effort, with letters sent to a number of groups and individuals in the Sacramento area who were thought to have knowledge and interest in the resources in the Plan area. An information request was sent by Peak & Associates to the Native American Heritage Commission (NAHC) on February 12, 2008 and their reply received on February 19, 2008 noted that no resources listed as Sacred Lands were identified in the project vicinity. Letters and emails were sent to the contacts recommended by the NAHC. A conversation between Peak & Associates with Leland Daniels on May 5, 2008 revealed no specific knowledge regarding cultural sites in the project area.

3.6.1.5 Historic Resources

During the 2000, 2004, 2006, and 2008 field surveys, a review of potentially historic buildings and structures was also undertaken. Nine potentially historic buildings or building complexes were recorded within the APE by Peak & Associates; however, none of these are located

within the participating parcels (described in **Chapter 1.0**). Generally, buildings and structures in the vicinity reflect the post-War expansion of the late 1940s through the 1950s into the more rural sections of Sacramento County. Suburban tracts grew during this period and many communities in the northern section of the County developed in this period. While occupants may have tried farming, it is more likely that the residents commuted into Sacramento or nearby McClellan Air Force Base for their job.

Historic Building Inventory

While the nine potentially historic structures identified by previous studies are not located within the current participating parcels, they are located within the APE in nearby non-participating parcels. See **Table 3.6-1**, below, for a description of these buildings and building complexes in the APE.

TABLE 3.6-1
POTENTIALLY HISTORIC BUILDINGS LOCATED IN THE APE (NON-PARTICIPATING PARCELS)

APN	Address	Description
202-0070-032	8730 Palladay Road.	This resource consists of a farm complex which lies north of the ninety degree turn in Palladay Road. The County building record indicates a residence dating to roughly 1896, a second residence dating to 1946 and at least nine outbuildings on the property. USGS maps indicate that there was a structure here at least as early as 1910. All that is visible from the road is a small one-story frame residence, probably the 1946 one, and a barn.
202-0080-016	1125 Elverta Road	This resource is located on the north side of Elverta Road 1000 feet east of Palladay Road. The County building record indicates a one story frame residence constructed in 1946 (estimated) and extensively modified, particularly in 1998.
202-0080-052	1223 Elverta Road	The site consists of a small residence and detached garage. Both are frame structures with gabled roofs. The one story residence is very small (26' x 26'), side gabled with an extension of the roof on the front (south) elevation to form a covered porch supported by plain, square wood columns.
202-0080-024	1331 Elverta Road	The resource is on the north side of Elverta one-quarter mile west of 16th Street. The complex includes a one story frame residence and a pump house. The County building record indicates the residence dates to 1950.
202-0080-006	8209 16th Street	The site is one of the best-maintained houses in the Plan area. It is on the west side of 16th Street one-quarter mile north of Elverta Road. This is a one story frame residence and storage shed. The County building record indicates the residence dates to 1947.
202-0080-005	8327 16th Street	The resource is located at on the west side of 16th Street about 2,250 feet north of Elverta Road. It is a farm complex, including a one story frame residence, located about 300 feet west of 16th Street. County building record indicates the residence dates to about 1925. The integrity of the 1925 era structure has been seriously compromised, however, by the addition of modern aluminum windows, a bay window, a wood shed, and addition on the west facing facade.
203-0010-003	1801 Kasser Road	The resource is located on the north side of Kasser about 2,800 feet east of 16th Street. The property includes two residences, a barn and a poultry shed, formerly part of a larger complex, located north of Kasser Road. The County building record indicates one residence dates to about 1931, and another dating to 1950.
203-0010-006	1800 Kasser Road	The residential complex, formerly a farm, includes a one story frame residence that the County building record indicates dates to about 1946.
203-0010-005		Located on the south side of Kasser Road, almost opposite about 3,000 feet east of 16th Street, the complex includes a residence and storage shed, formerly part of a farm. The County building record indicates the residence dates to about 1946.

SOURCE: Peak & Associates, 2008

The buildings or building complexes were evaluated and determined to lack association with important events or persons important in federal, State, or local history (NRHP Criteria A and B; California Register of Historic Resources (CRHR) Criteria 1 and 2). They also reflect modest examples of typical ranch style architectural residences and outbuildings (NRHP Criterion C; CRHR Criterion 3). Finally, many of the buildings or building complexes appear to have been altered over time, and lack integrity of design. Nothing about these resources suggests that there are associated deposits that would answer important research questions about past life ways (NRHP Criterion D; CRHR Criterion 4). As none of the recorded buildings or buildings complexes in the APE appear eligible for listing in the NRHP or CRHR, none of them are considered historic properties or historic resources.

3.6.2 Regulatory Setting

3.6.2.1 Federal

National Historic Preservation Act

Section 106

Section 106 of the National Historic Preservation Act (NHPA) and its implementing regulations (36 CFR 800, as amended in 2004) require federal agencies to consider the potential effects of their proposed undertakings on historic properties. Historic properties are cultural resources that are listed on, or are eligible for listing on, the NRHP (36 CFR 800.16[l]). Undertakings include activities that federal agencies directly carry out, fund, or permit. Federal agencies must also allow the Advisory Council on Historic Preservation (ACHP) to comment on the proposed undertaking and its potential effects on historic properties.

The implementing regulations for Section 106 of the NHPA require consultation with the State Historic Preservation Officer (SHPO), the ACHP, federally recognized Indian tribes and other Native Americans, and interested members of the public throughout the compliance process. The four principal steps are:

1. Identify and evaluate historic properties in consultation with the SHPO and interested parties
2. Assess the effects of the undertaking on properties that are eligible for inclusion in the NRHP
3. Consult with the SHPO, other agencies, and interested parties to develop an agreement that addresses the treatment of historic properties and notify the Advisory Council on Historic Preservation; and
4. Proceed with the project according to the conditions of the agreement

SHPO concurrence with the findings of the reports completed by Peak & Associates and DERA is pending. It is assumed that SHPO will concur with the findings of the Peak & Associates report.

National Register of Historic Places

The NRHP was established by the NHPA of 1966, as "an authoritative guide to be used by federal, State, and local governments, private groups and citizens to identify the Nation's historic resources and to indicate what properties should be considered for protection from destruction or impairment" (CFR 36 Section 60.2). The NRHP recognizes both historical-period and prehistoric archaeological properties that are significant at the national, state, and local levels.

To be eligible for listing in the NRHP, a resource must be significant in American history, architecture, archaeology, engineering, or culture. Districts, sites, buildings, structures, and objects of potential significance must meet one or more of four established criteria (below).

National Register Criteria

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

Unless the property possesses exceptional significance, it must be at least fifty years old to be eligible for NRHP listing (U.S. Department of the Interior, 1995).

In addition to meeting the criteria of significance, a property must have integrity. Integrity is defined as "the ability of a property to convey its significance" (U.S. Department of the Interior, 1995). The NRHP recognizes seven qualities that, in various combinations, define integrity. To retain historic integrity a property must possess several, and usually most, of these seven aspects. Thus, the retention of the specific aspects of integrity is paramount for a property to convey its significance. The seven factors that define integrity are location, design, setting, materials, workmanship, feeling, and association.

American Indian Religious Freedom Act of 1978

The American Indian Religious Freedom Act of 1978 allows access to sites of religious importance to Native Americans. This act established "the policy of the United States to protect and preserve for American Indians their inherent right of freedom to believe, express, and exercise the traditional religions…including but not limited to access to sites, use and possession of sacred objects, and the freedom to worship through ceremonials and traditional rites" (42 United States Code 1996).

3.6.2.2 State

The State implements the NHPA through its statewide comprehensive cultural resources surveys and preservation programs. The California Office of Historic Preservation (OHP), as an office of the California Department of Parks and Recreation, implements the policies of the NHPA on a

statewide level. The OHP also maintains the California Historic Resources Inventory. The SHPO is an appointed official who implements historic preservation programs within the State's jurisdictions.

California Register of Historical Resources

The California Register of Historical Resources (California Register) is "an authoritative listing and guide to be used by State and local agencies, private groups, and citizens in identifying the existing historical resources of the State and to indicate which resources deserve to be protected, to the extent prudent and feasible, from substantial adverse change." (California Public Resources Code § 5024.1[a]). The criteria for eligibility for the California Register are based upon NRHP criteria (California Public Resources Code § 5024.1[b]). Certain resources are determined by the statute to be automatically included in the California Register, including California properties formally determined eligible for, or listed in, the NRHP.

To be eligible for the California Register, a prehistoric or historical-period property must be significant at the local, State, and/or federal level under one or more of the criteria below.

California Register Criteria

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

A resource eligible for the California Register must meet one of the criteria of significance described above, and retain enough of its historic character or appearance (integrity) to be recognizable as a historical resource and to convey the reason for its significance. It is possible that a historic resource may not retain sufficient integrity to meet the criteria for listing in the National Register, but it may still be eligible for listing in the California Register.

Additionally, the California Register consists of resources that are listed automatically and those that must be nominated through an application and public hearing process. The California Register automatically includes the following:

- California properties listed on the NRHP and those formally Determined Eligible for the NRHP.
- California Registered Historical Landmarks from No. 770 onward.
- Those California Points of Historical Interest that have been evaluated by the OHP and have been recommended to the State Historical Commission for inclusion on the California Register.

Other resources that may be nominated to the California Register include:

- Historical resources with a significance rating of Category 3 through 5 (Those properties identified as eligible for listing in the NRHP, the California Register, and/or a local jurisdiction register).
- Individual historical resources.
- Historical resources contributing to historic districts.
- Historical resources designated or listed as local landmarks, or designated under any local ordinance, such as an historic preservation overlay zone.

3.6.3 References

Peak & Associates, 2008. Determination of Eligibility and Effect for Portions of the Elverta Specific Area Plan, Sacramento California. Prepared for the Hodgson Company.

Sacramento County, 2011. *General Plan of 2005 – 2030.* Amended November 11, 2011.

DERA, 2007. Final Environmental Impact Report – Elverta Specific Plan and Associated Subdivision Map Known as Countryside Equestrian Estates. County of Sacramento Department of Environmental Review and Assessment Published May 2007.

UCMP, 2010. University of California Museum of Paleontology Collections Database accessed on November 10, 2010.

US Department of the Interior, 1995. National Register Bulletin 15, How to Apply the National Register Criteria for Evaluation.

3.7 Socioeconomics and Environmental Justice

3.7.1 Existing Setting

This section provides the socioeconomic and environmental justice background for the project site. For the socioeconomic analysis, data is presented for both the unincorporated area of Sacramento County (including the project site) and Sacramento County as a whole. The City of Sacramento and smaller communities in the vicinity of the project site (e.g. Rio Linda) are also discussed where statistical information is available. For the environmental justice discussion, income and race data are presented by census tract.

Population

Table 3.7-1 shows the past population for the various communities and cities in the vicinity of the site. In 2000, more than half the County's population lived within unincorporated areas. During the last 15 years several cities have incorporated within Sacramento: Citrus Heights (in 1997), Elk Grove (in late 2000) and most recently Rancho Cordova (in 2003). As a result, determining past population growth for sub County areas within Sacramento is difficult. However, overall as shown in Table 3.7-1, while the City of Sacramento has experienced steady annual growth, the rate of population growth elsewhere in the County has been even higher. Overall, Sacramento County grew by 1.7 percent annually between 1990 and 2009.

TABLE 3.7-1
HISTORICAL POPULATION IN SACRAMENTO COUNTY AND SELECTED CITIES (1990 – 2010)

Location	1990	2000	2010	Percent Change (1990 - 2009)
Sacramento County	1,041,219	1,223,499	1,445,327	38.8%
Citrus Heights[1]	107,439	85,017	88,115	n/a
Sacramento City	369,365	407,018	486,189	31.6%
Other Cities[2]	39,524	72,238	303,323	n/a
Unincorporated County[2]	524,891	659,226	567,700	8.2%
Rio Linda CDP[3]	9,481	10,466	n/a	n/a
North Highlands CDP[3]	42,105	44,187	n/a	n/a

1. Citrus Heights was not an incorporated city in 1990. The 1990 population estimate for the community is based on its Census Designated Place (CDP) estimate which encompasses a wider area and larger population than the subsequently incorporated city.
2 The population estimates for the County's unincorporated areas and other cities also represent changes resulting from the incorporation of Citrus Heights (in 1997), Elk Grove (in 2000 after the Census 2000 count) and Rancho Cordova (in 2003). The percentage change is not calculated as increase would be misleading.
3 The available population data for the Census Designated Place (CDP) as determined by the U.S. Census Bureau.

SOURCE: DOF, 2007a; DOF, 2010a.

Table 3.7-2 shows the most current population projections for the County and selected cities over the next 15 years. The countywide future population growth rate is expected to decrease to 0.7 percent annually by 2025 with the growth in the City of Sacramento averaging only 0.5 percent annually. Future population growth within Sacramento County's unincorporated areas (such as Elverta) is expected to be 1.5 percent per year - three times the growth rate for the City of

Sacramento. In the near term (2008 to 2013), population growth for the unincorporated area is expected in the communities of Antelope, Rio Linda and Elverta, the Florin-Vineyard area as well as near Highway 50 and other major transportation corridors (Sacramento County, 2008).

TABLE 3.7-2
POPULATION PROJECTIONS FOR SACRAMENTO COUNTY AND SELECTED CITIES (2010 – 2035)

Location	2010	2035	Percent Change (2010 – 2035)
Sacramento County	1,445,327	1,986,543	37.4%
Citrus Heights	88,155	94,308	7.0%
Sacramento City	486,189	642,257	32.1%
Other Cities	303,323	531,286	75.2%
Unincorporated County	567,700	718,692	26.6%

SOURCE: SACOG, 2008a.

Approximately 65 homes are located within the project site and most of these homes are located along Palladay Road, Elverta Road and 16th Street. The project site continues to exist predominantly in a rural state. The local soil is poorly suited for crop production but portions of the area are used for limited animal grazing on small scale ranching and truck farming. Based on typical demographics for the county, it is estimated that approximately 168 residents currently reside within the project site.

Housing

Table 3.7-3 shows the past housing estimates for the various communities and cities in the near vicinity to the site. Between 1990 and 2010, the number of housing units with the Sacramento County increased at 1.5 percent annually – a rate slightly less the County's corresponding annual population growth rate of 1.7 percent over the same period.

Approximately 65 housing units are estimated to be located within the project site. Rio Linda is the nearest community to the project. According to the most recent available census data there were 3,577 homes within Rio Linda in 2000.

U.S. Census data for 2000 indicates that housing vacancy levels countywide and in the unincorporated area of the County were both about four percent. A vacancy rate of five percent is generally considered adequate to allow for consumer choice and relocation within the housing market. Although increases in foreclosures and real estate price declines following the recent mortgage crisis may be expected to slightly increase homeowner vacancy rates, this has been offset by increases in rental property occupancy rates, resulting in relatively stable overall housing vacancy rates within Sacramento County (County of Sacramento 2008).

TABLE 3.7-3
HISTORICAL HOUSING IN SACRAMENTO COUNTY AND SELECTED CITIES (1990 – 2010)

Location	1990	2000	2010	Annual Percentage Change (1990 - 2010)
Sacramento County	417,574	474,814	556,208	1.5%
Citrus Heights[1]	43,004	34,537	35,721	n/a
Sacramento City	153,362	163,957	195,446	1.3%
Other Cities[2]	12,843	24,923	107,095	n/a
Unincorporated County [2]	208,365	251,397	217,946	n/a
Rio Linda CDP[3]	3,288	3,577	n/a	n/a
North Highlands CDP[3]	16,138	16,148	n/a	n/a

1 Citrus Heights was not an incorporated city in 1990. The 1990 housing estimate is its Census Designated Place (CDP) estimate which encompasses a wider area and larger population than the subsequently incorporated city.
2 The population estimates for the County's unincorporated areas and other cities also represent changes resulting from the incorporation of Citrus Heights (in 1997), Elk Grove (in 2000 after the Census 2000 count) and Rancho Cordova (in 2003).
3 The available population data for the Census Designated Place (CDP) as determined by the U.S. Census Bureau.

SOURCE: DOF 2007b; DOF 2010b.

As shown in **Table 3.7-4**, the current housing vacancy rates within Sacramento County are relatively low with a countywide average of 4.3 percent as of September 2009. Although vacancy rates are lower within the City of Sacramento, vacancy rates for the unincorporated areas (such as Elverta) are estimated to be 3.5 percent.

Future housing growth for Sacramento County is projected to remain comparable to its past growth rate. The future housing growth rate for the City of Sacramento is projected to remain at 1.3 percent which is comparable to the countywide rate of growth and slightly greater than the housing growth within unincorporated areas. The greatest rate of housing growth is projected to occur within the cities of Elk Grove, Folsom and Rancho Cordova (SACOG, 2008).

TABLE 3.7-4
PROJECTED HOUSING GROWTH FOR SACRAMENTO COUNTY AND SELECTED CITIES (2010 – 2035)

Location	2010	Vacancy Rate (2010)	2035	Percent Growth (2010 – 2035)
Sacramento County	556,208	4.4%	797,633	43.4%
Citrus Heights	35,721	4.1%	39,540	10.7%
Sacramento City	195,446	5.7%	269,345	37.8%
Other Cities	107,095	3.5%	191,866	79.2%
Unincorporated County	217,946	3.8%	296,882	36.2%

SOURCE: SACOG 2008; DOF, 2010b.

Employment

Employment data for a community can represent the number of employed residents (i.e. labor) within the community or alternatively the number of jobs located within the community (i.e. employment). **Table 3.7-5** shows the more recent available data on the labor force and their unemployment rates for residents in Sacramento and selected communities.

TABLE 3.7-5
LABOR FORCE AND UNEMPLOYMENT IN SACRAMENTO COUNTY AND SELECTED CITIES (SEPTEMBER 2010)

Location	Labor Force	Unemployment	Unemployment Rate
Sacramento County	683,100	88,700	13.0%
Citrus Heights	50,300	4,600	9.2%
Sacramento City	217,600	33,000	15.2%
Other Cities	77,800	10,700	13.8%
Unincorporated County	337,400	40,400	12.0%
North Highlands CDP	23,000	4,600	19.9%
Rio Linda CDP	5,900	1,200	20.1%
State of California	18,295,900	2,236,200	12.2%

SOURCE: EDD, 2010.

Between 1997 and 2007, Sacramento County experienced considerable growth in employment levels. County labor force growth of over 140,000 new workers was matched by a comparable increase of 133,400 in the number of employed residents. Although slightly above the State of California's unemployment, the Sacramento County unemployment rate remained relatively stable between 5.5 and 5.7 percent (SACOG 2008).

However, as shown in **Table 3.7-5**, following the recent economic downturn, unemployment rates within Sacramento County have more than doubled from the 2007 levels. Currently, the countywide unemployment rate is 13.0 percent which is higher than the statewide unemployment rate of 12.2 percent. While, unemployment rates within the unincorporated areas are slightly below the countywide rate, the unemployment rates for the two communities nearest to the project site are substantially higher than the countywide rate.

Sacramento County has only a slightly lower number of jobs than employed residents. As shown in **Table 3.7-6**, the most recent employment data estimates that there were approximately 678,500 jobs located in Sacramento County in 2005. More than half of these jobs are located in the City of Sacramento (51 percent). However, almost 30 percent of the County's current jobs were located within unincorporated areas.

While the number of jobs can fluctuate with economic downturn, long-term employment projections are designed to be conservative to account for these fluctuations. Between 2010 and 2035, the Sacramento Council of Governments (SACOG) projects a 42.7 increase in employment, which is equivalent to an average annual job growth rate of approximately 1.4 percent. Future job growth within the unincorporated areas is expected to match the average county rate. The greatest rate of growth is projected to occur within the cities of Elk Grove, Folsom and Rancho Cordova which together would add nearly 90,000 jobs, for an average annual job growth rate of 2.35 percent.

TABLE 3.7-6
PROJECTED EMPLOYMENT GROWTH FOR SACRAMENTO COUNTY AND SELECTED CITIES (2005 – 2035)

Location	2005[1]	2035	Percent Growth (2005 – 2035)
Sacramento County	678,503	967,986	42.7%
Citrus Heights	18,177	24,626	35.5%
Sacramento City	345,429	458,957	32.9%
Other Cities	114,060	204,025	78.9%
Unincorporated County	200,837	280,378	39.6%

1. The most current available estimates of employment

SOURCE: SACOG 2008.

The government sector is the largest industry sector in the Sacramento Region[1] and accounts for more than a quarter of total industry employment. Trade, transportation & utilities account for approximately 17 percent and professional & business services account for approximately 12 percent of the region's employment. Between 1997 and 2007, the construction sector experienced the greatest rate of growth (83 percent) followed by the health services sector which grew by 51 percent over the same time period. In 2007, health care providers represented the top three major non-government employers within Sacramento County (UC Davis Health System with 7,900 employees, Sutter Health with 7,140 employees and Kaiser Permanente with 6,905 employees). While Intel and AT&T were the next two largest employers (6,800 and 4,765 employees respectively), CHW/Mercy Health Care and Health Net were also major local employers with 4,700 and 2,620 employees respectively (SACOG, 2008).

The California Employment Development Department projects the greatest future growth within the Sacramento Region to occur within health care services, education, food and retail trade, and services (business and personal) industries. Significant job growth is expected within the computer and other technical specialty jobs, law enforcement/emergency services and transportation businesses.

Income

Between 1990 and 2000, the median household income of Sacramento County increased by 36 percent and the City of Sacramento increased by 31 percent over the same time period. **Table 3.7-7** provides the most recent household income data available for the cities and communities in Sacramento County most relevant to the project site.

1 The Sacramento region includes the counties of Sacramento, Sutter, Placer, El Dorado, Yolo and Yuba.

TABLE 3.7-7
ANNUAL MEDIAN HOUSEHOLD INCOMES FOR SACRAMENTO COUNTY AND SELECTED CITIES (2011)

Location	2011[1]
Sacramento County	$52.314
Citrus Heights	$49,983
Sacramento City	$47,908
North Highlands CDP	$40,650
Rio Linda CDP	$61,278
State of California	$57,287

1. 2011 Inflation-Adjusted Dollars

SOURCE: U.S. Census, 2011. 2011 American Community Survey

Overall Sacramento County's median household income was approximately 91 percent of the statewide median income level. Within Sacramento County there is considerable variation in median income between different communities. Median incomes for the highest income communities such as Rancho Murieta, Folsom and Cosumnes were nearly twice those of the lowest income communities such as North Highlands and the City of Sacramento.

Minority and Low-Income Populations

For the purposes of environmental justice analysis, federal agencies are required to identify whether a proposed action would possibly have disproportionately high and adverse effects on minority or low-income populations within the vicinity of a project. The geographic scale for which an agency should obtain demographic information to identify if there are any such "communities of concern" should more or less correspond to the project's affected environment.

The U.S. Census provides socio-demographic data for a wide variety of different community sizes and areas. Census blocks are the smallest data grouping available for the population and housing status data collected by the Census Bureau comprehensively in its "short form census." In densely populated urban areas, a census block may represent a few city blocks. However, in rural areas such as Placer County, the geographical area of a census block can cover several square miles. Census block groups typically aggregate numerous census blocks and are the smallest data group for which the more detailed sample data collected by the "long form census" (e.g. income and housing characteristics) is available. Census tracts typically are composed of several census block groups and average about 4,000 inhabitants. Census tracts are designed to be relatively homogeneous units with respect to population characteristics, economic status, and living conditions at the time of establishment. Traditionally, census tract boundaries follow visible features and may also coincide with city, towns or other administrative limits.

For the environmental justice analysis, to identify potential low income and/or minority populations that would qualify as "communities of concern" additional block group level analysis of the project site and its surrounding vicinity has been performed. The affected environment for the environmental

justice analysis is determined to consist of the adjoining census block groups located entirely or partially within a one mile radius of the project. These census block groups are shown in **Figure 3.7-1**.

Minority Populations

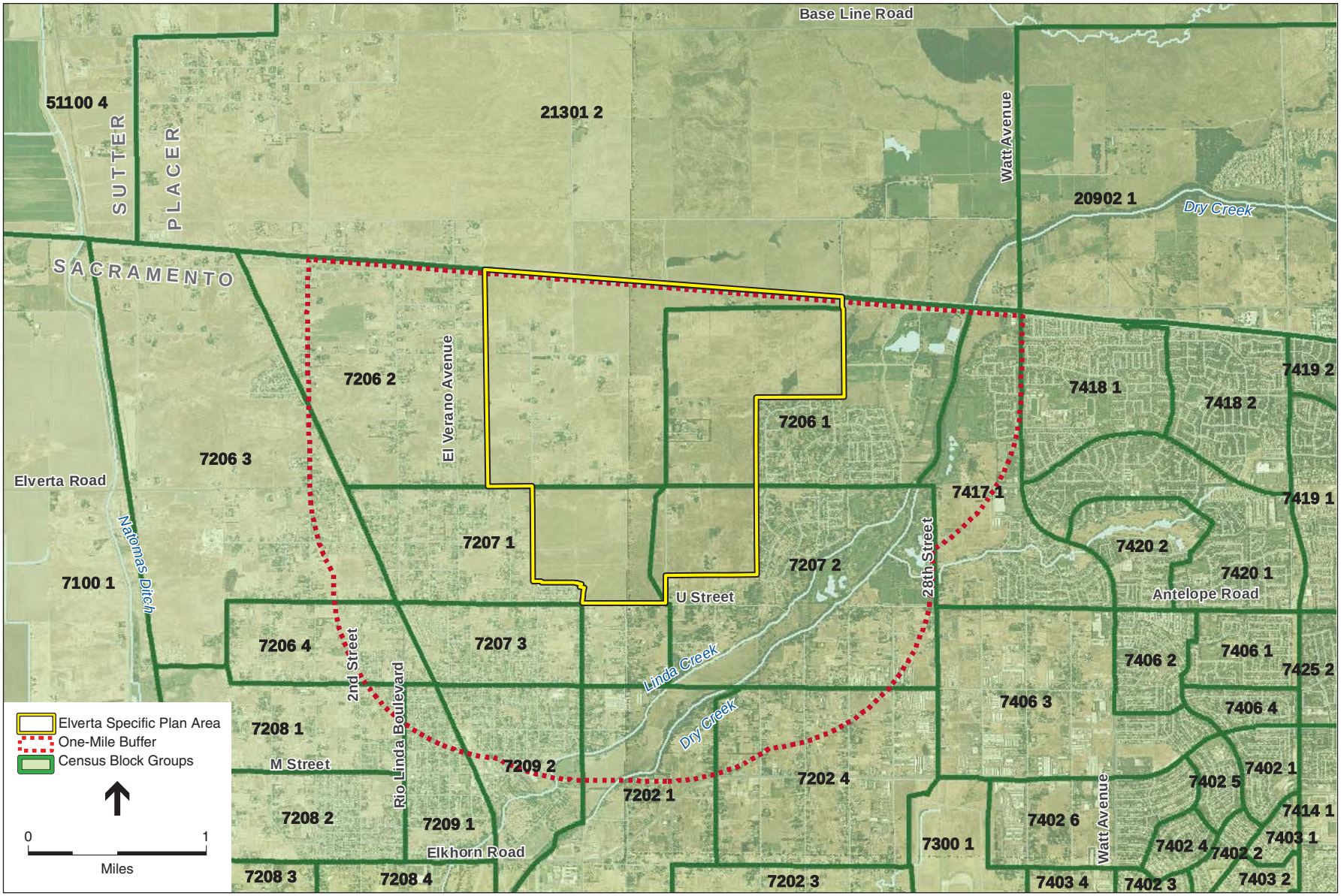
According to the Council on Environmental Quality (CEQ) guidelines for environmental justice analysis, "Minority populations should be identified where either (a) the minority population of the affected area exceeds 50 percent or (b) the minority population percentage of the affected area is meaningfully greater than the majority population percentage in the general population or other appropriate unit of geographic analysis…A minority population also exists if there is more than one minority group present and the minority percentage, as calculated by aggregating all minority persons, meets one of the above-stated thresholds" (CEQ, 1997). The environmental justice analysis performed for by the SACOG's 2006 Metropolitan Transportation Plan similarly identified areas with a concentration of minorities as Census Blocks whose total population comprised more than 50 percent of non-white residents. The same standard and information regarding racial diversity derived from the 2000 Census (U.S. Census Bureau, 2000a) has been used in the environmental justice analysis for the project site. In addition, the proportion of the minority population has been compared to the composition of the general population as represented by the Sacramento County.

Project Site

Table 3.7-8 presents all the block groups located within or that overlap with the project site and these Census Block Groups' boundaries (Figure 3.7-1). As shown in the table, only two populated census blocks (Census Tract 72.06, Block Group 2, Blocks 2001 and 2002) are located entirely within the project site.[2] A total of 87 residents were reported to be living within these two census blocks at the time of the 2000 Census.

The majority of Census Tract 72.07, Block Group 1, Block 1000 is located with the southwestern portion of the project site. The reported population for this Census block was 337 people in the 2000 Census; however, many of this area's residents are located along 9th Street which is outside the project site. Similarly, much of the residential population that lives along El Verano Avenue is outside the project site but within the Census Tract 72.06, Block Group 2, Block 2003. This Census Block has a reported population of 112 people.

[2] Census Tract 72.06, Block Group 2, Blocks 2000 is also within the project site but the 2000 Census reported no resident population for the Census Block.



SOURCE: ESRI, 2007; Bing Maps, 2009; and ESA, 2011

Elverta Specific Plan EIS . 207431

Figure 3.7-1
Census Block Groups

TABLE 3.7-8
RACIAL CHARACTERISTICS OF CENSUS BLOCK GROUPS AT THE PROJECT SITE

Location / Census Block Group	Block	Portion within Site	Total Population	White	Hispanic / Latino	Black	American Indian / Alaska Native	Asian	Native Hawaiian / Pacific Islander	Other
Census 72.06-2	2000	All	0	-	-	-	-	-	-	-
Census 72.06-2	2001	All	2	50.0%	-	-	-	-	-	50.0%
Census 72.06-2	2002	All	85	83.5%	2.4%	2.4%	0.0%	2.4%	-	9.4%
Total Within Site			**87**							
Census 72.06-1	1000	Partial	578	73.2%	10.7%	5.0%	1.7%	1.0%	-	8.3%
Census 72.06-2	2003	Partial	112	82.1%	0.9%	8.9%	3.6%	0.0%	-	4.5%
Census 72.07-1	1000	Partial	337	76.0%	15.1%	0.0%	0.9%	5.0%	-	3.0%
Census 72.07-2	2002	Partial	451	75.8%	13.3%	2.9%	0.9%	4.9%	-	2.2%
Total Partly in Site			**1,478**							
TOTAL (All Census Blocks)			**1,565**	**75.7%**	**11.2%**	**3.5%**	**1.3%**	**3.0%**	**0%**	**5.2%**

SOURCE: U.S. Census Bureau, Census Summary File 1 (SF 1) P4. "Hispanic or Latino, and Not Hispanic or Latino by Race, Total Population," 2000.

The two most populated Census Blocks partially encompassing the project site have a combined residential population of 1,029 residents; however, only a minor portion of these individuals live within the project site. As discussed earlier, only 168 residents are estimated to live within the project site, which is approximately 10 percent of the 1,565 residents living within the six Census Blocks that overlap the project site.

Surrounding Census Block Groups

A one-mile buffer area was used to compare census block groups surrounding the project site. The northern boundary for this one mile "buffer" area extends along Baseline Road. The western boundary is demarcated by West 2nd Street. The southern boundary is M Street. The eastern boundary extends from 28th Street (between U Street and Elverta Road) and then along Watt Avenue north to Baseline Road.

Table 3.7-9 presents the racial composition for Sacramento County, the neighboring community of Rio Linda Census Designated Place (CDP), and the Census Block Groups located within a mile of the project site within Sacramento County. To the north of the project site in Placer County is a highly rural area with a negligible residential population located in Census Tract 231.01 Block Group 2. This Census Block Group does not warrant further analysis.

Compared with Sacramento County's racial composition, both Rio Linda and the project site have a far greater proportion of White-alone residents and a smaller proportion of minority residents. With the exception of Census Block Group 74.14-1 (which is located east of the project site near North Highlands area), the surrounding Census Block groups have relatively similar racial compositions. In particular, Black and Asian residents represent a considerably smaller proportion of the local population than for Sacramento County as a whole.

Under CEQ guidelines for minority populations, neither the community of Rio Linda nor any of the Census Blocks located within a mile of the project site would qualify as minority populations.

Income

The CEQ's environmental justice guidance does not clearly set the demarcations at the census poverty thresholds, but states that "[l]ow-income populations in an affected area should be identified with the annual statistical poverty thresholds from the Bureau of the Census' Current Population Reports, Series P-60 on Income and Poverty."

The environmental justice analysis performed for by the SACOG 2006 Metropolitan Transportation Plan identified low-income areas as those Census Block Groups where more than 25 percent of the households earned an annual income below the poverty level.

Poverty level thresholds vary according to a household's size and composition. The Census poverty threshold for a two-parent household with two children was $17,465 in 1999 dollars which is equivalent to $21,993 in 2008 dollar terms. The poverty thresholds provide one national measurementof income that is not adjusted for regional costs of living. Among its poverty statistical data, the U.S. Census Bureau reports population data income ratios from 50 percent to 200 percent of the poverty threshold (U.S. Census Bureau, 2000b).

TABLE 3.7-9
RACIAL CHARACTERISTICS OF CENSUS BLOCK GROUPS LOCATED WITHIN ONE MILE OF THE PROJECT (2000)

Location / Census Block Group	Total Population	White	Hispanic / Latino	Black	American Indian / Alaska Native	Asian	Native Hawaiian / Pacific Islander	Other
Sacramento County	**1,223,499**	**57.8%**	**16.0%**	**9.7%**	**0.7%**	**10.8%**	**0.6%**	**4.4%**
Rio Linda CDP	10,466	78.4%	11.1%	2.0%	1.3%	2.6%	0%	4.1%
Elverta Site (est)*	87 – 1,565	75.7%	11.2%	3.5%	1.3%	3.0%	0%	5.2%
Census 72.02-1	580	79.8%	11.0%	2.4%	0.5%	2.8%	0%	3.4%
Census 72.02-4	963	77.4%	12.3%	0.7%	0.7%	3.5%	0.7%	4.6%
Census 72.06-1*	1,888	69.9%	14.5%	4.3%	1.1%	3.0%	1%	6.2%
Census 72.06-2*	689	77.9%	10.0%	2.8%	2.2%	2.5%	0%	4.2%
Census 72.06-3	861	82.7%	10.8%	0.6%	1.2%	1.7%	1%	2.3%
Census 72.06-4	758	75.7%	11.7%	1.2%	0.8%	3.3%	1%	6.1%
Census 72.07-1*	1,334	79.6%	12.1%	0.3%	1.4%	3.1%	0%	3.4%
Census 72.07-2*	1,436	76.0%	11.5%	2.2%	1.9%	4.0%	0%	4.0%
Census 72.07-3	1,195	82.2%	9.5%	1.2%	0.8%	1.8%	0%	4.5%
Census 72.08-1	717	80.2%	9.6%	2.2%	1.4%	2.5%	1%	2.6%
Census 72.09-1	1,629	79.2%	10.5%	3.1%	1.7%	2.6%	0%	2.8%
Census 72.09-2	1,950	80.8%	10.9%	0.9%	1.7%	1.8%	0%	3.5%
Census 74.17-1	3,143	54.4%	10.9%	9.5%	1.2%	15.5%	1%	7.7%
Census 213.01-1**	1,699	82.3%	11.4%	0.5%	1.0%	1.0%	0%	2.8%

* - denotes data which includes the project site.

** - Census Block Group 21301-2 located within Placer County.

SOURCE: U.S. Census Bureau, Census Summary File 1 (SF 1) P4. “Hispanic or Latino, and Not Hispanic or Latino by Race, Total Population,” 2000 b.

Table 3.7-10 presents the median household incomes and the percentages of residents with incomes less than the poverty level for Rio Linda, Sacramento County and the Census Block Groups located within one mile of the project.

TABLE 3.7-10
INCOME CHARACTERISTICS FOR PROJECT AREA (2000)

Location	Total Population	Median Household Income	Income Less Than Poverty Level
Sacramento County	**1,201,917**	**$43,816**	**14.1%**
Rio Linda CDP	10,466	$44,026	14.0%
Census 72.02-1	593	$38,125	10.8%
Census 72.02-4	965	$45,441	17.9%
Census 72.06-1*	1,937	$42,768	5.7%
Census 72.06-2*	691	$62,500	12.0%
Census 72.06-3	840	$56,875	11.0%
Census 72.06-4	704	$50,729	10.1%
Census 72.07-1*	1,254	$45,278	21.4%
Census 72.07-2*	1,479	$43,043	10.8%
Census 72.07-3	1,182	$48,973	6.5%
Census 72.08-1	642	$41,528	12.5%
Census 72.09-1	1,507	$41,017	14.1%
Census 72.09-2	1,937	$45,884	2.2%
Census 74.17-1	3,140	$49,750	5.5%
Census 213.01-1	1,735	$62,747	4.6%

* - denotes data which includes the project site.
Median income data expressed in 1999 dollar terms.

SOURCE: U.S. Census Bureau, Census, Summary File 3 (SF 3) P88. "Ratio of Income in 1999 to Poverty Level" 2000c.

The 2000 Census reported that the median household income of Sacramento County was $43,816 in 1999 dollars. The census determined that approximately 14.1 percent of County residents had an income below the federal poverty level. Rio Linda had a comparable median household income and proportion of residents with incomes below the poverty level.

While the median household incomes for the surrounding Census Block Groups vary considerably, only Census Block Groups 72.02-4 and 72.07-1 had a greater proportion of their residents with incomes below the poverty line. All the other Census Block Group had a proportion of low-income equal or smaller than the countywide average. The percentage of low-income residents for the Census Block Group 72.02-4 and 72.07-1 were 17.9 percent and 21.4 percent respectively and consequently both are below the 25 percent threshold for qualifying as a low income "community of concern."

Therefore, neither the community of Rio Linda nor any of the Census Blocks located within a mile of the project site would qualify as "low income" populations for the purposes of environmental justice analysis.

3.7.2 Regulatory Setting

3.7.2.1 Federal

Executive Order 12898

Federal agencies are directed by Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority and Low Income Populations,* as amended, to develop an Environmental Justice Strategy that identifies and addresses disproportionately high and adverse human health or environmental effects of their programs, policies, and activities on minority populations and low-income populations. CEQ (Council on Environmental Quality), with assistance from the Environmental Protection Agency (EPA) and other agencies, has developed guidance to assist Federal agencies with their NEPA procedures so that environmental justice concerns are effectively identified and addressed. CEQ's *Environmental Justice Guidance under the National Environmental Policy Act* advises agencies to consider the composition of the affected area, to determine whether minority populations, low-income populations, or Indian tribes are present in the area affected by the proposed action, and if so, whether there may be disproportionately high and adverse environmental effects to these populations.

3.7.3 References

California Department of Finance (DOF), 2007a; State of California, Department of Finance, E-4 Historical Population Estimates for City, County and the State, 1991-2000, with 1990 and 2000 Census Counts. August 2007.

California Department of Finance, 2007b; State of California, Department of Finance, E-8 Historical Population and Housing Estimates for Cities, Counties and the State, 1990-2000. August 2007.

California Department of Finance 2010a, State of California, Department of Finance, E-1 Population Estimates for Cities, Counties and the State with Annual Percent Change — January 1, 2009 and 2010. May 2010.

California Department of Finance 2010b, State of California, Department of Finance, E-5 Population and Housing Estimates for Cities, Counties and the State, 2001-2010, with 2000 Benchmark, May 2010.

California Economic Development Department (EDD), 2010. Report 400C Monthly Labor Force Data for Counties Annual Average 2009 Revised – November, 2010. Available at: http://www.calmis.ca.gov/file/lfhist/09aacou.pdf.

Council on Environmental Quality (CEQ), 1997. *Environmental Justice – Guidance under the National Environmental Policy Act*. Executive Office of the President; Washington, D.C. Available at: http://www.nepa.gov/nepa/regs/ej/justice.pdf.

County of Sacramento, 2008. Sacramento County Housing Element 2008-2013. August 2008. Available at http://www.msa2.saccounty.net/planning/Documents/. Accessed in November 2010.

SACOG, 2006. Metropolitan Transportation Plan. March 2006. Available at http://www.sacog.org/mtp/pdf/MTP2006/2006%20MTP%203-16-06.pdf. Accessed in November 2010.

SACOG, 2008. MTP2035 Population, Housing and Employment Projections, July 2008. Available online at: http://www.sacog.org/demographics/. Accessed in November 2010.

U.S. Census Bureau, 2000a. Census 2000 Demographic Profile Highlights: by location. Available online at: http://factfinder.census.gov/. Accessed in November, 2010.

U.S. Census Bureau, 2000b. Table QT-P3: Table QT-P4: Race, Combinations of Two Races, and Not Hispanic or Latino: 2000. Census 2000 Summary File 1. Available online at: http://factfinder.census.gov/. Accessed in November 2010.

U.S. Census Bureau, 2000c. Table QT-P88: Ratio of Income in 1999 to Poverty Level Census 2000 Summary File 3.

U.S. Census Bureau, 2011. American Fact Finder. Available online at: http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml. Accessed October 2012.

3.8 Geology, Soils and Mineral Resources

3.8.1 Existing Setting

This section discusses the affected environment with respect to geology, soils, mineral resources and paleontological resources for the Plan area. This section includes relevant information from the Elverta Specific Plan Final EIR performed by Sacramento County Department of Environmental Review and Assessment (DERA, 2007).

3.8.1.1 Geology

Regional Physiographic Setting

The Plan area is located in the Sacramento Valley and lies centrally within the Great Valley geomorphic province of California. The Sacramento Valley forms the northern third of the Great Valley, which includes approximately 33,000 square miles and fills a northwest-trending structural depression bounded on the west by the Great Valley Fault Zone and the Coast Ranges, and on the east by the Sierra Nevada and the Foothills Fault Zone. The Great Valley is composed of thousands of feet of sedimentary deposits that have undergone periods of subsidence and uplift over millions of years. During the Jurassic and Cretaceous periods of the Mesozoic era (206 to 144 million years ago), the Great Valley existed in the form of an ancient ocean floor. By the end of the Mesozoic era, the northern portion of the Great Valley began to fill with sediment as tectonic forces caused uplift of the basin. By the time of the Miocene epoch, approximately 24 million years ago, sediments deposited in the Sacramento Valley were mostly of terrestrial origin.

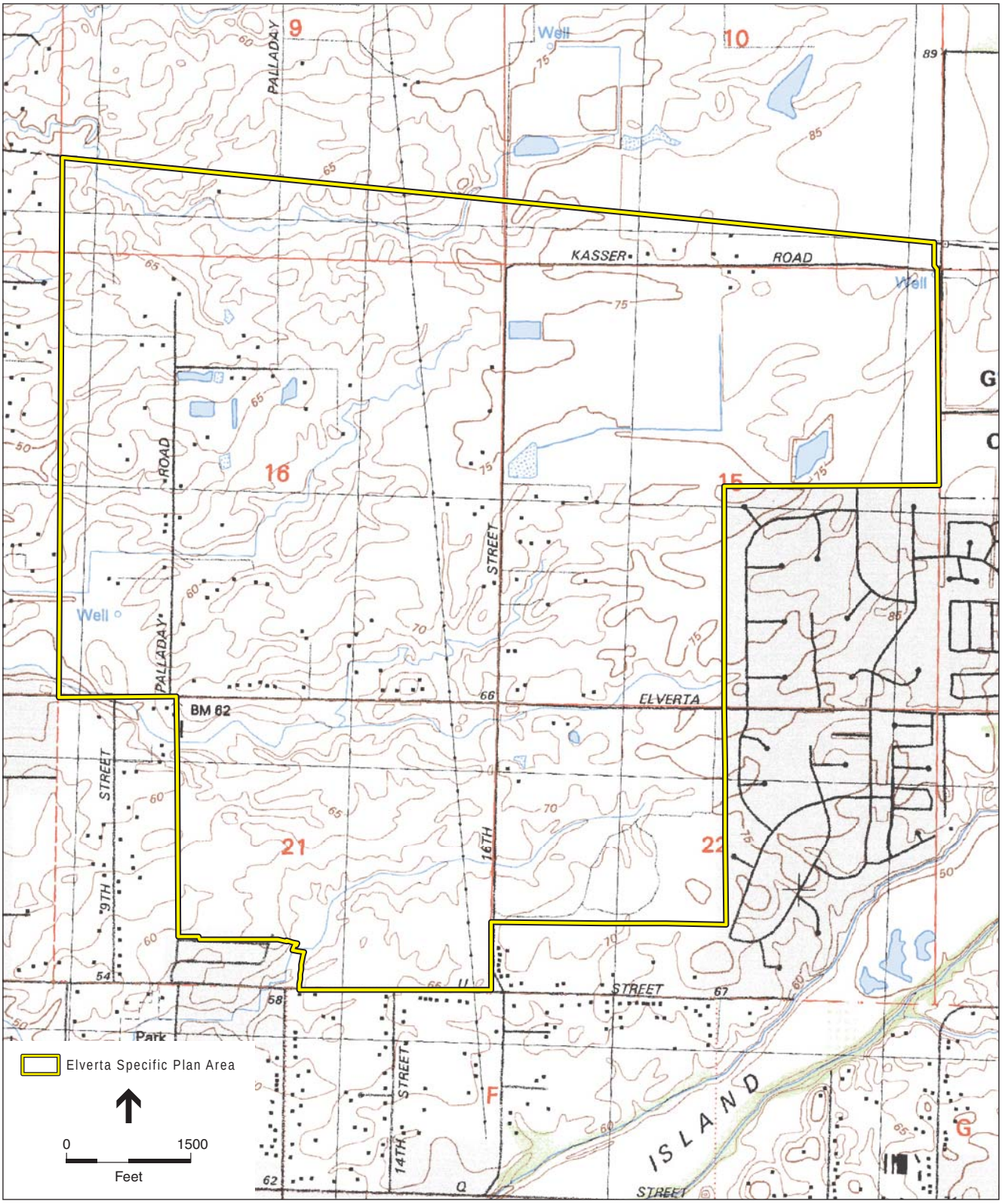
Most of the surface of the Great Valley is covered with Holocene (11,000 years to present day) and Pleistocene (i.e., 11,000 – 1,800,000 years before present) alluvium deposits. This alluvium is composed of sediments from the Sierra Nevada to the east and the Coast Ranges to the west that were carried by water and deposited on the valley floor. Siltstone, claystone, and sandstone are the primary types of sedimentary bedrock units found in the Great Valley. Older Tertiary deposits underlie the Quaternary alluvium.

Local Geology

The Plan area is located in the central portion of the Great Valley geomorphic province of California. The Great Valley lies between the mountains and foothills of the Sierra Nevada Range to the east and the California Coast Ranges to the west. The geologic formations of the Great Valley are typified by thick sequences of alluvial (river) sediments deposited during the filling of a large ancient basin. The near-surface soils are underlain by the lower member of the Riverbank Formation (USGS, 1985). This geologic unit consists of semiconsolidated gravel, sand, clay and silt.

Topography

Topography within the Plan area is mostly flat with some low hills and ranges from 50 to 85 feet in elevation (**Figure 3.8-1**).



SOURCE: USGS 7.5' Topographic Quandrangle (Rio Linda, CA 1992); and ESA, 2011

Elverta Specific Plan EIS . 207431

Figure 3.8-1
Site Topography

Seismic and Geologic Hazards

The Safety Element of the Sacramento County General Plan (General Plan) provides a discussion of the seismic and geologic hazards of the County (2011).

Faulting

No major active faults are located in Sacramento County, but subsurface inactive faults have been located. Inactive faults in the County include the Midland fault in the Delta, a presumably inactive fault in Citrus Heights near Antelope Road (the nearest to the Plan area), and the Bear Mountain fault zone to the east in Amador and El Dorado Counties.

Groundshaking

Though no active faults are known to exist in the County, the County could experience groundshaking. Historically, Sacramento County experienced little damage in previous earthquakes centered in Yolo County (1892), San Francisco (1906), Oroville (1975), and during the Loma Prieta earthquake on the San Andreas fault that was centered under the Santa Cruz Mountains (1989). The maximum expected intensity of groundshaking for the Plan area is considered to be low, according to the California Division of Mines and Geology (as cited in the General Plan).

Liquefaction and Seiches

The only two known areas of the County which are subject to liquefaction are the downtown area and the Delta. Seiches may occur under conditions where restricted water is of a certain depth, such as in reservoirs, lakes, or channels. The Plan area is not subject to susceptible to liquefaction or seiches.

Subsidence

Subsidence is ground settling or sinking. The Plan area is not subject to known subsidence, but may have the potential for subsidence caused by the pumping of water from subsurface water tables. This type subsidence has occurred in southern parts of the County.

Expansive Soils

Expansive soils consist of clays that expand and shrink depending on volume of water available. The shrink-swell potential of the San Joaquin silt loam soils is high.

Landslides and Erosion

Only a narrow strip of the northeastern part of the County is considered at risk for landslides; therefore the Plan area is not at risk for landslides. The highest risk for erosion in the Plan area would be associated with construction activities where soils may be exposed for some length of time. This issue is discussed further below under “Soils”.

Unique Physical Features

There are no unique soils or geologic features at the site; however, the hardpan soils and undulating surface are such that rainwater accumulates, creating ponds during the wet season that linger until

late spring. The climate supports highly specialized plant communities within the ponds, which are commonly called "vernal pools". These communities are discussed in detail in **Section 3.4** (Biological Resources).

3.8.1.2 Soils

Near-surface soils of the Plan area consist of six soil types (USDA, 1993):

1. San Joaquin fine sandy loam 0–3% slopes (formed in alluvium from mixed granitic rocks)
2. San Joaquin fine sandy loam 3–8% slopes
3. Xerarents in filled areas (formed in material mixed by leveling activities)
4. Bruella soils in intermediate areas (formed in alluvium from granitic rocks)
5. Durixeralfs in cut areas (formed in alluvium from mixed granitic rocks)
6. Hedge loam (formed in alluvium from granitic rocks)

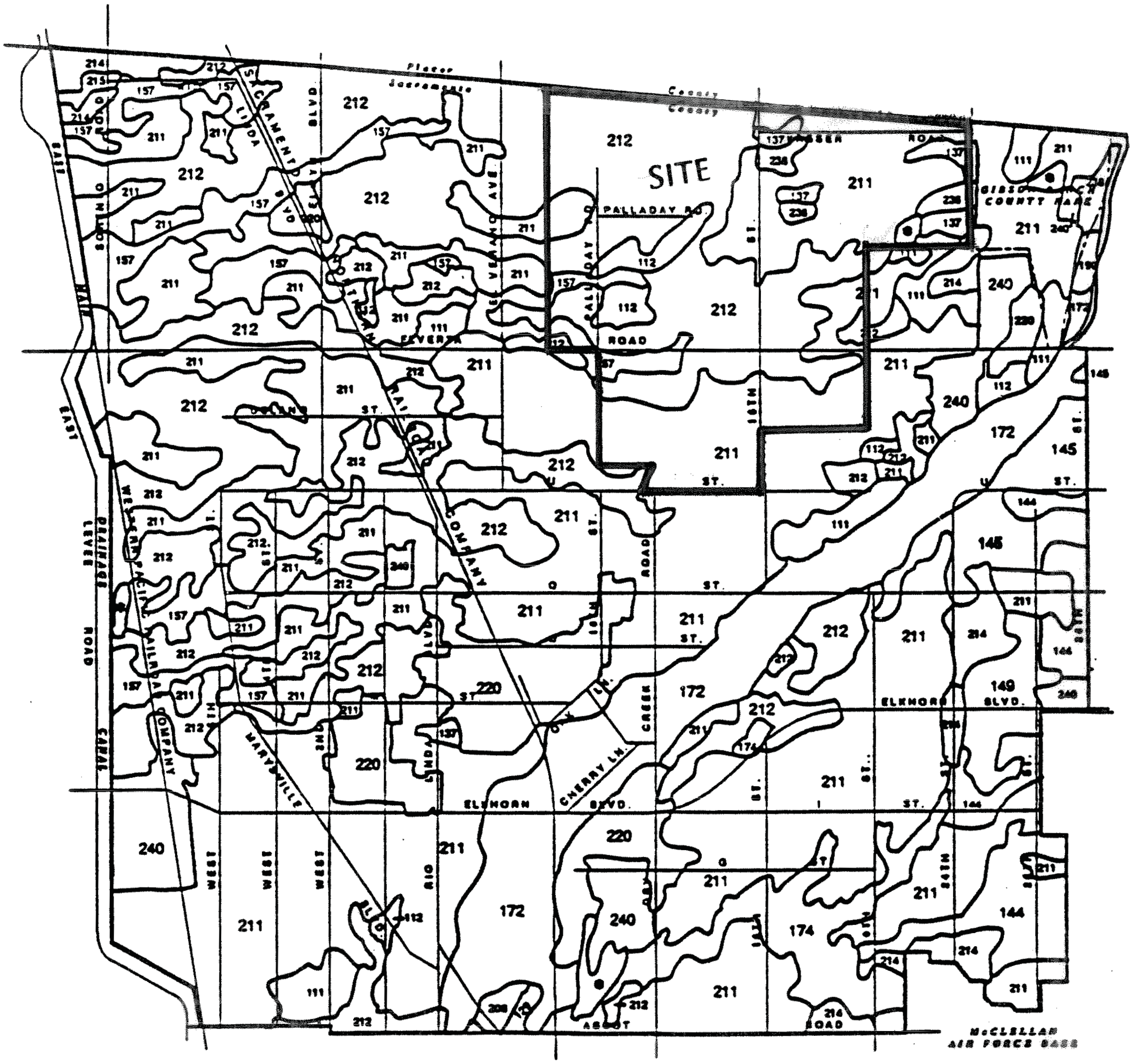
Near-surface soils are predominantly San Joaquin fine sandy loam with the other types comprising complexes within the San Joaquin type as seen in **Figure 3.8-2**. Slopes are primarily zero (due to land leveling) to approximately three percent. The San Joaquin soils consist of moderately deep, slowly permeable soils that have developed in old valley fill consisting of alluvium from granite sources. These San Joaquin soils contain an indurated hardpan at a depth of about three feet, which greatly inhibits agricultural activities. These soils are primarily suitable for irrigated hay and pasture or dry land crops.

Land Capability Classification

The U.S. Department of Agriculture, Natural Resources Conservation Service (formerly the Soil Conservation Service) prepared a soils survey map of Sacramento County using the "Land Capability Classification" (LCC) system. The LCC system shows, in a general way, the suitability of soils for most kinds of field crops. This system classifies soils into eight categories designated by Roman numerals. Arable lands are organized into four classes, Class I through IV. Nonarable lands, not suitable for long-term cultivation, are labeled into Class V through VIII.

Soil mapping for the Plan area utilizing the LCC system is shown on **Figure 3.8-1**. The majority of the planning area is comprised of Class III and IV soils, primarily of the San Joaquin series. Two small concentrations of Bruella soils are located within the planning area, east of Palladay Road. This portion of the planning area is currently developed with agricultural-residential uses in the AR-5 zone. According to the survey, these soils are rated as Class II and may be considered prime farmland, where irrigated; non-irrigated Bruella soils are rated as Class III and are not considered prime farmland.

The survey indicates that the soils found in the Plan area have historically and predominantly supported rangeland, dry-farmed crops, irrigated pasture and haycrops. Other irrigated crops listed as typically cultivated on soils of the Plan area are corn, rice, alfalfa and ladino clover for seed, as well as the most often dry-farmed crops of wheat, barley and milo.



Map Symbol	Soil Type	LCC Class
112	*Bruella sandy loam 0-2% slope*	*II*
137	*Durixeralfs 0-1% slope*	*IV*
157	*Hedge loam 0-2% slope*	*III*
211	*San Joaquin fine sandy loam 0-3% slope*	*III*
212	*San Joaquin fine sandy loam 3-8% slope*	*III*
238	*Xerarents – San Joaquin complex 0-1%*	*III*

N

NOT TO SCALE

SOURCE: County of Sacramento DERA, 2007; and ESA, 2010

Figure 3.8-2
SCS Soils Conservation Map

3.8.1.3 Mineral Resources

The County General Plan Land Use Diagram does not classify the Plan area as either an Aggregate Resource Area or a Resource Conservation Area. No significant mineral resources are known to be located at the Plan area.

3.8.1.4 Paleontological Resources

The Plan area is in the middle of the Central Valley where the geology consists of young basin/flood deposits that are likely Holocene (less than 10,000 years) in age (CGS, 2010). Surface soils are unlikely to contain significant fossils because they are too young and would not have had enough time to fossilize plant/animal remains. Besides being un-fossilized, plant/animal remains buried in recent (i.e. less than 10,000 years) geologic deposits are unlikely to represent extinct species. Significant vertebrate fossils are usually found in older, Pleistocene-age deposits (10,000 to 1.8 million years old). Such deposits could be present in deeper layers beneath the surface (i.e., under the Holocene-age deposits), but probably at much greater depths than would be affected by excavation activities facilitated by the Specific Plan. Based on the geologic formations of the Plan area, the potential of impacts on paleontological resources and likelihood of the presence of significant fossils is unlikely and will not further be discussed.

3.8.2 Regulatory Setting

3.8.2.1 Federal

National Pollutant Discharge Elimination System

A discussion of the National Pollutant Discharge Elimination System permit program, which is relevant for controlling on-site erosion, is included in **Section 3.10.2.1**.

3.8.2.2 State

California Building Standards Code

Sacramento County currently requires that new building plans comply with the 2010 California Building Standards Code (CBC) which is based on the International Building Codes. The CBC is codified in the California Code of Regulations Title 24, Part 2. The purpose of the CBC is to establish minimum standards to safeguard the public health, safety and general welfare through structural strength, means of egress facilities, and general stability by regulating and controlling the design, construction, quality of materials, use and occupancy, location, and maintenance of building and structures throughout California. This includes seismic and soil design parameters for new construction.

3.8.3 References

California Geological Survey (CGS), 2010, Geologic Map of California, Compiled by Jennings, C.W. (1977), with modifications by Gutierrez, C., Bryant, W., Saucedo, G., and Wills, C. (2010), CGS Geologic Data Map No. 2, scale 1:750,000.

DERA, 2007. Final Environmental Impact Report – Elverta Specific Plan and Associated Subdivision Map Known as Countryside Equestrian Estates. County of Sacramento Department of Environmental Review and Assessment Published May 2007.

Sacramento County. 2011. *General Plan of 2005 – 2030*. Amended November 9, 2011.

USDA, Soil Conservation Service, 1993. Soil Survey of Sacramento County, California.

USGS, 1985. Geologic Map of the Late Cenozoic Deposits of the Sacramento Valley and Northern Sierra Foothills, California.

This Page is Intentionally Left Blank

3.9 Hazards and Hazardous Materials

3.9.1 Existing Setting

This section addresses the existing setting relevant to hazards and hazardous materials associated with historic and current uses of the Plan area (or project site) and vicinity. This includes the results of environmental database records searches conducted for the Plan area. Information in this section is also based on the EIR for the Plan area prepared by the County of Sacramento Department of Environmental Review and Assessment (DERA, 2007); an Environmental Site Assessment of the Elverta Specific Plan Area by Wallace-Kuhl Associates (WKA, 1999); an updated 2011 Environmental Data Records (EDR) Radius Map™ Report with GeoCheck® (EDR, 2011), and digital files related to the Monroe Landfill obtained from the Sacramento County Environmental Management Department in 2011.

As described in the 2007 Elverta Specific Plan EIR, WKA reviewed the summary of two studies for a larger land area that included the project area. The studies, entitled Rio Linda/Elverta Community Plan Technical Studies, Phase I - Existing Conditions, Hazardous Materials (February 1995), and Hazardous Materials, Phase II: Resource Assessment and Mitigation, Rio Linda Community Plan Area, Rio Linda California, were completed by Dames and Moore. WKA concurred with Dames and Moore's conclusions as they would pertain to the project area, in that the majority of the project area is unlikely to be encumbered by hazardous materials based on its site history. Dames and Moore and WKA indicated that the Monroe Landfill should attain proper regulatory agency closure status prior to development on and near that location.

3.9.1.1 Historic Land Uses

As described in the 2007 Elverta Specific Plan EIR, WKA reviewed historic US Geographic Survey (USGS) topographic maps of the project area at the California State Library in Sacramento for evidence of past activity that may have generated toxic substances. Topographic maps covering the years 1951, 1967, 1980 and 1992 were available for review; the results of the map reviews are summarized below. The current (1992) version of the USGS topographic map that includes the project area is included in **Figure 3.8-1** in **Section 3.8** (Geology Chapter).

The 1951 map showed that the current main roadways in the plan area were in place (i.e., Elverta Road, 16th Street, Palladay Road and Kaiser Road). Some of the roadways were unimproved at that time. Overhead high-voltage electrical lines supported by towers were mapped bisecting the central portion of the project area. On the 1967 map all the improved streets within the project area, including the portion of U Street that bounds the southernmost area of the Specific Plan, were identified by their current names. One water supply well was mapped within the project area for the first time; this well was an irrigation well that still exists near the northeasterly corner of the project area. The easterly portions of two of the intermittent streams, located in the northeasterly portion of the project area, were no longer mapped or were channelized. Three irrigation tailwater holding ponds were also mapped by this time in the northeasterly portion of the project area. The Gibson Ranch County Park was mapped east of the northeasterly portion of the project area. Two

sewage disposal ponds were mapped 2,000 feet east of the project area's southeasterly corner. These ponds likely served the subdivisions located east of the Specific Plan area and were decommissioned after the construction of the Sacramento County Regional Wastewater Treatment Plant. On the 1980 map, minor change had occurred on the project area relative to the 1967 mapping. On the 1992 map, the previously mentioned, off site sewage disposal ponds were no longer mapped.

In summary, the reviewed topographic maps did not indicate the presence of large manufacturing facilities, large aboveground storage tanks or tank farms, airfields, transportation hubs, mining features or mine tailings currently or historically located within the project area. The Monroe Landfill does not appear as a mapped feature on any of the reviewed USGS sheets. Vast portions of the Plan area remained relatively unchanged during the past approximate century based on the available topographic mapping.

No obvious UST fueling islands were visible throughout the historic photographic coverage. The existence of USTs, however, could not be ruled out through aerial photography analysis alone since in some instances overhanging mature tree limbs and other developmental items and natural features can obscure the ground surface when looking for surface features during aerial photography review. During ground reconnaissance and private airplane fly-over WKA did not observe any obvious fueling islands. Similarly, the reviewed government agency databases did not reveal any registered USTs remaining in the Elverta Specific Plan area.

3.9.1.2 Identified Environmental Contamination Concerns

Monroe Landfill

The Monroe Landfill has been inactive since the late 1950's. The landfill is 5 acres and located within a 20± acre parcel along Palladay Road. WKA conducted a Preliminary Phase I Environmental Site Assessment noting that the Monroe Landfill was an inactive landfill listed on the Department of Toxic Substances Control (DTSC) CALSITES and (California Integrated Waste Management Board (CIWMB, now CalRecycle) Closed and Inactive Sites databases. The landfill site has an estimated volume of 5,000 tons of domestic waste contained within a five-acre area on a 20-acre parcel. The landfill has a depth of 12 to 15 feet based on reviewed documents. Groundwater is known to be approximately 85 feet bgs (below ground surface).

CalRecycle is the primary agency that regulates landfills. The Sacramento County Environmental Management Department [EMD] is the [Local Enforcement Agency (LEA)] for CalRecycle. The County assigned Monroe Landfill a Site Priority of C2 criteria as follows: "Residential, commercial, industrial, park, recreation, or environmentally sensitive areas within one mile of the site with no confirmed release of landfill gas or leachate or no release of landfill gas or leachate with significant threat of pollution. Minimal action warranted to prevent human contact with waste." Evidence of landfill gas above regulatory levels of concern could upgrade Site Priority rating (DERA, 2007).

The Regional Water Quality Control Board (RWQCB) has no groundwater or leachate monitoring records for the landfill. A Solid Waste Assessment Test (SWAT) has not been conducted for

the Monroe Landfill. Completion of a SWAT and attainment of proper regulatory agency closure status prior to development on or near the landfill is recommended (DERA, 2007).

The Elverta Specific Plan Property Owners Group submitted a report entitled "Physical and Hydrogeological Investigation Report for the Elverta Landfill", which was prepared by Jacobson Helgoth Consultants (JHC) and dated June 2004. The report included a landfill gas and groundwater quality evaluation but landfill property owners and the property owners to the southeast and west denied access to JHC so no samples were taken from these properties. JHC's investigation work plan was reviewed and approved by the LEA and the RWQCB (DERA, 2007).

In March and May of 2004 JHC sampled the eight pre-existing gas monitoring probes on the Gibson Ranch LLC (aka Kaufman & Broad) property located just north of the landfill, as well as one new gas probe on the Monroe property located just south of the landfill property. Methane was observed in all nine gas probes, and the methane levels increased between March and May of 2004; however, all observed levels were extremely low. The increased levels between March and May were likely due to normal seasonal fluctuations and changes in atmospheric pressure. All observed levels were below 1,100 ppm-v (or parts per million by volume), well below the 5% methane (50,000 ppm-v) [or 100% of the Lower Explosive Limit (LEL)] regulatory limit for perimeter gas probes at closed landfills. This regulatory limit is based on the LEL where gas concentration can become flammable (DERA, 2007).

JHC installed four monitoring wells for sampling groundwater quality, located on properties to the north, northeast, south and southwest of the landfill. The wells were analyzed for dissolved metals, inorganic parameters, and volatile organic compounds (VOCs). VOCs were found in only one well, and at trace levels below reporting levels. The majority of inorganic and dissolved metal parameters in the samples appeared to be within a natural range (JHC, 2004).

In light of the above, the DERA 2007 FEIR includes mitigation measures requiring that a landfill gas assessment be conducted prior to any development on properties within 1,000 feet of the landfill property, and that a groundwater quality assessment be conducted in the vicinity of the landfill prior to any construction of new municipal or domestic water supply wells within the Plan area.

The Monroe Landfill is located at 8784 Palladay Road (non-participant APN 202-0070-024). On January 5, 2011 a Geotracker search revealed that the Monroe Landfill is a DTSC Cleanup Site designated as "Refer to RWQCB as of 8/4/1981" with an anonymous phone tip as the only activity dated 6/8/1981 (SWRCB, 2011a).

Zine's Garage

Zine's Garage is located at 220 Elverta Road, approximately one-half mile westerly and hydraulically crossgradient relative to the project area. According to a Hazardous Substance Storage Statement dated September 1984, four USTs were located on the property. The county files indicate that two of the USTs, both 1,000-gallon capacities, were removed in February 1988 and received closure status in August 1989. The other two USTs were removed in March 1998. During the 1998 removal Total Petroleum Hydrocarbons as Gasoline and Diesel (TPHG, D), Benzene, Toluene, Ethylbenzene

and Xylene (BTEX), Methyl Tert Butyl Ether (MTBE), and Total Lead were found in soils located in the dispenser area and in both tank pits. Additionally, perched groundwater at a depth of eight feet was sampled in the tank pits and found to contain TPHG, Xylene, MTBE and lead.

A Hazardous Materials Incident Report was filed at the County on July 19, 1993. The report indicates a complaint of waste oil, paint and possible battery acid was dumped in the gully next to Zine's Garage two years prior to the filing of the complaint. The report states that County workers who cleaned the gully reported no evidence of dumping in the vicinity of Zine's Garage.

Multiple reports, review and documents have been conducted since 2002. In March, 2008, the Fund made the recommendation that the Responsible Party implement the proposed air sparging without delay. As of April, 2010 the investigation has been underway for 12 years. As of March 15, 2010 the site was not ready for closure. The site has continued to have an open-site assessment status (SWRCB, 2011b).

Specific Property

One of the few examples of a site within the project area with obvious evidence of potential contamination is the non-participating property at 1309 Elverta Road (APN 202-0080-025). WKA was unable to walk this parcel although they were able to view it from the air. WKA was able to fly at a low altitude and observe a "boneyard" within and east of the on-site rural residence. Numerous dilapidated vehicles, truck trailers, mobile homes, camper trailers and camper shells were parked in the boneyard, along with tires, four Aboveground Storage Tanks (ASTs) and other miscellaneous abandoned items and stored items under tarps. Without direct access to the property, WKA could not determine whether the site has been impacted by hazardous materials. All of these materials should be removed from this parcel and properly disposed of or recycled off site, as appropriate. At the boneyard, surveyors did not observe obvious evidence of large-scale contamination, such as wide areas of stained soils or broad areas lacking in surficial vegetation. No ponds, pits or obvious burn piles were observed at the boneyard from the air. **Table 3.9-1** contains information on land uses for the participating parcels and includes recommendations for non-participating parcels that should undergo additional testing as determined by WKA (DERA, 2007). WKA had no recommendations for additional testing of the 14 parcels that are currently participating parcels. WKA did have recommendations for testing of 13 non-participating parcels. The recommendations related to the 13 non-participating parcels are included in this **Table 3.9-1** to provide context for the entire Plan area and also to allow easy identification of neighboring parcels that may represent some risk to the currently participating parcels.

TABLE 3.9-1
LAND USE/SITE TYPE SUMMARY[A]

Street Number	Street Name	APN	Site Type	Comments	Recommendations
8784	Palladay Road	202-0070-024 Non-Participating Parcel	Rural residential and Monroe's Landfill	Modular home, trailer, pole barn, farm implements, crane, livestock, fallow field, pond on northwest corner. County –listed landfill consists of elongate depressions (former trenches) on north and east sides of parcel, low hill with barn and debris piles near the barn located in the center of field (central portion of landfill).	Recommend completion of a SWAT
	16th Street	202-0070-013	Vacant land and former rural residential site	Former residential site consists of two concrete slabs (one elongate), domestic well, well pump motor and electrical service pole, debris piles. Typical residential site tree cluster. Residential site existed in 1951, buildings removed by 1992.	
	Palladay Road	202-0070-015	Abandoned rural and residential dry-farmed land	Abandoned residential site, four sheds, stem walls and concrete floor of former building sites west of residence, camper shell, abandoned truck, fallow fields. Site was developed by the 1960's.	
8515	16th Street	202-0070-018 Non-Participating Parcel	Rural residential	Modular home, barn, outbuildings, cars, trucks, camper trailers, farm implements, flatbed trailer, horse trailer, abandoned items, horse, fallow field.	Recommend additional field reconnaissance after debris removal; test surficial soils only if warranted based on new field observations.
	16th Street	202-0070-019 Non-Participating Parcel	Rural residential	Two out buildings, cars, trucks, farm implements, abandoned items, fallow land.	Recommend additional field reconnaissance after debris removal; test surficial soils only if warranted based on new field observations.
8209	16th Street/Elverta Road	202-0080-007	Fallow land		
1015	Elverta Road	202-0080-019	Rural residential	House, fallow land, east/west trending intermittent stream on north side of parcel.	
	Palladay Road	202-0080-020	Former residential site	Tree cluster from former building site, hobby olive orchard near road, minor debris.	
8201	Palladay Road	202-0080-047 Non-Participating Parcel	Two rural residential sites, strawberry fields	One abandoned rural residential site (east-central site). One rural residential site with a residence, detached garage. Strawberry fields grown on southeast corner of property since approximately 1996. Strawberry sales shed near southeast corner of parcel.	
1219 + 1223	Elverta Road	202-0080-052 Non-Participating Parcel	Rural residential	House, swimming pool, horse stalls, outbuilding, debris near horse area, fallow land. Poultry houses visible in 1963 and 1972 aerial photographs.	Recommend soil sampling and testing for persistent pesticides only around former poultry houses site.
1301	Elverta Road	202-0080-053	Rural residential	House, two outbuildings, horse run, fallow land, truck-farmed strawberry and corn fields near road.	
8220	Palladay Road	202-0080-058	Rural residential	House, orchard, southern half fallow land.	

TABLE 3.9-1 (Continued)
LAND USE/SITE TYPE SUMMARY[A]

Street Number	Street Name	APN	Site Type	Comments	Recommendations
1309	Elverta Road	202-0080-025 Non-Participating Parcel	Rural residential	House, swimming pool, pond, barn, pole barn, several abandoned/stored cars, trucks, vans, trailers, boats, campers, three AST's and miscellaneous items and debris. Miscellaneous items, vehicles and debris located on northeasterly portion of parcel. Site developed by 1981. Boneyard first appeared in 1989.	Recommend additional field reconnaissance after debris removal; test surficial soils only if warranted based on new field observations.
1000	Elverta Road	202-0170-004 Non-Participating Parcel	Rural residential	Two houses, poultry houses, concrete slabs from old building.	Recommend soil sampling and testing for persistent pesticides only around former poultry houses site.
	Elverta Road	202-0170-005 Non-Participating Parcel	Fallow land	Former poultry houses.	Recommend soil sampling and testing for persistent pesticides only around former poultry houses site.
	Elverta Road	202-0170-019	Fallow land, former farm site	Motor bike track located near southeast corner of parcel, former farm buildings site with orchard located on north side of parcel. Farm site built by 1963 and razed by 1989. Irrigation water well located at former farm site.	
	Elverta Road	202-0170-024	Fallow land	Wheel-marked trails on southern portion of parcel. Minor dumping on parcel near southwest corner.	
7645	Milldale Circle	202-0170-032 Non-Participating Parcel	Rural residential	House, fenced dirt yard north of residence with camper trailer, shed, debris piles.	
1801	Kasser Road	203-0010-013 Non-Participating Parcel	Rural residential	House, barn, outbuildings, truck-farmed rowcrops, fallow land. Concrete floors remain on the northeasterly portion of the parcel. Dumping area consisting of tires, concrete rubble, asphalt rubble and dirt on westerly portion of parcel.	Recommend additional assessment at dumping area and recommend soil sampling and testing for persistent pesticides only around former poultry houses site.
	Elverta Road	203-0040-007	Fallow land	East/west trending intermittent stream channel on north side of parcel.	
	Elverta Road	203-0040-008	Fallow land		
8300	16th Street	203-0040-021 Non-Participating Parcel	Rural residential	House, small vegetable garden, several outbuildings and poultry houses and pens (former hog house and pens), fallow land on the east side of the parcel.	Recommend soil sampling and testing for persistent pesticides only around hog/poultry houses and pens.

TABLE 3.9-1 (Continued)
LAND USE/SITE TYPE SUMMARY[A]

Street Number	Street Name	APN	Site Type	Comments	Recommendations
1695	Elverta Road	203-0040-042 Non-Participating Parcel	Rural residential	House, outbuildings, pole barn. Several parked/abandoned vehicles, debris around vehicle storage area. Fallow land on north side of parcel.	Recommend additional field reconnaissance after vehicles and debris removed; test surficial soils only if warranted based on new field observations.
1710	Elverta Road	203-0080-037 Non-Participating Parcel	Rural residential	One house, one modular home, one mobile home, swimming pool, large dried up pond, several outbuildings, one AST, horse yards, numerous abandoned/stored boats, vehicles, farm implements. Debris piles located within the vehicle/boat storage area. Strawberry fields on northwest side of parcel. Remainder of parcel is fallow land.	Recommend additional field reconnaissance after debris removal; test surficial soils only if warranted based on new field observations.
	Elverta Road	203-0080-038	Fallow land	Former farmstead site on Parcel 203-0080-039 extends onto the south side of this parcel.	
	16th Street/Elverta Road	203-0080-039	Fallow land	Motor bike race track on central portion of property. Former homestead site – tree cluster on southeast side of parcel. Pond located on central portion of parcel. Debris piles near pond and near northwesterly corner of parcel.	

a. This list contains APN's of participating parcels and APN's of non-participating parcels that contained recommendations as analyzed in the DERA 2007 report.

SOURCE: DERA, 2007, ESA 2011.

On-Site Wells

Approximately 65 rural residential sites and nine former or abandoned rural residential sites are located within the project area. These sites typically contain water supply wells. Farmstead sites also typically contain water supply wells. The majority of these sites generally appeared unencumbered with respect to potential hazardous materials contamination. Exceptions to this general observation are included in Table 3.9-1.

Distribution Electrical Powerlines

Overhead electrical power lines are located within street easements that bound and bisect the Plan area. Powerlines within and adjacent to the Plan area are powered at 12 kilovolts (kV) and are owned/operated by the Sacramento Municipal Utility District (SMUD). WKA did not observe obvious evidence of transformer leakage at accessible sites within the project area. Sites developed after 1979 generally received PCB-free transformers as part of the electrical service provided by SMUD. Some newer transformers are tagged "Non-PCB" with respect to PCB content. Sites within the project area developed in the early 1980s and later are unlikely to be associated with PCB-containing transformers. Many transformers within the Plan area most likely predate 1979 and are not tagged with respect to PCB content. These transformers are therefore of unknown PCB content. SMUD is, however, responsible for their transformers and will handle any situation in which a SMUD-owned transformer leaked. WKA did not observe any privately owned electrical transformers within the Plan area (DERA, 2007).

High-Voltage Electrical Transmission Lines

PG&E tower-mounted high-powered overhead transmission lines bisect the central portion of the project area. The 230 kV electrical powerlines are suspended by single towers that trend in a northwest/southeast direction. WKA contacted Mr. Norton with PG&E, who indicated that the transmission line, known as the Rio Oso line, is powered at 230 kV. Mr. Norton stated that the line runs between the Rio Oso substation to the north and the Tesla substation to the south. The transmission line serves other points between the Rio Oso and Tesla substations. The original towers installed in the 1930's were subsequently replaced with the current galvanized steel towers. (DERA, 2007)

Potential Air Emissions Sources

Excluding area traffic on existing surface streets and single-family residences with fireplaces or other home heating devices within and adjacent to the project area, WKA observed no field evidence indicating any sources of potential, substantial hazardous materials air emissions in or within 500 feet of the project area. WKA also contacted Bob Rogen with the Sacramento Metropolitan Air Quality Management District (SMAQMD) regarding potential hazardous materials air emissions within the project area. Mr. Rogen indicated that no facilities within the project area have air emissions permits or air emissions violations on file with the SMAQMD (DERA, 2007).

Asbestos

In 1978/79 the federal government banned nearly all uses of friable asbestos in building materials. Therefore, existing structures within the project area built subsequent to 1979 are considerably less likely to contain asbestos in their building materials. However, most of the existing structures within the project area predate 1979 and potentially contain asbestos in their building materials. WKA recommended, therefore, that abatement asbestos surveys be completed for each of the structures within the project area intended to be razed. Consistent with this recommendation, an asbestos clearance typically is required prior to municipal authorities issuing a demolition permit for the building(s) under consideration.

Buried Natural Gas Pipeline

WKA conducted a telephone interview with Lou Norton from the Real Estate Division of Pacific Gas and Electric Company (PG&E), regarding the utility easements within and near the project area. Mr. Norton indicated that no major (high pressure) natural gas pipeline routes are located in the project area. Typical neighborhood (low pressure) natural gas distribution pipelines are located within the subdivisions adjacent to the east of the project area. (DERA, 2007)

Pesticides

WKA anticipated that the potential for significant concentrations of persistent pesticide compounds to exist in surface soils of the majority of the project area is low. Two exceptions to this general observation would be the possibility that DDT, lindane and/or some of the other persistent pesticides may have been used around the hog/poultry farm sites for fly control, and/or applied to the small historic orchards.

Radon Potential

The California Statewide Radon Survey Interim Results, based on the EPA/State Department of Health Services State Radon Survey, predicts that only 3.6% of homes in Sacramento County would exceed the EPA's recommended level of 4 pCi/l. Additionally, California ranks as the third lowest for percentage of homes exceeding 4 pCi/l, of the 33 states participating in the study. (DERA, 2007)

Specific indoor radon information regarding the project area can only be obtained through a sampling and testing program for existing or future buildings. EPA generically recommends that all owners test their homes or commercial buildings for radon. Site-specific geology, construction materials and methodologies, use habits of building occupants, and the quality of construction can all affect indoor radon results. Based on the low percentage of homes predicted to exceed the EPA's recommended exposure level as described above, the potential for radon concentrations exceeding 4 pCi/l within the project area is estimated to be low.

3.9.1.3 Agency Database Review

WKA identified no potential or confirmed, state or federal "Superfund" sites within the project area during review of the former DHS's Bond Expenditure Plan, the EPA's Comprehensive

Environmental Response, Compensation and Liability Information System (CERCLIS) and National Priorities List (NPL), and the Cal-EPA's list of Active Annual Workplan Sites. Databases published by other of the above-named regulatory agencies indicate no known occurrences of the following within the project area: contaminated municipal groundwater supply wells; toxic pits; active landfills, transfer or material recovery stations; or producing or abandoned DOG petroleum wells. One inactive landfill is listed on the DTSC CALSITES and CIWMB Closed and Inactive Sites databases: Monroe Landfill. (DERA 2007)

Based on WKA database search, other than Monroe Landfill and 8645 Palladay Road, no registered hazmat-related sites are located within the Specific Plan area. The Placer County EHD lists reveal that no county-registered UST or AST facilities are located on or within one-half mile of the subject property. Additionally, the Placer County EHD lists reveal that no facilities registered for the use and/or storage of hazardous materials are located within one-half mile of the subject property (WKA, 1999).

In addition to the above review, ESA requested updated reports performed by Environmental Data Resources, Inc. (EDR, 2011). In the Radius Map Report, EDR identified no potential or confirmed state or federal "Superfund" sites or NPL sites within the Plan area.

3.9.2 Regulatory Setting

3.9.2.1 Federal

U.S. Environmental Protection Agency (EPA)

U.S. EPA is the agency responsible for enforcement and implementation of several federal laws and regulations pertaining to hazardous materials. Applicable federal regulations pertaining to hazardous materials are contained in the Code of Federal Regulations (CFR) Titles 29, 40, and 49. Hazardous materials, as defined in the CFR, are listed in 49 CFR 172.101. The following laws govern management of hazardous materials:

- Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA, also called the Superfund Act) (42 USC 9601 et seq.); and
- Superfund Amendments and Reauthorization Act (SARA) of 1986 (Public Law 99–499)
- Resource Conservation and Recovery Act of 1976 (RCRA) (42 U.S. Code [USC] 6901 et seq.);

Comprehensive Environmental Response, Compensation and Liability Act (Superfund) and Amendments

Superfund is the name given to the environmental program established by CERCLA of 1980, as amended, to address releases of hazardous substances, including abandoned hazardous waste sites. It allows the U.S. EPA to clean up such sites and to compel responsible parties to perform cleanups or reimburse the government for U.S. EPA-lead cleanups. The Superfund cleanup process involves

steps to assess sites, place them on the NPL, and establish and implement appropriate cleanup plans. No superfund or SPL sites are located within 2 miles of the center of the project area.

Resource Conservation and Recovery Act

Under RCRA, U.S. EPA regulates hazardous waste from the time that the waste is generated until its final disposal. The RCRA also gives U.S. EPA or an authorized state the authority to conduct inspections to ensure that individual facilities are in compliance with regulations and to pursue enforcement action if a violation is discovered. The U.S. EPA can delegate its responsibility to a state if the state's regulations are at least as stringent as the federal regulations. The U.S. EPA delegated its RCRA authority to DTSC for the issuance of hazardous waste disposal permits. The RCRA was updated in 1984 by the passage of the federal Hazardous and Solid Waste Amendments, which required phasing out land disposal of hazardous waste.

Federal Insecticide, Fungicide, and Rodenticide Act

The Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) (7 USC 136 et seq.) provides federal control of pesticide distribution, sale, and use. The U.S. EPA was given authority under FIFRA to register (license) all pesticides used in the United States. Registration ensures that pesticides will be properly labeled and that if used in accordance with specifications, they will not cause unreasonable harm to the environment. FIFRA require users (farmers, utility companies, and others) to register when purchasing pesticides. Later amendments require users to take exams for certification to apply pesticides.

Toxic Substances Control Act

The Toxic Substances Control Act of 1976 (15 USC 2605) banned the manufacture, processing, distribution, and use of Polychlorinated Biphenyl or PCBs except in totally enclosed systems. PCBs are considered hazardous materials because of their toxicity; they have been shown to cause cancer in animals, along with effects on the immune, reproductive, nervous, and endocrine systems. The U.S. EPA Region 9 PCB Program oversees remediation activities of PCBs in California. 40 CFR Section 761.30(a)(1)(vi)(A) states that all owners of electrical transformers containing PCBs must register their transformers with U.S. EPA. The manufacturer must mark specified electrical equipment that it manufactured between July 1, 1978, and July 1, 1998, that does not contain PCBs with the statement "No PCBs" (Section 761.40[g]). Transformers and other items manufactured before July 1, 1978, containing PCBs must be marked as such.

U.S. Department of Transportation

The U.S. Department of Transportation (DOT), in conjunction with U.S. EPA, is responsible for enforcement and implementation of federal laws and regulations pertaining to the transportation of hazardous materials. The Hazardous Materials Transportation Act of 1974 (49 USC 5101 et seq.) directs DOT to establish criteria and regulations regarding safe storage and transportation of hazardous materials. Hazardous materials regulations are contained in 49 CFR 171–180 and address transportation of hazardous materials, types of materials defined as hazardous, and the marking of vehicles transporting hazardous materials. In particular, 49 CFR 173, titled "Shippers' General Requirements for Shipments and Packaging," defines hazardous materials for transportation purposes. A portion of

the code (49 CFR 173.3) provides specific packaging requirements for shipment of hazardous materials. The code in 49 CFR 173.21 lists categories of materials and packages that are forbidden for shipping. The code in 49 CFR 177, titled "Carriage by Public Highway," defines unacceptable hazardous materials shipments.

Occupational Health and Safety Administration

The Occupational Safety and Health Administration (OSHA) of the U.S. Department of Labor is responsible for enforcing and implementing federal laws and regulations pertaining to worker health and safety. Workers at hazardous waste sites must receive specialized training and medical supervision according to the Hazardous Waste Operations and Emergency Response regulations (29 CFR 1910.120). OSHA sets federal standards for workplace training, exposure limits, and safety procedures for the handling of hazardous substances and other hazards. It establishes criteria that each state uses in its own worker health and safety programs. The California Department of Industrial Relations, Division of Occupational Safety and Health Administration (Cal/OSHA) assumes primary responsibility for developing and enforcing work place safety regulations within the State.

3.9.3 References

DERA, 2007. Final Environmental Impact Report – Elverta Specific Plan and Associated Subdivision Map Known as Countryside Equestrian Estates. County of Sacramento Department of Environmental Review and Assessment Published May 2007.

Elverta Specific Plan Area Preliminary Site Assessment, Wallace-Kuhl Associates, August 1999.

Environmental Data Reports (EDR), 2011. Environmental Data Records (EDR) Radius Map™ Report with GeoCheck®, Elverta Road/16th Street, Elverta, CA 95626.

Jacobson Helgoth Consultants, Inc., 2004. Physical and Hydrogeological Investigation report for the Elverta Landfill prepared for Elverta Specific Plan Owners Group

State Water Resource Control Board (SWRCB), 2011a. Geotracker records search accessed on-line January 5, 2011 at: http://geotracker.swrcb.ca.gov/map/?CMD=runreport &myaddress=8784+palladay+road%2C+Sacramento%2C+ca

State Water Resource Control Board (SWRCB), 2011b. Geotracker records search accessed on-line January 5, 2011 at: http://geotracker.swrcb.ca.gov/map/?CMD=runreport&myaddress =8784+palladay+road%2C+Sacramento%2C+ca

Wallace-Kuhl Associates (WKA), 1999. Environmental Site Assessment Elverta Specific Plan Area, August 19, 1999.

3.10 Hydrology, Flooding and Water Quality

3.10.1 Existing Setting

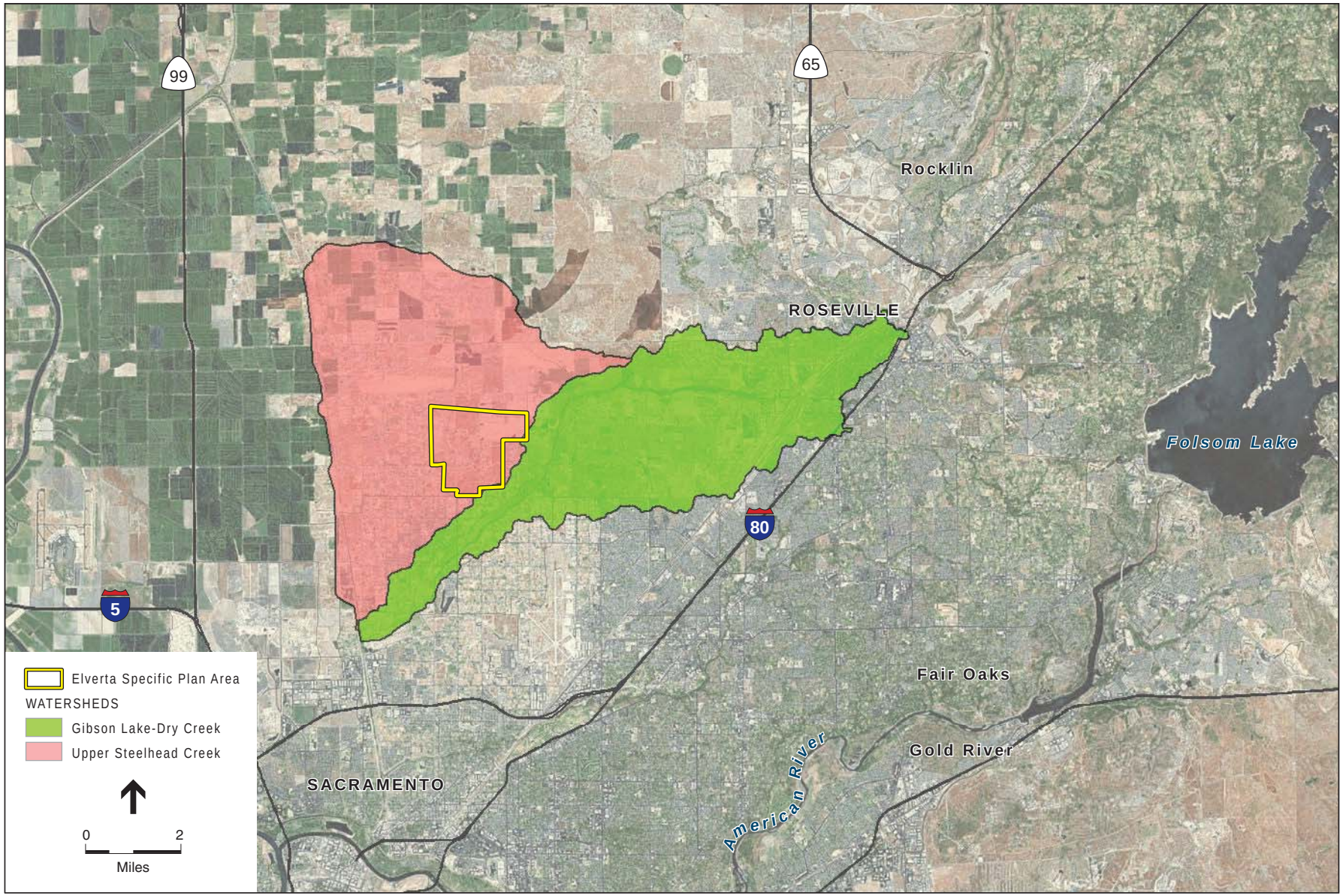
This section identifies hydrology, water quality, and flooding baseline conditions for the project site and vicinity. This includes a discussion of the extent of floodplains on site and along nearby parcels, as well as existing surface water, groundwater, and water quality conditions. This section is primarily based on the Draft EIR performed by Department of Environmental Review and Assessment (DERA, 2007). Information from the DERA Draft EIR was cross-checked against current data and information, and updated, as applicable.

3.10.1.1 Surface Hydrology

The project site is located within the larger Sacramento River watershed, in the American River subregion. The site is primarily located within the Steelhead Creek sub-watershed (formerly the Natomas East Stream Group) as shown on **Figure 3.10-1**. This sub-watershed includes a group of 13 tributaries draining approximately 27 square miles, all of which outfall to Steelhead Creek (formerly Natomas East Main Drainage Canal). The topography of the project site is flat to gently undulating, with elevations ranging from a high of about 85 feet in the northeast to a low of about 50 feet in the west/southwest. A map of the existing major drainage basins on the project site is shown as **Figure 3.10-2**. Several shallow intermittent drainages with minimal (primarily grassy) vegetation cross the planning area, conveying site runoff generally to the west/southwest. One intermittent drainage at the northwest corner of the project site drains to the northwest into Placer County (i.e., Dry Creek), but then turns southwesterly and reenters Sacramento County shortly downstream of the project area. The site's intermittent drainages flow downstream into small unnamed waterways until reaching the NEMDC, approximately 2.3 miles downstream of the project site. The NEMDC then drains to the south and then west, and eventually outfalls to the Sacramento River at the confluence with the American River. The onsite drainages are uncontrolled waterways still in their natural state, except where agricultural development has created diversions or realignment of the channels.

3.10.1.2 Surface Water Quality

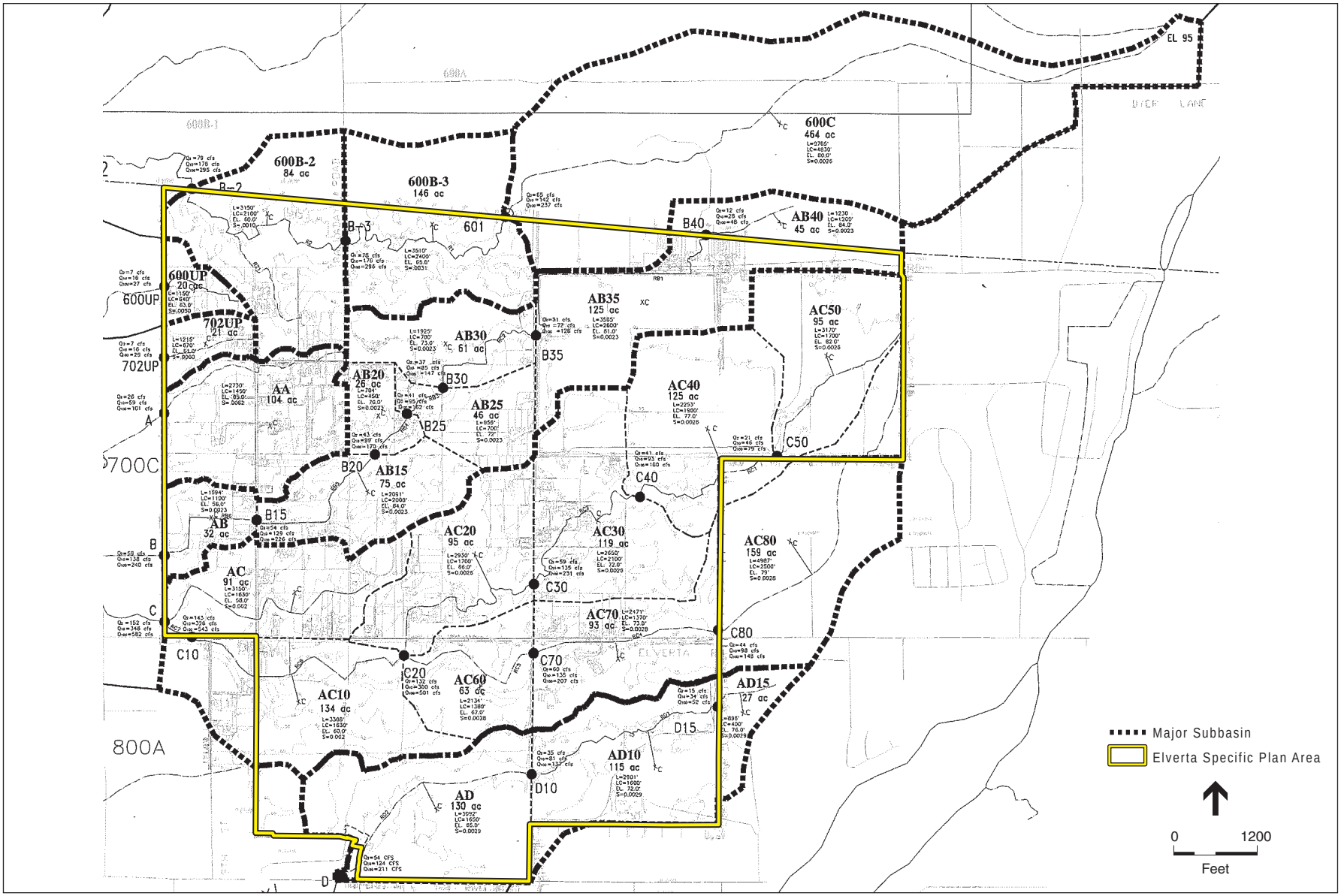
Water quality on the project site, including the various minor drainages and other intermittent tributaries, has not been measured or analyzed. However, due to the ephemeral nature of these drainages, water quality on site is expected to be strongly influenced by precipitation events. Existing land use within the project site consists primarily of rangeland, with limited agriculture and other uses. As such, precipitation occurring within the project site, especially during early rain season (i.e., autumn and early winter) and first flush events, may carry water pollutants associated with these existing land uses. These may include elevated levels of nutrients, sediment, and bacteriological constituents associated with rangeland, as well as nutrients, sediment, fertilizers, and trace pesticides/herbicides associated with other agricultural activities. Along existing roadways



SOURCE: NHD, 2009; Bing Maps, 2009; and ESA, 2011

Elverta Specific Plan EIS . 207431

Figure 3.10-1
Watersheds in the Vicinity of the Project Area



SOURCE: Mckay & Somps, 2003; DERA, 2003; and ESA, 2011

Figure 3.10-2
Project Site Drainage Subbasins

(in and around the project site), additional pollutants include oil, grease, brake dust, sediment, and trash may be present, although only limited roadways occur on site. Because drainage from the project site eventually discharges into the Sacramento River, water quality pollutants emanating from the project site have the potential to influence the quality of water in downstream areas, including the Sacramento River/Delta system.

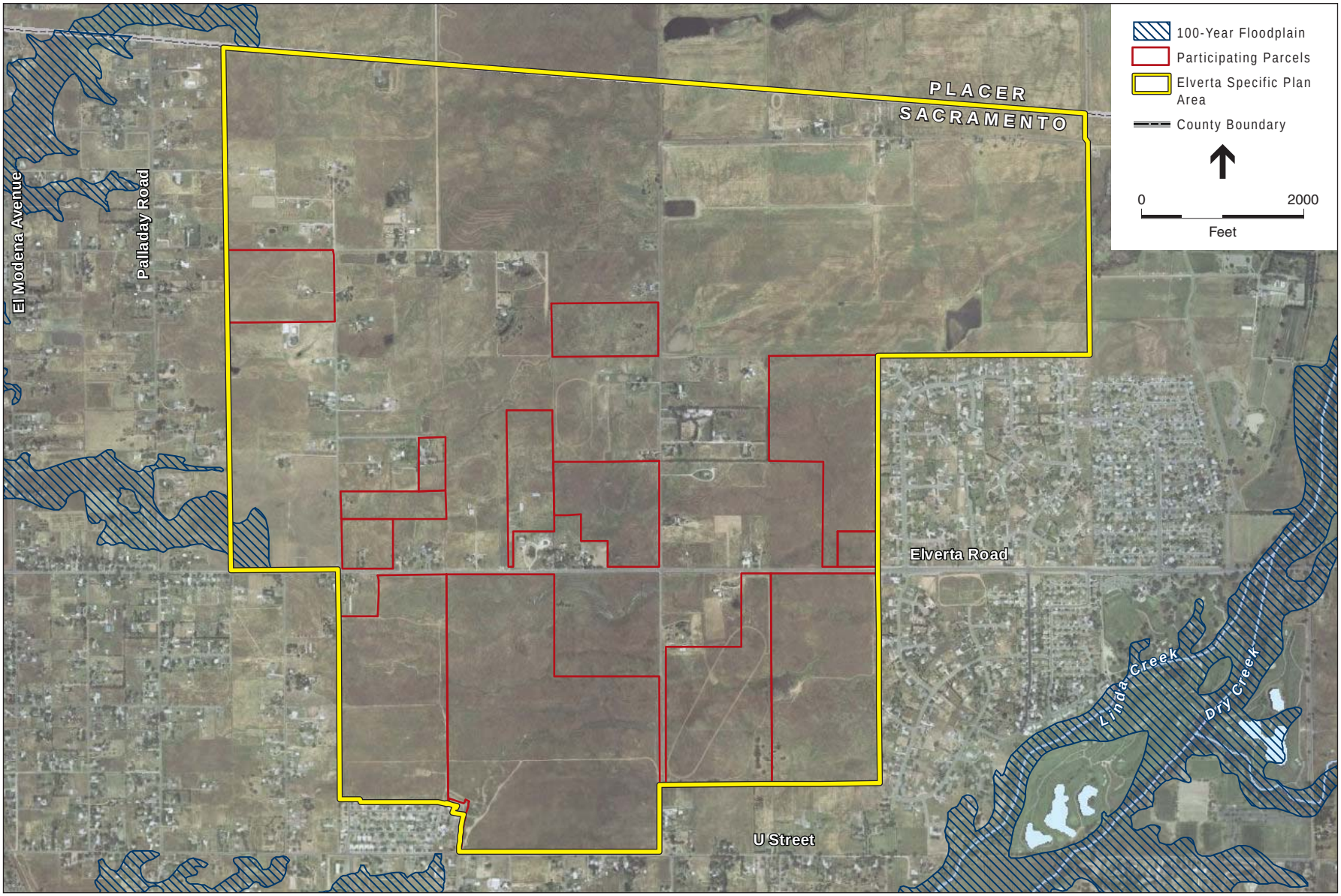
3.10.1.3 Flooding and Drainage

The Federal Emergency Management Agency (FEMA) provides information on flood hazard and frequency for cities and counties on its Flood Insurance Rate Maps. FEMA identifies designated zones to indicate flood hazard potential. In general, flooding occurs along waterways, with infrequent localized flooding also occurring due to storm drain system limitations or surface water ponding. As shown in **Figure 3.10-3**, approximately 10 acres of the project site, located immediately north of Elverta Road along the western edge of the project site, is located within a FEMA 100-year flood zone. Off-site areas, located further downstream, are subject to flooding during a 100-year event. Factors which contribute to flooding in these off-site areas include flat topography and minimally-defined stream channels.

The existing onsite drainages are uncontrolled, intermittently-flowing waterways - except where agricultural diversions or channel realignments have occurred. The combination of low, flat areas and the termination of large uncontrolled watersheds in the vicinity of the NEMDC have contributed to historic flooding in the Rio Linda-Elverta community. Also, high stages in the Sacramento and American Rivers create a backwater effect in the NEMDC, which has contributed to historic flooding by reducing the ability of tributaries to discharge to the NEMDC. In addition to flooding within the designated floodplain, roadside ditches and driveway culverts often limit conveyance of local drainage away from structures and streets. Drainage swales through private properties are also subject to flooding where obstructions placed or constructed in the swales cause diversion or ponding of floodwaters.

Within the last several years, the Sacramento Area Flood Control Agency (SAFCA) has implemented various flood control improvements as part of its North Area Local Project that serve to reduce flooding along the NEMDC and in the lower reaches of its tributary streams. These improvements include construction of a new pump station and control gate in 1997 (known as the D15 pump station) on the NEMDC just north of the confluence with Dry Creek, and construction of a new levee on the north side of Dry Creek between the D15 pump station and Rio Linda Boulevard. The D15 pump station prevents backwater from the Sacramento and American Rivers from backing up in the NEMDC north of the pump station, and also pumps NEMDC flows from north to south. Implementation of these improvements has lowered the 100-year water surface elevation in the NEMDC north of the pump station by approximately 3 to 4 feet.

Other recent flood control and planning efforts for the Elverta and Rio Linda areas have included the use of regional detention facilities/areas in order to contain floodwaters upstream or away from sensitive land uses, thereby minimizing downstream flooding and flooding within residential



SOURCE: FEMA, 2009; Bing Maps, 2009; ESRI, 2009; and ESA, 2012

Figure 3.10-3
FEMA Floodplains in the Vicinity of the Project Site

and other built areas. Earlier planning in the 1990s by the Sacramento County Water Resources Division envisioned more aggressively engineered flood control solutions for the largest of the NEMDC tributaries; however, residents spoke out against the proposals due to cost and land-take issues. A subsequent study, the Natomas East Stream Group Hydrology and Hydraulics Study of 1994, reviewed flood control options without the use of channelization. The study concluded that regional detention would be the best solution for mitigation of future development in regards to flood control. The study also found that detention would only be effective in areas located east of Rio Linda Blvd, which includes the project site.

The Elverta Specific Plan, adopted in 2007, proposed modifications to the existing drainage patterns, while maintaining both the historic flow direction of storm runoff and the existing points of release from the project site. Drainage facilities were intended to be designed to keep storm runoff flow rates at or below existing levels for the 2-year, 10-year, and 100-year design storm events. The Elverta Drainage Master Plan (DMP), prepared as part of the adopted Specific Plan, realigned existing drainages to follow property lines, roadways and the power line corridor. These realigned drainage ways were also supposed to serve as 120 to 200 foot wide multi-purpose open space corridors, accepting storm water runoff from nearby subdivisions through use of a standard drainage pipe system.

Based on feedback received during agency consultations, an updated DMP has been prepared (**Appendix A**) Updates to the initially proposed drainage plan include re-designed, ecologically-enhanced drainage corridors which incorporate topographic variations (benches, ponds) within the channel for the specific purpose of resource/habitat creation and enhancement. Corridor widths were increased (from 120 – 200 feet wide) to up to 500 feet wide, to accommodate post-development drainage flows and serve as mixed-use corridors. For additional information regarding the updated DMP, please refer to **Section 4.10, Impacts on Hydrology, Flooding, and Water Quality**, or the updated DMP (**Appendix A**).

3.10.1.4 Climate Change

Global climate change is anticipated to affect a variety of water resources throughout California, including those on and near the project site. Locally, these changes may result in increases in the intensity of stormwater runoff and flooding events in and around the project site.

A recent analysis by the United States National Weather Service (USNWS), using data from 1931 through 2005, indicates a long-term trend of increasing annual precipitation in California, especially in northern California, where data show an increase of up to 1.5 inches per decade (USNWS, 2008). A second investigation completed by the California Department of Water Resources (DWR) indicates a statistically-significant trend towards increased total precipitation in northern and central California since the late 1960s (DWR, 2006). An investigation of rainfall during November through March of 1930 through 1997 indicates significant increases in California rainfall, which is distinct from snowfall (Mote, 2005). A single investigation by Bardini et al. (2001) indicates potentially decreasing annual precipitation in California. However, this result is likely derived from a specific subset of data that the Bardini study relied upon, with extremes at the beginning or end of the time series data substantially affecting the identified trend (DWR, 2006).

There is also evidence that the amount of precipitation that occurs on an annual basis is becoming more variable. That is, periods of both high and low rainfall are becoming more common. Specifically, a study performed by DWR (2006) indicates that present-day variability in annual precipitation is approximately 75 percent greater than that of the early 20th century.

In terms of flooding, DWR reviewed historic flows in the Feather, American, and Tuolumne Rivers (DWR, 2006). The investigation divided in half a century-long dataset to compare pre-1955 to post-1955 data. Results indicated that the 100-year 3-day peak flows have more than doubled in the American River (111 percent increase) and Tuolumne River (102 percent increase), and increased by 51 percent in the Feather River. Only one major flood event occurred prior to 1955 in the three rivers, while four occurred during the post-1955 period. Thus, annual peak 3-day mean discharges in these northern California watersheds are becoming larger and more variable. Independent climate modeling efforts predict that these trends toward more variable river and stream flows, including more frequent flooding events, will continue as a result of climate change (Dettinger et al., 2004).

3.10.1.4 Groundwater Levels and Quality

The project site is situated north of the American River within the Sacramento Valley Groundwater Basin, North American Subbasin. The groundwater zone in the vicinity of the project site is characterized by a cone of depression. Based on 1996 data, the portion of the subbasin that includes the project site has a cone of depression that extends to about 40 feet below sea level. The center of this cone is located in the vicinity of McClellan Airport, extending below the American River, which forms the boundary between the North American Groundwater Subbasin and the South American Groundwater Subbasin. Groundwater levels in the vicinity of the project site have historically been declining by about 1.5 feet per year.

Groundwater in the Sacramento area occurs in both a shallow aquifer zone and in an underlying deep aquifer zone. The shallow aquifer zone extends approximately 50 to 300 feet below ground surface, and is composed primarily of Quaternary alluvium deposits (Laguna and Fair Oaks Formations). The deep aquifer is separated from the shallow aquifer by a discontinuous clay layer, and is composed primarily of the Mehrten Formation. It ranges in depth from approximately 200 feet thick in the eastern part of the county to over 2,000 feet in the western part of the county. The water quality in the deep aquifer is generally not as good as that of the shallow aquifer and has higher concentrations of total dissolved solids (TDS), iron, and manganese. In general, the water quality of the deeper aquifer decreases with depth. At depths ranging from 800 to 1,200 feet, the TDS exceeds 2,000 mg/l.

Groundwater supplied by water purveyors within Sacramento County is from both the shallow and deep aquifer systems. Individual private wells are typically supplied from the shallow aquifer. In general, the groundwater quality throughout most of the county meets all of the California Department of Public Health's Title 22 drinking water quality standards, with the exception of iron and manganese. Iron and manganese have secondary drinking water standards for aesthetic concerns, such as discoloration of water, taste, and the staining of plumbing fixtures and cooking utensils. Elevated levels of iron and manganese do not pose a health hazard. Elevated

concentrations of both iron and manganese in some shallow aquifer wells suggest that some localized uprising of groundwater from the deep to the shallow aquifer may have occurred.

3.10.2 Regulatory Setting

3.10.2.1 Federal

Clean Water Act

The Clean Water Act (CWA) established the basic structure for regulating discharges of pollutants into "waters of the United States." The act specifies a variety of regulatory and nonregulatory tools to reduce direct pollutant discharges into waterways, finance municipal wastewater treatment facilities, and manage polluted runoff.

- Sections 303 and 304 provide for water quality standards, criteria, and guidelines.
- Section 401 requires that an applicant for a Section 404 permit (to discharge dredged or fill material into waters of the United States) must first obtain a certificate from the appropriate state agency stating that the discharge will not violate the state's water quality standards and criteria. In California, the authority to grant Water Quality Certifications is delegated by the State Water Resources Control Board (SWRCB) to the nine Regional Water Quality Control Boards (RWQCBs).
- Section 402 regulates point- and nonpoint-source discharges to surface waters through the National Pollutant Discharge Elimination System (NPDES) program. In California, the SWRCB oversees the NPDES program, which is administered by the RWQCBs. The NPDES program provides for both general permits (those that cover a number of similar or related activities) and individual permits. Anti-backsliding requirements provided for under CWA Sections 402(o)(2) and 303(d)(4) prohibit slackening of discharge requirements and regulations under revised NPDES permit. With isolated/limited exceptions, these regulations require effluent limitations in a reissued permit to be at least as stringent as those contained in the previous permit.
- Section 404 of the Clean Water Act establishes a program to regulate the discharge of dredged and fill material into waters of the U.S., including some wetlands. Activities in waters of the U.S. that are regulated under this program include fills for development, water resource projects (e.g., dams and levees), infrastructure development (e.g., highways and airports), and conversion of wetlands to uplands for farming and forestry.

National Pollutant Discharge Elimination System

The Water Permits Division within USEPA's Office of Wastewater Management leads and manages the NPDES permit program in partnership with USEPA Regional Offices, states, tribes, and other stakeholders. The NPDES stormwater program is a permitting system for the discharge of any pollutant (except for dredge or fill material) into waters of the U.S. RWQCBs are authorized to enforce this program within California. Construction sites disturbing one acre or more of land are subject to the permitting requirements of the NPDES General Permit for Discharges of Storm Water Runoff Associated with Construction Activity (General Construction Permit), which was recently revised, effective July, 2010. For qualifying projects, the project applicant must submit a

Notice of Intent to the RWQCB to be covered by the General Construction Permit prior to the beginning of all construction activities. The General Construction Permit requires the preparation and implementation of a Storm Water Pollution Prevention Plan (SWPPP), which also must be completed before construction begins, as well as other measures to protect water quality during and following the construction period. Implementation of the plan starts with the commencement of construction and continues though the completion of construction.

Federal Emergency Management Agency

FEMA administers the National Flood Insurance Program (NFIP) to provide subsidized flood insurance to communities that comply with FEMA regulations limiting development in floodplains. FEMA issues Flood Insurance Rate Maps that identify which land areas are subject to flooding. These maps provide flood information and identify flood hazard zones in the community. The design standard for flood protection is established by FEMA, with the minimum level of flood protection for new development determined to be the 1-in-100 annual exceedance probability (i.e., the 100-year flood event).

Safe Drinking Water Act

Under the Safe Drinking Water Act (SDWA, Public Law 93-523), passed in 1974, the USEPA regulates contaminants of concern to domestic water supply. Contaminants of concern relevant to domestic water supply are defined as those that pose a public health threat or that alter the aesthetic acceptability of the water. These types of contaminants are regulated by USEPA primary and secondary Maximum Contaminant Levels (MCLs) that are applicable to treated water supplies delivered to the distribution system. MCLs and the process for setting these standards are reviewed triennially. Amendments to the SDWA enacted in 1986 established an accelerated schedule for setting MCLs for drinking water. EPA has delegated to the California Department of Public Health the responsibility for administering California's drinking-water program.

3.10.2.2 State

State Water Resources Control Board

Created by the California State Legislature in 1967, the SWRCB holds authority over water resources allocation and water quality protection within the state. The five-member SWRCB allocates water rights, adjudicates water right disputes, develops statewide water protection plans, establishes water quality standards, and guides the nine Regional Water Quality Control Boards. The mission of SWRCB is to, "preserve, enhance, and restore the quality of California's water resources, and ensure their proper allocation and efficient use for the benefit of present and future generations."

Central Valley Regional Water Quality Control Board

As authorized by the Porter-Cologne Water Quality Control Act, the Central Valley Regional Water Quality Control Board's (CVRWQCB) primary function is to protect the quality of the waters within its jurisdiction for all beneficial uses. State law defines beneficial uses of California's waters that may be protected against quality degradation to include, but not be limited to: domestic;

municipal; agricultural and industrial supply; power generation; recreation; aesthetic enjoyment; navigation; and preservation and enhancement of fish, wildlife, and other aquatic resources or preserves. The CVRWQCB implements water quality protection measures by formulating and adopting water quality control plans (referred to as basin plans, as discussed below) for specific groundwater and surface water basins, and by prescribing and enforcing requirements on all agricultural, domestic, and industrial waste discharges.

Basin Plans and Water Quality Objectives

The Porter-Cologne Water Quality Control Act provides for the development and periodic review of water quality control plans (basin plans) that are prepared by the regional water quality control boards. Basin plans designate beneficial uses of California's major rivers and groundwater basins, and establish narrative and numerical water quality objectives for those waters. Beneficial uses represent the services and qualities of a water body (i.e., the reasons why the water body is considered valuable), while water quality objectives represent the standards necessary to protect and support those beneficial uses. Basin plans are primarily implemented through the NPDES permitting system and by issuing waste discharge regulations to ensure that water quality objectives are met.

Basin plans provide the technical basis for determining waste discharge requirements and taking regulatory enforcement actions if deemed necessary. The project site is located within the jurisdiction of the CVRWQCB. A basin plan has been adopted for the Sacramento and San Joaquin River Basin ("Basin Plan;" CVRWQCB, 2009), which covers the project site.

The Basin Plan sets water quality objectives for the surface waters in its region for the following substances and parameters: ammonia, bacteria, biostimulatory substances, chemical constituents, color, dissolved oxygen, floating material, oil and grease, pH, radioactivity, salinity, sediment, settleable material, suspended material, taste and odor, temperature, toxicity, turbidity, and pesticides. For groundwater, water quality objectives applicable to all groundwater have been set for bacteria, chemical constituents, radioactivity, taste, odors, and toxicity (CVRWQCB, 2009).

Specific objectives for concentrations of chemical constituents are also applied to bodies of water based on their designated beneficial uses. The Basin Plan does not specifically delineate beneficial uses along the waterways that are located within the project site. However, as indicated previously, these waterways eventually drain into the Sacramento River, at its confluence with the American River. The Basin Plan considers beneficial uses for the Sacramento River downstream of the "I" Street Bridge together with beneficial uses indicated for the Sacramento-San Joaquin Delta. These are shown in **Table 3.10-1**:

TABLE 3.10-1
DEFINED BENEFICIAL USES FOR THE SACRAMENTO-SAN JOAQUIN DELTA

Beneficial Uses	Type
Municipal and Domestic Supply	Existing
Irrigation	Existing
Stock Waters	Existing
Process	Existing
Service Supply	Existing
Contact Recreation	Existing
Noncontact Recreation	Existing
Warm Freshwater Habitat	Existing
Cold Freshwater Habitat	Existing
Warmwater Migration	Existing
Coldwater Migration	Existing
Warmwater Spawning	Existing
Wildlife Habitat	Existing
Navigation	Existing

SOURCE: CVRWQCB, 2009

3.10.3 References

Bardini, G., Guillen, S., Pierotti, B, Rooks, H., and Sou, S. 2001. *Climate Change in California: Potential Consequences and Strategies to Cope and Adapt.* California Department of Water Resources Report. 91 pp.

California Department of Water Resources (DWR). 2006. *Progress on Incorporating Climate Change into Management of California's Water Resources*. Technical Memorandum Report, July 2006.

Central Valley Regional Water Quality Control Board, 2009. The Water Quality Control Plan (Basin Plan) for the California Regional Water Quality Control Board Central Valley Region. Fourth Edition. The Sacramento River Basin and the San Joaquin River Basin. Revised September, 2009. Original publication date: September 15, 1998.

DERA, 2007. Final Environmental Impact Report – Elverta Specific Plan and Associated Subdivision Map Known as Countryside Equestrian Estates. County of Sacramento Department of Environmental Review and Assessment Published May 2007.

Dettinger, M., Cayan, D., Meyer, M., and Jeton, J. 2004. Simulated hydrologic responses to climate variations and change in the Merced, Carson, and American Rivers, Sierra Nevada, 1900-2099. Climatic Change 62: 283-317.

Mote, 2005. Declining Snowpack in Western North America. Bulletin of the American Meteorological Society 86(1): 39-49.

US National Weather Service (USNWS), 2008. US Temperature and Precipitation Trends. National Weather Service Climate Prediction Center. Available at: http://www.cpc.ncep.noaa.gov/trndtext.shtml.

This Page is Intentionally Left Blank

3.11 Land Use and Agriculture

3.11.1 Existing Setting

This section describes the current land uses within and adjacent to the project site. Agricultural land uses and production in the vicinity of the project site, including relevant policies governing agricultural conservation, are also discussed.

3.11.1.1 Project Site Land Uses

The majority of the project site consists of dry land pasture supporting cattle and equestrian activities, while minor areas of the site support irrigated truck crops such as strawberries. The eastern and southern portions of the project site are uninhabited. The project site is developed with 65 rural residential households most of which are grouped along Elverta Road, Palladay Road, 16th Street and Kasser Road. Two residences also conduct business activities within the project site. The Elverta Honey Bears Preschool on Elverta Road (APN 202-0080-015) is a weekday preschool within a separate building from the residence and includes a fenced playground and asphalt-paved parking area. The other commercial site, Hundaelbillsung (APN 202-007-021) is a canine obedience school. Existing development is served by private well and septic systems and there is currently no public water or sewer service provided in the area. A PG&E power transmission line bisects the project site in a generally north-south direction.

A small portion within the project site (but not within the participating parcels) along Palladay Road was historically used as a landfill (the Monroe Landfill) for domestic waste. The 5-acre inactive Monroe Landfill has been closed since the late 1950s and is located within a 20± acre parcel along Palladay Road. The landfill site is currently designated as Open Space (OS), and zoned AR-5 (Agricultural-Residential, Minimum Lot Size 5 acres). The current landfill property owner has stated that they have no plans to develop the Monroe Landfill property, and that they do not have the financial ability to investigate the site (DERA, 2007). Hazards associated with this site are described more thoroughly in **Sections 3.9** and **4.9**, Hazards and Hazardous Materials.

3.11.1.2 Adjacent Land Uses

The project site is located in north-central Sacramento County, California. To the north of the project site is primarily open space with some agricultural uses (including grazing) and scattered rural residences. Lands to the north of the project site are within Placer County. To the east, south and west of the project site are primarily residential uses with open space, agricultural and recreational uses dispersed throughout. Medium and high density residential uses are located primarily to the east and south within the communities of Elverta and Rio Linda and the North Highlands area. Low density residential uses (ranch homes and larger estates) are located immediately south and west of the project site. Recreational uses and open space are dominant along Dry Creek drainage corridor, including golf courses, Dry Creek Parkway, Gibson Ranch and the Cherry Island Soccer Complex. Active agricultural uses include livestock grazing,

equestrian uses, row crops. Fallow agricultural lands are also located throughout the region. The McClellan Business Park and associated McClellan Airport are located over a mile southeast of the project site.

3.11.1.3 Agricultural Resources

As noted previously, the majority of the project site consists of dry land pasture supporting cattle and equestrian activities, while minor areas of the site support irrigated truck crops such as strawberries. According to 2008 Williamson Act data provided by the California Department of Conservation, Division of Land Resource Protection (DOC, 2008), there are no Williamson Act lands within the project site.

The Farmland Mapping and Monitoring Program (FMMP) classifies agricultural land according to several variables including soil quality and irrigation status with Prime Farmland being considered the most optimal for agricultural production. The FMMP has classified land within the participating parcels and project site as shown in **Table 3.11-1** and **Table 3.11-2**, respectively. The majority of land within the project site is classified as Grazing Land with a portion designated as farmland of local importance. There is no prime farmland, unique farmland, or farmland of state importance within the project site (DOC, 2006).

TABLE 3.11-1
FMMP CLASSIFICATIONS FOR THE PARTICIPATING PARCELS

FMMP Classification	Area (acres)
Farmland of Local Importance	19.70
Grazing Land	533.64
Urban and Built Up Land	5.30
Other Land	4.83

SOURCE: DOC, 2006

TABLE 3.11-2
FMMP CLASSIFICATIONS FOR THE ENTIRE ELVERTA SPECIFIC PLAN SITE

FMMP Classification	Area (acres)
Farmland of Local Importance	86.11
Grazing Land	1,515.45
Urban and Built Up Land	35.83
Other Land	126.02

SOURCE: DOC, 2006

3.11.2 Regulatory Setting

3.11.2.1 Federal

Farmland Protection Policy Act

The purpose of the Farmland Protection Policy Act (FPPA; 7 U.S.C § 4201) is to minimize the impact of federal programs on unnecessary conversion of farmland to non-agricultural uses. The Natural Resource Conservation Service (NRCS) implements the program and evaluates the agricultural importance of the farmland on Form AD 1006, the Farmland Conversion Impact Rating Form. However, federal permitting (such as permitting by the U.S. Army Corps of Engineers under Section 404 of the Clean Water Act, covered under this EIS/EIR) does not qualify as a federal program and thus does not trigger an analysis. Form AD 1006 is therefore not required for this analysis.

Federal Aviation Regulation Part 77

The Federal Aviation Administration (FAA) is the branch of the U.S. Department of Transportation with regulatory responsibility for civil aviation. The FAA is responsible for establishing policies and regulations to ensure the safety of the traveling public.

Federal Aviation Regulation (FAR) Part 77 establishes standards and notification requirements for objects affecting navigable airspace. Notification allows the FAA to identify potential aeronautical hazards and prevent or minimize the adverse impacts to the safe and efficient use of navigable airspace. The FAA must be notified of any construction or alternation within 10,000 feet of a public use airport which exceeds a 50:1 surface from any point on the runway. The project site boundary is within 10,000 feet of McClellan Airport, which is located southeast of the project site.

Federal Aviation Administration Advisory Circular for Hazardous Wildlife Attractants on or near Airports

FAA Advisory Circular (AC) 150/5200-33B addresses hazardous wildlife attractants on or near airports. This Advisory Circular is intended to provide guidance on siting certain land uses that have the potential to attract potentially hazardous wildlife to a public-use airport or its vicinity. The FAA Advisory Circular recommends against "land use practices that attract or sustain populations of hazardous wildlife within the vicinity of airports or cause movement of hazardous wildlife onto, into, or across the approach or departure airspace, aircraft movement area, loading ramps, or aircraft parking area of airports." The Advisory Circular recommends a separation distance of 5,000 feet between airports using piston-powered aircraft and any project or change in land use that could attract hazardous wildlife, such as open-air water storage facilities. For airports using turbine-powered aircraft, the FAA recommends a separation distance of 10,000 feet between an airport and a potential hazardous wildlife attractant. For projects that are located outside the 5,000/10,000-foot criteria but within five statute miles of the airport's air operations area, the FAA may review development plans, proposed land use changes, operational changes,

or wetland mitigation plans to determine whether such changes in land use would create potential wildlife hazards to aircraft operations. The project site is further than 5,000 feet, but within the 10,000-foot boundary, and review of development plans by the FAA is required.

3.11.2.2 State

Williamson Act

California's Land Conservation Act of 1965 (the "Williamson Act") is designed to preserve agricultural and open space lands by discouraging premature and unnecessary conversion to urban uses. The Williamson Act creates an arrangement whereby private landowners contract with counties and cities to voluntarily restrict their land to agricultural and compatible open-space uses. As stated previously, there are no lands with an active Williamson Act contract within the project site.

California Important Farmland Inventory System and Farmland Mapping and Monitoring Program

The California Department of Conservation (DOC), under the Division of Land Resource Protection, has developed the FMMP, which monitors the conversion of the state's farmland to and from agricultural use. Data is collected at the county level to produce a series of maps identifying eight land use classifications using a minimum mapping unit of 10 acres. The program also produces a biannual report on the amount of land converted from agricultural to non-agricultural use. The program maintains an inventory of state agricultural land and updates the "Important Farmland Series Maps" every two years. The FMMP is an informational service and does not constitute state regulation of local land use decisions. Agricultural land is rated according to several variables including soil quality and irrigation status with Prime Farmland being considered the most optimal for agricultural production. The project site contains land designated as farmland of local importance and grazing land under the FMMP.

3.11.2.3 Local

Airport Land Use Commission and Comprehensive Land Use Plan

Airport Land Use Commissions (ALUCs) are required in every county with a public use airport or with an airport served by a scheduled airline. The Sacramento Area Council of Governments (SACOG) has been designated as the ALUC for the counties of Sacramento, Sutter, Yolo and Yuba. Under the provisions of the law, the ALUC is required to prepare a Comprehensive Land Use Plan (CLUP) for each public airport within its jurisdiction. The adopted CLUP for McClellan AFB was prepared by SACOG in January 1987, amended in December 1992, and subsequently incorporated into the County General Plan by the Board of Supervisors. A portion of the project site lies within the overflight safety zone. McClellan AFB closed as a military facility in 2001, and in December 2002, the McClellan AFB Final Reuse and Implementation Plan (Control No: 00-0566) was adopted by the County. The former base is now known as McClellan Park, which is being redeveloped into a business park with a variety of office, industrial, and support facilities, including a major aviation component.

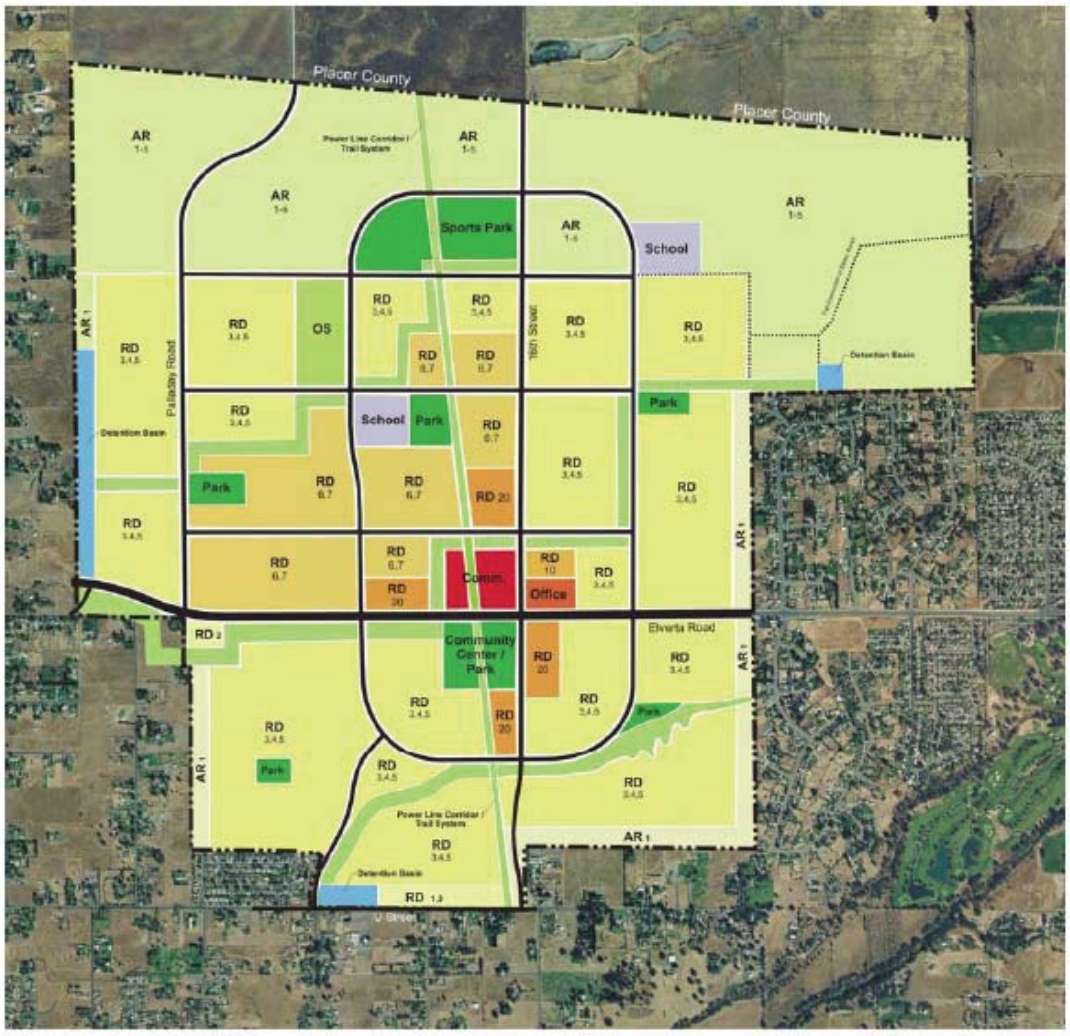
The adoption of the Reuse Plan included an override of the existing CLUP with the finding that civilian reuse of the airfield will result in far less safety impacts on surrounding areas as compared with the historic military use of the facility; however, the December 1992 McClellan AFB CLUP legally remains in effect until it is officially amended. The CLUP amendment has been initiated but has not yet been completed. It is anticipated that the safety zones and the overflight zone will shrink substantially based on civilian-use airport operations.

Sacramento County General Plan Land Use Designations and Zoning

The DERA 2007 FEIR included a request for the following entitlements related to land use designations and zoning:

1. General Plan Amendment to change the Land Use Diagram for the Elverta Specific Plan area from Agricultural-Residential and Urban Development Area to Agricultural-Residential, Low Density Residential, Medium Density Residential and Commercial and Office land use designations.
2. Rezone for 1160.6 acres of the 1,744 acre Elverta Specific Plan area from AR-1 and AR-5 to AR-1, RD-2, RD-5, RD-7, RD-20, SC and BP. The properties proposed for rezoning are known as the "participating properties".
3. Zoning Ordinance Amendment to codify development standards contained in the land use section of the Elverta Specific Plan for use in instances where development regulations deviate from the County Zoning Ordinance.

The Sacramento County General Plan Land Use Map designates the Plan area as Medium Density Residential and Agricultural Residential. On August 8, 2007, the County of Sacramento Board of Supervisors adopted the Elverta Specific Plan, Community Plan Amendment, Zoning Ordinance Amendment, Rezones, and Financing Plan. The Zoning Ordinance Amendment is found in Title VI, Chapter 4 "Special Planning Areas", Article 608-10 of the County's Zoning Code. Exhibit 608-13.2 of the Article (shown as **Figure 3.11-1**) provides the approved land uses for Plan area. The approved land use diagram contains more designations than are found in the table below. These additional designations, such as "Elementary School", do not have any specific definitions within the Elverta Specific Plan – they are lands that will be set aside for the type of use noted (open space, detention/trails, etc). These approved land uses are also provided in **Table 3.11-3**, below. Approved zoning designations for the project are shown in **Table 3.11-4**.



Land Use	Acreage
Agricultural Residential (AR) 1-5	502.3
Agricultural Residential (AR) 1	49.5
Residential Development (RD) 2	3.2
Residential Development (RD) 1, 2	6.9
Residential Development (RD) 3, 4, 5	662.7
Residential Development (RD) 6,7	161.7
Residential Development (RD) 10	7.0
Residential Development (RD) 20	38.8

Land Use	Acreage
Office / Professional	4.4
Commercial	15.0
Community / Sports / Neighborhood Parks	73.3
Elementary School	20.2
Drainage / Trails Detention / Joint Use	101.3
Powerline Corridor*, and Trail System	16.3
Open Space	18.4
Major Roads - Other	74.3
Total	1,744.6

*Includes 10.68 acres of powerline corridor acreage in park, RD 20 and Commercial landuse statistics where corridor is adjacent to or within said landuse designations. (Total acreage note out these 10.68 acres)

Total Plan Holding Capacity of 4,950 Dwelling Units

N

NOT TO SCALE

SOURCE: Sacramento Zoning Code, 2007; and ESA, 2011

Figure 3.11-1
Approved Zoning

TABLE 3.11-3
SACRAMENTO COUNTY APPROVED LAND USE DESIGNATIONS

Designation	Description
Agricultural-Residential	The Agricultural-Residential designation provides for rural residential uses, such as animal husbandry, small-scale agriculture, and other limited agricultural activities. This designation is typical of established rural communities where between one and ten acres per unit is allowed, resulting in a development density of 2.5 to 0.25 persons per acre.
Low Density Residential	The Low Density Residential designation provides for areas of predominantly single family housing with some attached housing units. It allows urban densities between one and twelve dwelling units per acre, resulting in population densities ranging from approximately 2.5 to 30 persons per acre. Typical low density development includes detached single family homes, duplexes, triplexes, fourplexes, townhouses, lower density condominiums, cluster housing, and mobile home parks.
Medium Density Residential	The Medium Density Residential designation provides for areas of attached units, including apartments and condominiums, along transit corridors and throughout the urban area. This designation establishes urban densities between thirteen and thirty dwelling units per acre, resulting in population densities ranging from approximately 32.5 to 73.5 persons per acre. Medium density development includes apartments, condominiums, and group housing. These uses are appropriate near commercial areas, transportation and transit corridors, and employment centers.
Commercial and Office	The Commercial and Office designation provides for a full range of neighborhood, community and regional shopping centers and a variety of business and professional offices. Uses include locally-oriented retail, professional offices, and regional commercial operations. The location and size of commercial areas is based upon accessibility, historic development patterns, community and neighborhood needs, and minimization of land use conflicts. Ideally, commercial areas are designed to integrate with the community, including the provision for pedestrian amenities. The standard for commercial Floor Area Ratios is between 0.25 to 2.5.

TABLE 3.11-4
SACRAMENTO COUNTY APPROVED ZONING DESIGNATIONS

Zoning Designation	Description	Elverta Specific Plan Designation
Agricultural Residential (AR) 1-5, and Agricultural Residential (AR) 1	AR-1, AR-2, and AR-5: Low density, single-family residential land use zones with a minimum parcel size of 1, 2, and 5 gross acres, respectively. The purpose of agricultural/residential zoning is to allow the keeping of animals and the raising of crops for personal or income supplementation purposes.	*Agricultural Residential (AR) 1-5*: Minimum lot size of 1-5 acres *Agricultural Residential (AR) 1:* Minimum lot size of 1 acre.
Residential Development (RD) 2	RD-2: Single Family zone. Identical to RD-1 except a minimum lot size of 20,000 net square feet, with a minimum lot width of 75 feet, is permitted if either a public water supply or a public sewerage facility, or both, is in use.	Maximum of 2 dwelling units per acre
Residential Development (RD) 1, 2	RD-1: Single Family zone. Similar to AR-1 except that general agricultural uses such as beekeeping, row crops, and gas wells are not permitted in this zone. Incidental agricultural uses, including the keeping of horses, are permitted. The minimum lot area is one (1) net acre. RD-2: Single Family zone. Identical to RD-1 except a minimum lot size of 20,000 net square feet, with a minimum lot width of 75 feet, is permitted if either a public water supply or a public sewerage facility, or both, is in use.	Maximum of 1 or 2 dwelling units per acre
Residential Development (RD) 3, 4, 5	RD-3: Single Family zone. Similar to RD-1 except that a minimum lot size of 10,000 net square feet, with a minimum lot width of 65 feet, is permitted if either a public water supply or public sewerage facility, or both, is in use. In this	Maximum of 3, 4 or 5 dwelling units per acre

	zone, incidental agricultural uses, including the keeping of horses, is permitted only if the lot area is 20,000 net square feet. RD-4: Single Family zone. Identical to RD-3 except that a minimum lot area of 8,500 net square feet is permitted where public water supply and public sewerage facility, or both, are in use. A minimum lot size of 10,000 square feet is permitted if either a public water supply or a public sewerage facility is in use, but not both. In addition, convenience centers are permitted in this zone subject to issuance of a use permit. The minimum lot width and public street frontage is 65 feet. RD-5: This is the most widely occurring single family residential zone. Where public water supply and public sewerage facilities are both in use, 5,200 net square feet is the required minimum lot size for interior lots, with corner lots being 6,200 net square feet. Duplexes are permitted with a minimum lot size of 8,500 net square feet on corner lots and subject to the issuance of a use permit on interior lots of this size. Incidental agricultural uses are permitted on lots 20,000 net square feet or larger. Certain types of businesses and professional office uses when in scale and oriented to the neighborhood, as well as convenience centers, are allowed subject to the issuance of a use permit.	
Residential Development (RD) 6, 7	RD-7: Another widely occurring single family zone with interior lot size of 4,000 net square feet and corner lots of 5,200 net square feet when public water supply and public sewerage facilities are in use. Duplexes are permitted on 8,500 net square feet corner lots and on interior lots of 6,200 net square feet with the issuance of a use permit.	Maximum of 6 or 7 dwelling units per acre
Residential Development (RD) 10	RD-10: This is the most common duplex zone, although other multiple family uses are permitted with a use permit. A maximum of ten (10) dwelling units per net acre of land is allowed. Single family interior lots require 4,000 net square feet and single family corner lots require 5,200 net square feet. Minimum lot sizes for a duplex on corner lots is 7,200 net square feet and 6,200 net square feet for interior lots. The minimum lot size for multiple family projects 5,200 net square feet for interior lots and 6,200 net square feet for corner lots.	Maximum of 10 dwelling units per acre
Residential Development (RD) 20	RD-20: This zone allows maximum density of 20 dwelling units per net acre of land. Incidental agricultural uses are allowed only upon issuance of a use permit. The minimum lot sizes are the same as those for single, duplex, and multifamily developments in the RD-10 description.	Maximum of 20 dwelling units per acre
Business and Professional (BP)	BP: Business and Professional zone. The BP zone generally permits office building and related uses such as banks, libraries, doctor's offices, general business offices, and similar uses. This zone is intended to promote a harmonious development of business and professional office areas with adjacent commercial or residential development. Multiple-family residential projects are permitted with a use permit. Signs are to be less obtrusive than in other commercial zones.	Uses include medical services and retail
Shopping Center (SC)	SC: Shopping Center zone. The purpose of this zone is to provide an area which will offer a wide choice of retail goods and services, while promoting the unified grouping of retail and service uses. Multiple-family residential projects are permitted with a use permit. Signs are regulated for the shopping center as a single unit.	Uses include markets and retail

3.11.3 References

California Department of Conservation, Division of Land Resource Protection (DOC). 2006. Farmland Mapping and Monitoring Program GIS data.

California Department of Conservation, Division of Land Resource Protection (DOC). 2008. Williamson Act Program GIS data.

DERA, 2007. Final Environmental Impact Report – Elverta Specific Plan and Associated Subdivision Map Known as Countryside Equestrian Estates. County of Sacramento Department of Environmental Review and Assessment Published May 2007.

Placer County Community Development Resource Agency. 2009. Planning Department website. http://www.placer.ca.gov/Departments/CommunityDevelopment/Planning/PVineyards.aspx -- accessed October 15, 2009.

Sacramento County. 2011 *General Plan of 2005 - 2030.* Amended November 9, 2011.

Sacramento County. 2007. *Final Elverta Specific Plan.* Prepared for the County of Sacramento by The Hodgson Company and Towne Consulting LLC et al.

Sacramento County. 2007. Sacramento County Summary of Zoning Classifications. Updated December 18, 2007. Available online: http://www.planning.saccounty.net/zc/docs/ZoningClassSummary.pdf

Sacramento County. 2007. Zoning Code of Sacramento County, Title VI, Chapter 3, Article 1. Zoning Code Amendment for the Elverta Specific Plan. Adopted August 8, 2007.

This Page is Intentionally Left Blank

3.12 Noise

3.12.1 Existing Setting

Given the highly technical nature of this topic, this section begins with some background information on noise and vibration terminology. The section then continues with recently collected noise measurements at locations potentially affected by the alternatives followed by a description of applicable noise guidelines and standards.

3.12.1.1 Acoustic Fundamentals

Noise Descriptors and Community Noise

An individual's noise exposure is a measure of noise over a period of time. A noise level is a measure of noise at a given instant in time. The noise levels presented in **Figure 3.12-1** are representative of measured noise at a given instant in time; however, they rarely persist consistently over a long period of time. Rather, community noise varies continuously over a period of time with respect to the contributing sound sources of the community noise environment. Community noise is primarily the product of many distant noise sources, which constitute a relatively stable background noise exposure, with the individual contributors unidentifiable. Frequently used noise descriptors are located in the Table of Contents, Acronyms and Abbreviations, for the following terms: Leq, Lmax, DNL/Ldn, and CNEL.

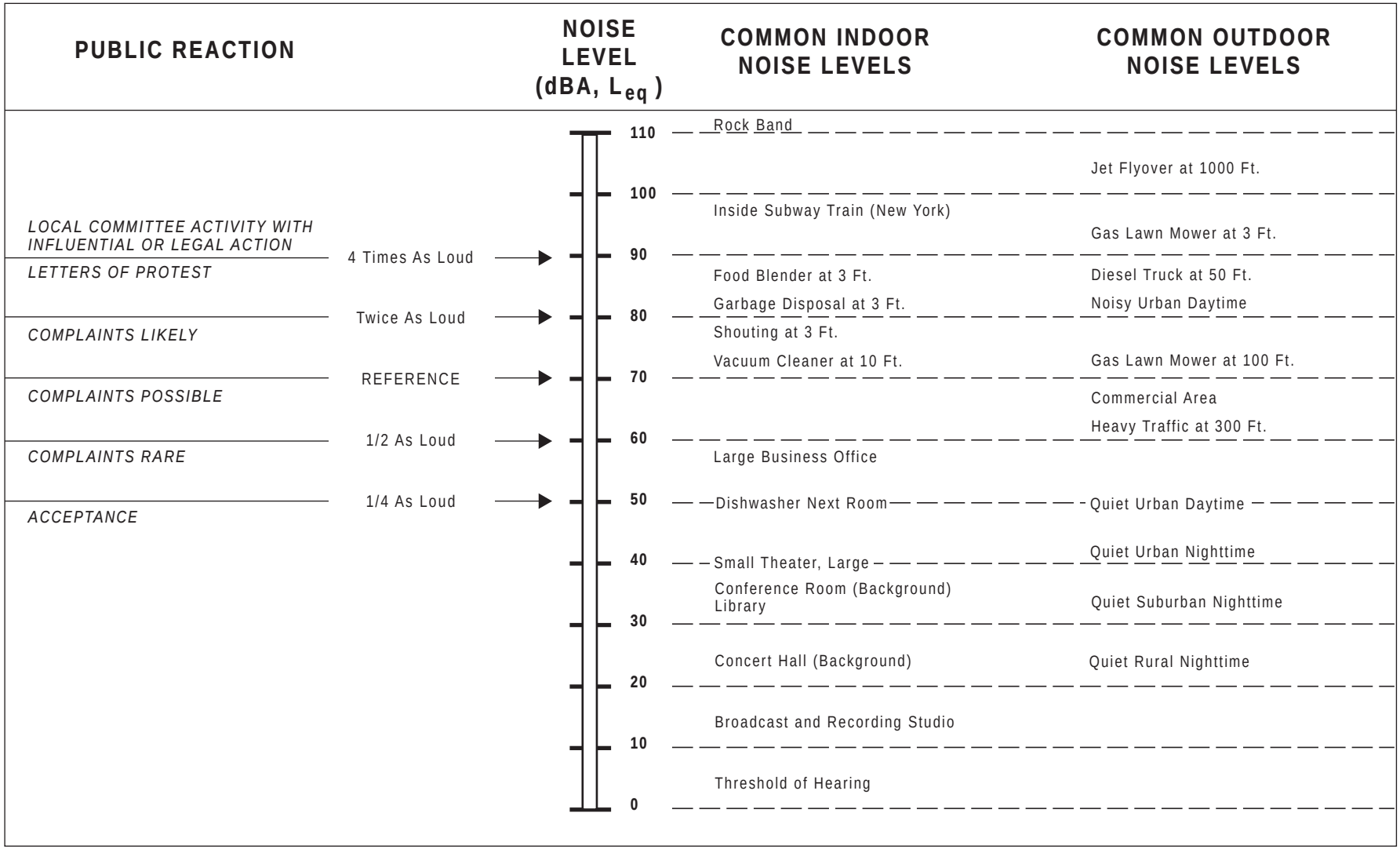
As a general rule, in areas where the noise environment is dominated by traffic, the Leq during the peak-hour is generally equivalent to the Ldn at that location (within +/- 2 dBA) (Caltrans, 1998).

Characteristics of Noise Propagation and Attenuation

Stationary point sources of noise, including stationary mobile sources such as idling vehicles, attenuate (lessen) at a rate between 6 dB for hard sites and 7.5 dB for soft sites for each doubling of distance from the reference measurement. Hard sites are those with a reflective surface between the source and the receiver such as parking lots or smooth bodies of water. Soft sites have an absorptive ground surface such as soft dirt, grass or scattered bushes and trees. Line sources (such at traffic noise from vehicles) attenuate at a rate between 3 dB for hard sites and 4.5 dB for soft sites for each doubling of distance from the reference measurement (Caltrans, 1998).

Effects of Noise on People

The effects of noise on people can be placed into three categories: subjective effects of annoyance, interference with activities such as speech, sleep, and learning, and physiological effects such as hearing loss or sudden startling.



SOURCE: ESA, 2007

Elverta Specific Plan EIS . 207431

Figure 3.12-1

Effect of Noise on People

There is no completely satisfactory way to measure the subjective effects of noise, or the corresponding reactions of annoyance and dissatisfaction. Thus, an important way of predicting a human reaction to a new noise environment is the way it compares to the existing environment to which one has adapted: the so called "ambient noise" level. With regard to increases in instantaneous A-weighted noise level, the following relationships occur:

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

Fundamentals of Vibration

As described in the Federal Transit Administration's *Transit Noise and Vibration Impact Assessment* (FTA, 2006), ground-borne vibration can be a serious concern for nearby neighbors of a transit system route or maintenance facility, causing buildings to shake and rumbling sounds to be heard. In contrast to airborne noise, ground-borne vibration is not a common environmental problem. It is unusual for vibration from sources such as buses and trucks to be perceptible, even in locations close to major roads. For this analysis vibration is not considered an issue.

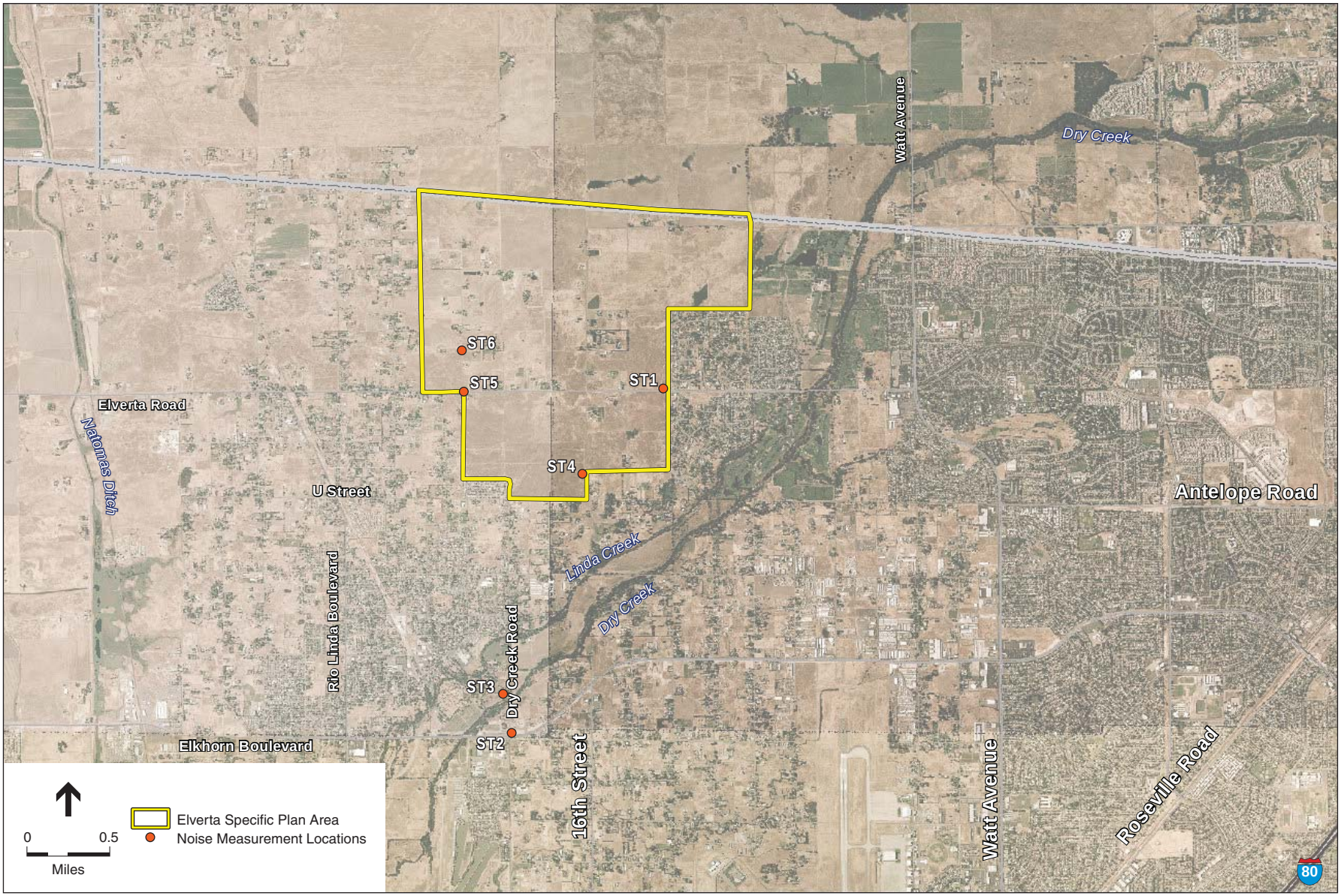
3.12.1.2 Existing Noise Environment

Project Location and Sensitive Receptors

Some land uses are considered more sensitive to ambient noise levels than others, due to the amount of noise exposure (in terms of both exposure duration and insulation from noise) and the types of activities typically involved. Residences, motels and hotels, schools, libraries, churches, hospitals, nursing homes, auditoriums, parks, and other outdoor recreation areas generally are more sensitive to noise than are commercial (other than lodging facilities) and industrial land uses. Existing sensitive receptors, which are limited to existing residences and Elverta Honey Bears Preschool on 1139 Elverta Road, lie adjacent to and within the project site. The residences bordering the project site would be exposed to construction activities as close as their property line (approximately 50 feet). The preschool may be exposed to construction noise as close as 300 feet.

Ambient-Noise Survey

The noise environment surrounding the site is influenced primarily by automobile traffic on Elverta Road and surrounding arterials. To quantify the existing noise environment, 24 short term (ST) 5-minute noise level measurements were taken at six locations on and around the site. All noise measurements were collected using calibrated Metrosonics dB308 sound level meters. The location of the noise measurements are shown in **Figure 3.12-2**. Noise measurement results are shown in **Table 3.12-1.**



SOURCE: ESRI, 2007; Bing Maps, 2009; and ESA, 2009

Elverta Specific Plan EIS . 207431

Figure 3.12-2
Noise Measurement Locations

TABLE 3.12 -1
EXISTING NOISE ENVIRONMENT AT PROJECT SITE

Location	Time Period	Leq (decibels)	Noise Sources
ST-1: 50 feet from center of Elverta Road at the eastern edge of the project site	Tuesday 10/06/09 7:17 – 7:27 AM	5-minute Average Noise Level, Leq's 67, 67	Semi-constant stream of traffic on Elverta Road
ST-1: 50 feet from center of Elverta Road at the eastern edge of the project site	Tuesday 10/06/09 3:31 – 3:41 PM	5-minute Average Noise Level, Leq's 66, 65	Semi-constant stream of traffic on Elverta Road
ST-2: 85 feet from the center of Dry Creek / Elkhorn Intersection	Tuesday 10/06/09 7:42 – 7:52 AM	5-minute Average Noise Level, Leq's 72, 71	Traffic moving in all directions. During no moving traffic 62 dBA
ST-2: 85 feet from the center of Dry Creek / Elkhorn Intersection	Tuesday 10/06/09 4:50 – 5:00 PM	5-minute Average Noise Level, Leq's 71, 75	Traffic moving in all directions Major intersection traffic
ST-3: 35 feet from the center of Dry Creek Road at water bridge north of Elkhorn	Tuesday 10/06/09 7:59 – 8:09 AM	5-minute Average Noise Level, Leq's 70, 71	Traffic crossing bridge
ST-3: 35 feet from the center of Dry Creek Road at water bridge north of Elkhorn	Tuesday 10/06/09 4:34 – 4:44 PM	5-minute Average Noise Level, Leq's 70, 69	Traffic crossing bridge
ST-4: 50 feet from center of 16th Street north of U Street	Tuesday 10/06/09 8:23 – 8:33 AM	5-minute Average Noise Level, Leq's 53, 54	Airplane: 56 dBA Powerline "buzz" 43dBA
ST-4: 50 feet from center of 16th Street north of U Street	Tuesday 10/06/09 4:17 – 4:27 PM	5-minute Average Noise Level, Leq's 61, 57	Wind 59 dBA
ST-5: 50 feet from center of Elverta Road at Palladay	Tuesday 10/06/09 8:43 – 8:53 AM	5-minute Average Noise Level, Leq's 60, 63	Traffic from Elverta, farm animals
ST-5: 50 feet from center of Elverta Road at Palladay	Tuesday 10/06/09 4:00 – 4:10 PM	5-minute Average Noise Level, Leq's 63, 62	Traffic from Elverta, farm animals, wind
ST-6: 50 feet from center of Palladay Road north of Elverta	Tuesday 10/06/09 9:01 – 9:11 AM	5-minute Average Noise Level, Leq's 50, 51	Car passing 66 dBA Farm animals Very little traffic
ST-6: 50 feet from center of Palladay Road north of Elverta	Tuesday 10/06/09 3:47 – 3:57 PM	5-minute Average Noise Level, Leq's 48, 52	Car 59 dBA Airplane 59 dBA Very little traffic

SOURCE: ESA, 2009.

3.12.2 Regulatory Setting

3.12.2.1 Federal

The Code of Federal Regulations (CFR), Title 14, Part 150, Table 1 entitled "Land Use Compatibility with Yearly Day-Night Average Sound Levels," provides a standard reference for land uses compatible with various levels of airport noise, and contains the basic criteria used in preparing Part 150 programs. This is the only noise and land use compatibility table currently in the Code of Federal Regulations (FAR, 1983). The local Airport Comprehensive Land Use Plans provide county-wide regulations later in this chapter.

The FHWA establishes Noise Abatement Criteria (NAC) for various land uses which have been categorized based upon activity. Land uses are categorized on the basis of their sensitivity to noise, as indicated in **Table 3.12-2**. The **Table 3.12-2** standards which may be considered applicable to this project would be the 67 dB Leq exterior noise level standard for Residences (Category B), and the 52 dB interior noise level standard applied to those same uses under Category E. A traffic noise impact is considered to occur when future predicted design-year noise levels with the project approach or exceed NAC defined in 23 CFR 772 or when the predicted design-year noise levels with the project substantially exceed existing noise levels. A predicted design-year noise level is considered to approach the NAC when it is within 1-dB of the NAC. A substantial increase is defined as being a 12-dB increase above existing conditions.

TABLE 3.12-2
FEDERAL NOISE ABATEMENT CRITERIA

Activity Category	Leq (h), dBA	Activity Category Description
A	57 (Exterior)	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B	67 (Exterior)	Picnic areas, recreation areas, playgrounds, active sports areas, parks, residences, motels, hotels, schools, churches, libraries, and hospitals.
C	72 (Exterior)	Developed lands, properties, or activities not included in Categories A or B above.
D	---	Undeveloped Lands.
E	52 (Interior)	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, and auditoriums.

Hourly A-Weighted Sound Level--decibels (dBA)
SOURCE: Federal Highway Administration; 23 CFR, Part 772, Caltrans, *Traffic Noise Analysis Protocol*, 2006.

3.12.2.2 State

Caltrans Aeronautics noise standards specify that "the level of noise acceptable to a reasonable person residing in the vicinity of an airport is established as a community noise equivalent level (CNEL) value of 65 dB for purposes of these regulations (Caltrans, 1990).

3.12.2.3 Local

Sacramento County General Plan Noise Element

The Sacramento County General Plan Noise Element, adopted in December of 1993 and amended in 2011, establishes land use compatibility criteria for transportation noise and outlines acceptable noise levels for various land uses. Listed are the following General Plan Noise Element policies that are pertinent to development projects:

Policy NO-1: The noise level standards for noise-sensitive areas of new uses affected by traffic or railroad noise sources in Sacramento County are shown in **Table 3.12-3**. Where the noise level standards of Table 3.12-3 are predicted to be exceeded at new uses

proposed within Sacramento County which are affected by traffic or railroad noise, appropriate noise mitigation measures shall be included in the project design to reduce projected noise levels to a state of compliance with the Table 3.12-3 standards.

TABLE 3.12-3
NOISE STANDARDS FOR NEW USES AFFECTED BY TRAFFIC AND RAILROAD NOISE
SACRAMENTO COUNTY NOISE ELEMENT

New Land Use	Sensitive[1] Outdoor Area – Ldn	Sensitive Interior[2] Area – Ldn	Notes
All Residential	65	45	5
Transient Lodging	65	45	3,5
Hospitals & Nursing Homes	65	45	3,4,5
Theaters & Auditoriums	--	35	3
Churches, Meeting Halls, Schools, libraries, etc.	65	40	3
Office Buildings	65	45	3
Commercial Buildings	--	50	3
Playgrounds, Parks, etc.	70	--	
Industry	65	50	3

1. Sensitive areas are defined in acoustic terminology section of the General Plan.
2. Interior noise level standards are applied within noise-sensitive areas of the various land uses, with windows and doors in the closed positions.
3. Where there are no sensitive exterior spaces proposed for these uses, only the interior noise level standard shall apply.
4. Hospitals are often noise-generating uses. The exterior noise level standards for hospitals are applicable only at clearly identified areas designated for outdoor relaxation by either hospital staff or patients.
5. If this use is affected by railroad noise, a maximum (Lmax) noise level standard of 70 dB shall be applied to all sleeping rooms to reduce the potential for sleep disturbance during nighttime train passages.

Source: Sacramento County, 2011. *Sacramento County General Plan of 2005-2030*. November 9, 2011.

Policy NO-2: Proposals for new development within Sacramento County which may be affected by aircraft noise shall be evaluated relative to Table 4: Land Use Compatibility for Aircraft Noise [included in the *Noise Element, Sacramento County General Plan 2005-2030*].

Policy NO-4: New residential development within adopted Airport Policy Area boundaries, but outside the 60 dB CNEL, shall be subject to the following conditions:

A. Provide minimum noise insulation to 45 dB CNEL within new residential dwellings, including detached single family dwellings, with windows closed in any habitable room.

B. Notification in the Public Report prepared by the California Department of Real Estate disclosing the fact to prospective buyers that the parcel is located within an Airport Policy Area.

C. An Avigation Easement prepared by the Sacramento County Counsel's Office granted to the County of Sacramento, recorded with the Sacramento County Recorder, and filed with Department of Airports. Such Avigation Easement shall acknowledge the property

location within an Airport Planning Policy Area and shall grant the right of flight and unobstructed passage of all aircraft into and out of the subject Airport.

Exceptions: New accessory residential dwellings on parcels zoned Agricultural, Agricultural-Residential, Interim Agricultural, Interim General Agricultural, or Interim Limited Agricultural and between the 60 dB and 65 dB CNEL contours, shall be permitted within adopted Airport Policy Area boundaries, but would be subject to the conditions listed above.

Policy NO-5: The interior and exterior noise level standards for noise-sensitive areas of new uses affected by existing non-transportation noise sources in Sacramento County are shown by **Table 3.12-4**. Where the noise level standards of Table 3.12-4 are predicted to be exceeded at a proposed noise-sensitive area due to existing non-transportation noise sources, appropriate noise mitigation measures shall be included in the project design to reduce projected noise levels to a state of compliance with the Table 3.12-4 standards within sensitive areas.

TABLE 3.12-4
NON-TRANSPORTATION NOISE STANDARDS
SACRAMENTO COUNTY NOISE ELEMENT

	Median (L50) / Maximum (Lmax)[1]			
	Outdoor Area[2]		Interior[3]	
Receiving Land Use	**Daytime**	**Nighttime**	**Day & Night**	**Notes**
All Residential	55 / 75	50 / 70	35 / 55	--
Transient Lodging	55 / 75	--	35 / 55	4
Hospitals & Nursing Homes	55 / 75	--	35 / 55	5, 6
Theaters & Auditoriums	--	--	30 / 50	6
Churches, Meeting Halls, Schools, Libraries, etc.	55 / 75	--	35 / 60	6
Office Buildings	60 / 75	--	45 / 65	6
Commercial Buildings	--	--	45 / 65	6
Playgrounds, Parks, etc.	65 / 75	--	--	6
Industry	60 / 80	--	50 / 70	6

1. The Table 3.12-4 standards shall be reduced by 5 dB for sounds consisting primarily of speech or music, and for recurring impulsive sounds. If the existing ambient noise level exceeds the standards of Table 3.12-4, then the noise level standards shall be increased at 5 dB increments to encompass the ambient.
2. Sensitive areas are defined acoustic terminology section of the General Plan.
3. Interior noise level standards are applied within noise-sensitive areas of the various land uses, with windows and doors in the closed positions.
4. Outdoor activity areas of transient lodging facilities are not commonly used during nighttime hours.
5. Hospitals are often noise-generating uses. The exterior noise level standards for hospitals are applicable only at clearly identified areas designated for outdoor relaxation by either hospital staff or patients.
6. The outdoor activity areas of these uses (if any), are not typically utilized during nighttime hours.
7. Where median (L50) noise level data is not available for a particular noise source, average (Leq) values may be substituted for the standards of this table provided the noise source in question operates for at least 30 minutes of an hour. If the source in question operates less than 30 minutes per hour, then the maximum noise level standards shown would apply.

Source: Sacramento County, 2011. *Sacramento County General Plan of 2005-2030.* November 9, 2011.

Policy NO-6: Where a project would consist of or include non-transportation noise sources, the noise generation of those sources shall be mitigated so as not exceed the interior and exterior noise level standards of Table 3.12-4 at existing noise-sensitive areas in the project vicinity.

Policy NO-7: The "last use there" shall be responsible for noise mitigation. However, if a noise generating use is proposed adjacent to lands zoned for uses which may have sensitivity to noise, then the noise generating use shall be responsible for mitigating its noise generation to a state of compliance with the Table 3.12-4 standards at the property line of the generating use in anticipation of the future neighboring development.

Policy NO-8: Noise associated with construction activities shall adhere to the County Code requirements. Specifically, Section 6.68.090(e) addresses construction noise within the County.

Policy NO-12: All noise analyses prepared to determine compliance with the noise level standards contained within this Noise Element shall be prepared in accordance with **Table 3.12-5**.

TABLE 3.12-5
REQUIREMENTS FOR ACOUSTICAL ANALYSES PREPARED IN SACRAMENTO COUNTY

An acoustical analysis prepared pursuant to the Noise Element shall:

1. Be the responsibility of the applicant.
2. Be prepared by qualified persons experienced in the fields of environmental noise assessment and architectural acoustics.
3. Include representative noise level measurements with sufficient sampling periods and locations to adequately describe local conditions.
4. Estimate projected future (20 year) noise levels in terms of the Standards of Tables 3.12-3 and 3.12-4, and compare those levels to the adopted policies of the Noise Element.
5. Recommend appropriate mitigation to achieve compliance with the adopted policies and standards of the Noise Element.
6. Estimate interior and exterior noise exposure after the prescribed mitigation measures have been implemented.

Source: Sacramento County, 2011. *Sacramento County General Plan of 2005-2030*. November 9, 2011.

Policy NO-13: Where noise mitigation measures are required to satisfy the noise level standards of this Noise Element, emphasis shall be placed on the use of setbacks and site design to the extent feasible, prior to consideration of the use of noise barriers.

Policy NO-14: Noise analyses prepared for multi-family residential projects, town homes, mixed-use, condominiums, or other residential projects where floor ceiling assemblies or party-walls shall be common to different owners/occupants, shall be consistent with the State of California Noise Insulation standards.

Policy NO-15: The County shall have the flexibility to consider the application of 5 dB less restrictive exterior noise standards than those prescribed in Tables 3.12-3 and 3.12-4 in cases where it is impractical or infeasible to reduce exterior noise levels within infill projects to a state of compliance with the Table 3.12-3 or 3.12-4 standards. In such cases, the rational for such consideration shall be clearly presented and disclosure statements and noise easements should be included as conditions of project approval. The interior noise level standards of Tables 3.12-3 and 3.12-4 would still apply. The maximum allowable long-term noise exposure permissible for non-industrial uses is 75 dB L_{dn}.

These policies indicate that residential uses are optimally compatible with exterior noise levels of up to 65 dB L_{dn}/CNEL (from transportation sources). In addition, an interior noise level criterion of 45 dB L_{dn}/CNEL is applied to residential land uses to provide a suitable environment for indoor communication and sleep.

These policies generally indicate that exterior noise levels in residential areas should be mitigated such that they do not exceed the standards presented in Table 3.12-4 (for non-transportation sources). Where existing ambient noise levels exceed the general plan standards, the standard is increased in 5 dB increments to account for existing conditions.

Sacramento County Code

The Sacramento County code establishes Exterior and noise standards that apply to all properties within a designated noise area, as depicted in **Table 3.12-6**. The following rules and regulations from Chapter 6.68 of the Sacramento County Code would apply to development projects:

6.68.070 Exterior Noise Standards.

TABLE 3.12-6
EXTERIOR NOISE STANDARDS

Zone	Time Period	Exterior Noise Standard (dBA)
All county zoning districts	7:00 a.m. – 10:00 p.m.	55
	10:00 p.m. – 7:00 a.m.	50

SOURCE: Sacramento County Code, 2010.

When measured in the designated noise area, noise levels may not exceed the duration of time set forth following, the specified exterior noise standards in any one hour by:

1. Cumulative period of 30 minutes per hour: 0 dBA
2. Cumulative period of 15 minutes per hour: 5 dBA
3. Cumulative period of 5 minutes per hour: 10 dBA
4. Cumulative period of 1 minute per hour: 15 dBA
5. Level not to be exceeded for any time per hour: 20 dBA

If the ambient noise level exceeds that permitted by any of the first four noise-limit categories specified in subdivision, the allowable noise limit shall be increased in five dBA increments in each category to encompass the ambient noise level. If the ambient noise level exceeds the fifth noise level category, the maximum ambient noise level shall be the noise limit for that category. (SCC 490 § 2, 1981; SCC 254 § 1 (part), 1976.)

6.68.080 Interior Noise Standards.

a. In any apartment, condominium, townhouse, duplex or multiple dwelling unit it is unlawful for any person to create any noise from inside his unit that causes the noise level when measured in a neighboring unit during the periods ten p.m. to seven a.m. to exceed:

1. Forty-five dBA for a cumulative period of more than 5 minutes in any hour;
2. Fifty dBA for a cumulative period of more than 1 minute in any hour;
3. Fifty-five dBA for any period of time.

b. If the ambient noise level exceeds that permitted by any of the noise level categories specified in subdivision (a) of this section, the allowable noise limit shall be increased in five-dBA increments in each category to encompass the ambient noise level. (SCC 254 § 1 (part), 1976.)

6.68.090 Exemptions.

e. Noise sources associated with construction, repair, remodeling, demolition, paving or grading of any real property, provided said activities do not take place between the hours of eight p.m. and six a.m. on weekdays and Friday commencing at eight p.m. through and including seven a.m. on Saturday; Saturdays commencing at eight p.m. through and including seven a.m. on the next following Sunday and on each Sunday after the hour of eight p.m. Provided, however, when an unforeseen or unavoidable condition occurs during a construction project and the nature of the project necessitates that work in process be continued until a specific phase is completed, the contractor or owner shall be allowed to continue work after eight p.m. and to operate machinery and equipment necessary until completion of the specific work in progress can be brought to conclusion under conditions which will not jeopardize inspection acceptance or create undue financial hardships for the contractor or owner.

h. Noise sources associated with maintenance of residential area property, provided said activities take place between the hours of six a.m. and eight p.m. on any day except Saturday or Sunday, or between the hours of seven a.m. and eight p.m. on Saturday or Sunday;

6.68.120 Machinery, Equipment, Fans and Air Conditioning.

a. It is unlawful for any person to operate any mechanical equipment, pump, fan, air conditioning apparatus, stationary pumps, stationary cooling towers, stationary compressors, similar mechanical devices, or any combination thereof installed after July 1, 1976 in any manner so as to create any noise which would cause the maximum noise level to exceed:

1. Sixty dBA at any point at least one foot inside the property line of the affected residential property and three to five feet above ground level;
2. Fifty-five dBA in the center of a neighboring patio three to five feet above ground level;
3. Fifty-five dBA outside of the neighboring living area window nearest the equipment location. Measurements shall be taken with the microphone not more than three feet from the window opening but at least three feet from any other surface.

b. Equipment installed five years after July 1, 1976 must comply with a maximum limit of fifty-five dBA at any point at least one foot inside the property line of the affected residential property and three to five feet above ground level.

Airport Land Use Compatibility Plan

The State of California has adopted airport noise and safety standards that are implemented through Comprehensive Land Use Plans (CLUPs) prepared for public-use airports. The CLUPs are prepared and maintained and enforced by the Airport Land Use Commissions (ALUCs). In Sacramento County, the Sacramento Area Council of Governments (SACOG) serves as the

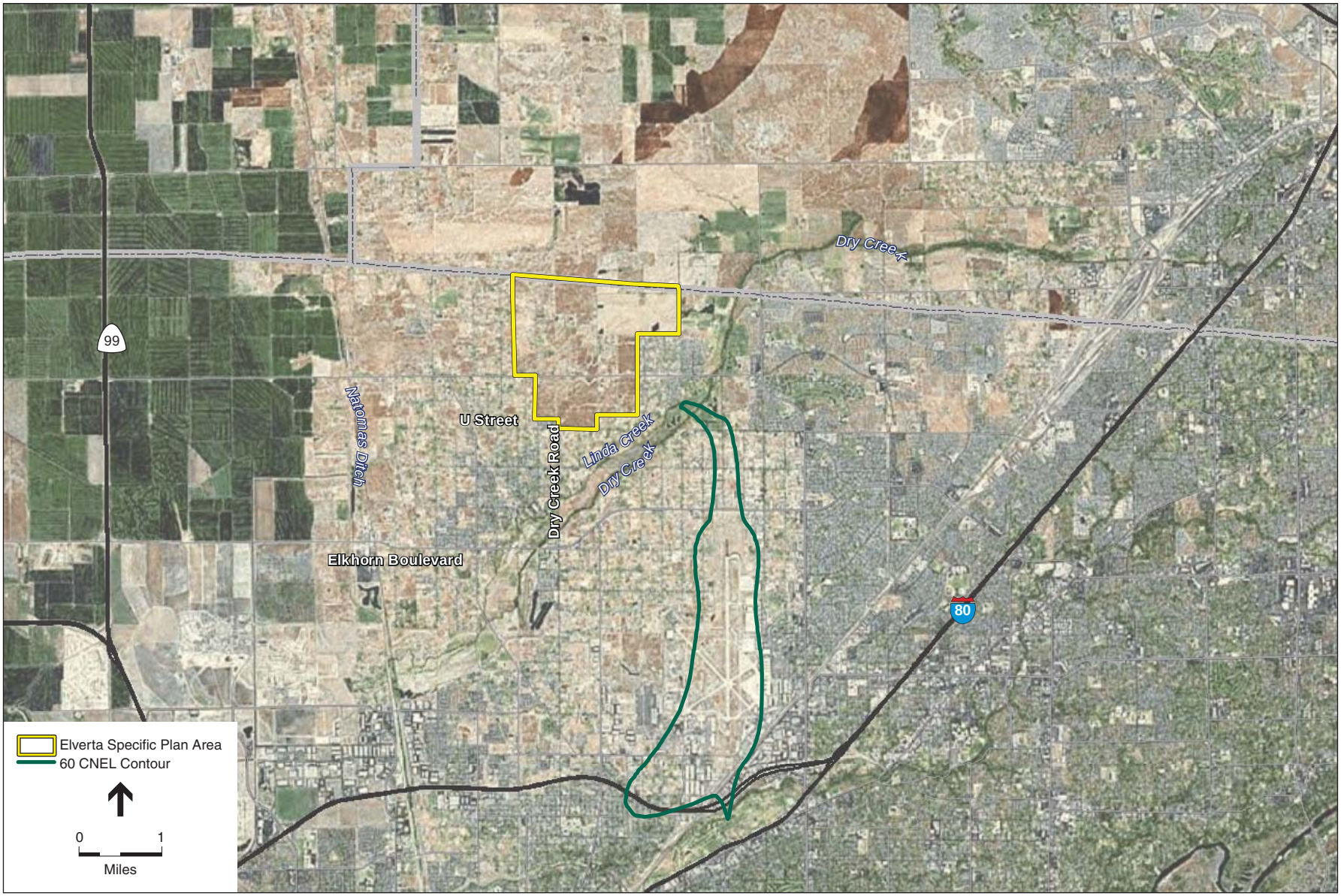
ALUC. The noise and safety standards identified in the CLUPs for local airports are implemented through the control of land use around airports with regard to the noise (ALUC, 1997).

Rio Linda Airport Comprehensive Land Use Plan

The Rio Linda Airport CLUP was adopted in December of 1988 and amended December 1992. Rio Linda Airport CLUP requires that cities and counties are responsible for ensuring that an acoustical study is completed for residential projects, other than single family detached, having an airport caused noise impact greater than 60 dB CNEL that shows the structures are designed to meet the interior noise level standard of 45 dB CNEL. The 65 CNEL noise contour line at Rio Linda Airport lies southwest of the Elkhorn/Dry Creek intersection, over 1.5 miles from the boundary of the project site (SACOG, 1992). The 60 CNEL contour line would attenuate further than the 65 CNEL contour line but would not affect the Plan area and will not be considered for further analysis.

McClellan Airport Comprehensive Land Use Plan

The CLUP for McClellan Air Force Base (AFB) was prepared by the ALUC in January 1987 and amended in December of 1992 (SACOG, 1987). McClellan AFB closed as a military facility in 2001. In December of 2002, the McClellan AFB Reuse and Implementation Plan was adopted by the County. The former AFB is now known as McClellan Park including McClellan Airport. As shown in **Figure 3.12-3**, the Plan area lies outside of the existing 60 CNEL contour line of McClellan Airport. Since the airport would serve civilian-use airport operations in the future, the contours of safety and overflight zones are anticipated to shrink. The theoretic capacity contour of 60 dBA CNEL at full buildout in 2022 is expected to reside entirely within McClellan Park with the exception of a small strip to the north that sits outside of the McClellan Park area. Airport construction, maintenance of navigation aids, and/or seasonal changes in airport activity may affect aircraft in flight (SCAS, 2010). SACOG is currently working on an Airport Land Use Compatibility Plan Update.



SOURCE: SCAS, 2005; ESRI, 2007; Bing Maps, 2009; and ESA, 2008

Figure 3.12-3
McClellan Airport Contour Map

3.12.3 References

Airport Land Use Commission for Sacramento, Sutter, Yolo, and Yuba Counties (ALUC), 1997. Mather Airport Comprehensive Land Use Plan, May, 1997.

Caltrans, Technical Noise Supplement, 1998.

Caltrans, 2006. Traffic Noise Analysis Protocol, August, 2006.

Caltrans Division of Aeronautics (Caltrans), 1990. Title 21, Subchapter 6, Article 1, 5006. Online at: http://www.dot.ca.gov/hq/planning/aeronaut/documents/statenoisestnds.pdf.

Federal Aviation Regulations (FAR), 1983. Part 150, Table 1. Online at: http://www.faa.gov/about/office_org/headquarters_offices/aep/planning_toolkit/media/II.B.pdf

Federal Highway Administration; 23 CFR, Part 772, Caltrans, *Traffic Noise Analysis Protocol*, 2006.

Federal Transit Administration (FTA) 2006, Traffic Noise and Vibration Impact Assessment. May, 2006.

Sacramento County, Adopted General Plan Noise Element, 1993. Available online at: http://www.msa2.saccounty.net/planning/Documents/General-Plan/Noise-Element.pdf

DERA, 2007. Final Environmental Impact Report – Elverta Specific Plan and Associated Subdivision Map Known as Countryside Equestrian Estates. County of Sacramento Department of Environmental Review and Assessment Published May 2007.

Sacramento County, 2011. *Noise Element. General Plan of 2005 – 2030.* Amended November 9, 2011.

SACOG, 1992. *Rio Linda Airport CLUP, Airport Land Use Commission. December 1992*. Found online at: http://www.sacog.org/airport/clups/2008/Rio%20Linda%20Airport%20CLUP%20Amend%20Dec%201992%20-%2093-018.pdf

Sacramento County Code, Chapter 6.68 Noise Control, June, 2010.

Sacramento County Airport System (SCAS), 2010. Found online: http://www.sacairports.org/noise/mcc/mcc_alerts.html

SACOG, 1987. McClellan Air Force Base Comprehensive Land Use Plan, January 1987 amended December, 1992. Found online: http://www.sacog.org/airport/clups/2008/McClellan%20AFB%20CLUP%20Amend%20Dec%201992%20-%2093-014.pdf

3.13 Public Services, Utilities and Recreation

3.13.1 Existing Setting

Unless otherwise cited, setting information provided in this section comes from the 2007 Final Environmental Impact Report (FEIR) prepared by the County of Sacramento Department of Environmental Review and Assessment (DERA) for the Elverta Specific Plan and Associated Subdivision Map Known as Countryside Equestrian Estates (DERA, 2007).

The following is a list of public services that are relevant to the Plan area and the agencies responsible for providing those services:

- **Water Supply –** Rio Linda/Elverta Community Water District and California American Water Company
- **Wastewater Service –** Sacramento Regional County Sanitation District and County Sanitation District No. 1 (Sacramento Areas Sanitation District)
- **Solid Waste Disposal –** Sacramento County Department of Waste Management and Recycling
- **Electric Service –** Sacramento Municipal Utility District
- **Natural Gas Service –** Pacific Gas and Electric Company
- **Police Protection –** Sacramento County Sheriff's Department
- **Fire Protection –** Sacramento Metropolitan Fire District
- **Schools –** Center Unified, Elverta Joint Elementary, and Grant Joint Union High School Districts
- **Library Services –** Sacramento Public Library
- **Parks and Recreation –** Rio Linda & Elverta Recreation and Park District

3.13.1.1 Water Supply

Water supply within Sacramento County consists of surface water from major rivers and pumped groundwater from underground aquifers. A substantial network of water purveyors and/or districts distributes the water supply, primarily to municipal and agricultural users. Individual private wells also supply rural residential and agricultural uses within the County.

There are three primary groundwater zones in Sacramento County: the North Sacramento area (north of the American River); the South Sacramento area (between the American and the Cosumnes River); and the Galt area. Each groundwater zone is characterized by a cone of depression. Based on 1996 data, the North Sacramento area, which includes the Plan area, has a cone of depression that extends to about 40 feet below sea level. The center of this cone is located in the vicinity of McClellan Airport. Groundwater levels in the vicinity of the Plan area have historically been declining about 1.5 feet per year.

Within the Plan area, water service is currently provided by private, domestic wells. Water service will be provided by the Rio Linda/Elverta Community Water District (RL/ECWD) and the California American Water Company or Cal-Am (formerly CUCC). The RL/ECWD holds franchise rights to approximately 80 percent of the Plan area, while Cal-Am holds franchise rights to approximately 10 percent of the Plan area (in the northeast corner).

3.13.1.2 Wastewater

The Sacramento Regional County Sanitation District (SRCSD) and County Sanitation District No. 1 (CSD-1), also known as the Sacramento Area Sanitation District (SASD), provide public sewer service to the urbanized portion of unincorporated Sacramento County. There are currently no public sewer facilities within the Plan area; however, other portions of the larger Rio Linda/Elverta Community Plan area are connected to the public system. Existing development within the Plan area is served by private septic systems.

SRCSD and CSD-1 classify sewer pipelines carrying 10 million gallons per day (MGD) or more as "interceptors". Sewer pipes carrying between 1 MGD and 10 MGD are known as "trunks". Sewer pipes carrying less than 1 MGD are referred to as "collectors".

CSD-1 provides local sewage collection and transport from its facilities to the regional sewage transmission, treatment, and disposal facilities operated by SRCSD. CSD-1 is responsible for the operation and maintenance of the local trunk and collection systems within SRCSD that are not operated and maintained by the Cities of Sacramento or Folsom. SRCSD interceptors convey wastewater to the Sacramento Regional Wastewater Treatment Plant (SRWTP), which is located in Elk Grove. SRWTP provides secondary treatment of wastewater which is then discharged to the Sacramento River under the terms of a National Pollutant Discharge Elimination System (NPDES) permit.

3.13.1.3 Solid Waste

The Sacramento County Department of Waste Management and Recycling (formerly the County Solid Waste Division) provides weekly garbage collection, biweekly green waste collection and mixed recycling services, and an annual neighborhood cleanup service. The Department also operates the Kiefer Landfill, located near Kiefer Boulevard and Grant Line Road, which is the primary municipal solid waste disposal facility in Sacramento County. The 660± acre Kiefer Landfill is a Class III facility; it accepts wastes that consist of chemically and biologically decomposable material that will not significantly affect groundwater quality. No hazardous materials are allowed in this facility. The planned capacity of the recently expanded Kiefer Landfill is sufficient to accommodate projected disposal needs of the County through approximately 2035, however, at current usage rates the landfill is anticipated to last until 2064 (CalRecycle, 2010).

3.13.1.4 Energy Service

The Sacramento Municipal Utility District (SMUD) provides electric service and Pacific Gas and Electric Company (PG&E) provides natural gas service to the project site vicinity. SMUD generates,

transmits and distributes electric power to a 900-square mile service area including Sacramento County and a portion of Placer County. SMUD gets its electricity from diverse resources, including: hydro generation; cogeneration plants; advanced and renewable technologies such as wind, solar, and biomass/landfill gas power; and power purchased on the wholesale market (Sacramento County, 2009). PG&E delivers natural gas from three major sources – California, the southwestern U.S. and Canada. Additionally, PG&E owns and operates an electric transmission tower line, within a 75-foot wide easement.

3.13.1.5 Law Enforcement

The Sacramento County Sheriff's Department (SCSD) provides general and specialized law enforcement services to Sacramento County, local police protection to the unincorporated area, and contract police services to some of the cities in Sacramento County. Local police protection includes response to calls for service, investigations, surveillance and pro-active patrol activities. Current demand for local police protection exceeds the supply of resources. The demand results primarily from population growth and increased business activity (DERA, 2007).

The stationhouses located throughout the County house patrol and investigative personnel dedicated to specific geographical boundaries. Certain types of reports of criminal activity are completed at the community service centers. Patrol officers respond to crimes in progress, residential burglaries, noise disturbances and other events requiring immediate law enforcement intervention (DERA, 2007).

The SCSD has over 2,000 paid personnel including over 1,700 sworn officers and 500 non-sworn staff. The SCSD also has a reserve force of over 160 officers and roughly 620 volunteer forces. The North Division of the SCSD provides patrol services for approximately 415,000 people including those living in the communities of Rio Linda and Elverta. The Division is currently staffed with 134 sworn officers and a support staff of 19. The North Division operates out of the Garfield Station located at 5510 Garfield Avenue in Sacramento (Sacramento County Sheriff's Department, 2010).

3.13.1.6 Fire Protection

Fire protection and emergency rescue services will be provided to the Plan area by the Sacramento Metropolitan Fire District (SMFD). In addition to fire suppression, the District provides additional services including: building inspection, fire prevention, public education, emergency medical aid, rescue services and fire hydrant maintenance. The largest fire district in Sacramento County, SMFD currently operates 42 stations and provides service through 750 uniformed and support personnel to nearly 600,000 people in a 417-square-mile area. The SMFD operates 12 transporting Advanced Life Support medics, seven reserve transporting medics, 39 engine companies, five truck companies, 24 grass engines, two crash rescue rigs, six water tenders, four swift water rescue bikes, five swift water rescue inflatable rubber boats, five air units, three reserve firefighter engine companies, and two reserve firefighter grass engines (SMFD, 2010).

The closest existing fire station (No. 117) is located immediately east of the Plan area at Elverta Road and Cherry Brook Drive. Another fire station (No. 116) is located one mile west of the Plan

area at Elverta Road and Elwyn Avenue. A third fire station (No. 111) is located southwest of the Plan area on Front Street, but is planned to be replaced by a new station at a site on Rio Linda Boulevard just north of Elkhorn Boulevard. The Fire District has indicated that these three facilities will provide sufficient service for the proposed Plan area at buildout.

3.13.1.7 Schools

Sacramento County includes 15 school districts and the Plan area is located within three of the districts. The portion of the Specific Plan located northwest of the Elverta Road/16th Street intersection is served by the Elverta Joint Elementary School District and the Twin Rivers Unified School District, overlapping districts that serve elementary and high school students respectively. The remainder of the Plan area is located within the Center Unified School District that serves students from elementary through high school.

3.13.1.8 Parks and Recreation

The unincorporated portions of Sacramento County are served by 18 local park districts and two County service areas. The Rio Linda Elverta Recreation and Park District is the local park service provider for the Plan area. The County Department of Regional Parks, Recreation and Open Space (County Parks) manages the adjacent Gibson Ranch and Dry Creek Parkway regional park facilities.

3.13.1.9 Library Service

The nearest library to the Plan area is the Rio Linda branch of the Sacramento Public Library system. The library is located in downtown Rio Linda, on the south side of Oak Lane and M Street. Residents of the Community Plan area may also utilize the North Highlands Branch Library, located along Watt Avenue, between Elkhorn Boulevard and Q Street (DERA, 2007).

The Sacramento Public Library is planning for the construction of the Rio Linda replacement library. The Elverta Fee Program in the Public Facilities Financing Plan (PFFP) (located in the DERA, 2007 FEIR) includes a library development fee component that will fund the project's fair share contribution towards the construction costs of the replacement library (DERA, 2007).

3.13.2 Regulatory Setting

There are no applicable federal, state or local laws that are applicable to the alternative under consideration.

3.13.3 References

CalRecycle, 2010. Solid Waste Information System (SWIS) Facility/Site Summary Details for the Sacramento County Landfill (Kiefer). Available online at: http://www.calrecycle.ca.gov/SWFacilities/Directory/34-AA-0001/Detail/.

DERA, 2007. Final Environmental Impact Report – Elverta Specific Plan and Associated Subdivision Map Known as Countryside Equestrian Estates. County of Sacramento Department of Environmental Review and Assessment Published May 2007.

Sacramento County Planning and Community Development Department, 1998. Policy Plan for the Rio Linda and Elverta Community Plan; June 3, 1998.

Sacramento County, 2009. Sacramento County General Plan Update Draft Environmental Impact Report. Available online at: http://www.dera.saccounty.net/PublicNotices/SQLView/ProjectDetails/tabid/71/Default.aspx?ProjectID=31418.

Sacramento County Sheriff's Department, 2010. General Information. Available online at: http://www.sacsheriff.com/.

Sacramento Metropolitan Fire District (SMFD), 2010. Available online at < http://www.sacmetrofire.ca.gov/.

This Page is Intentionally Left Blank

3.14 Transportation and Traffic

3.14.1 Existing Setting

This section identifies the existing transportation conditions to provide a basis for assessing the transportation impacts associated with the implementation of the Applicant's Preferred Alternative and other alternatives. The transportation and circulation study area is shown in **Figure 3.14-1**.

3.14.1.1 Existing Roadways

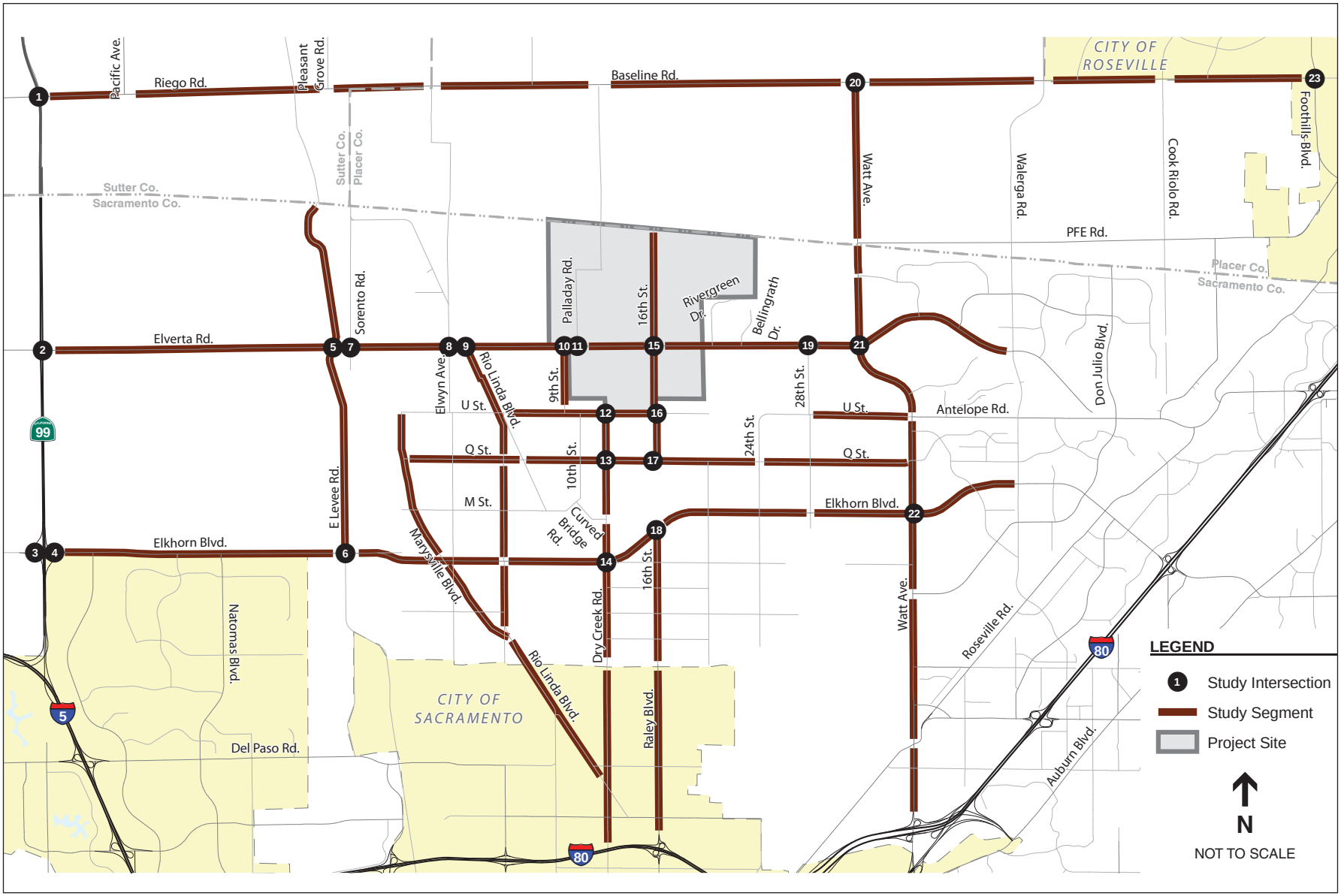
The study area is generally bounded by State Route (SR) 70/99 on the west, Watt Avenue on the east, Riego Road – Baseline Road on the north, and Interstate 80 (I-80) on the south. The following describes the freeway facilities and local roadways that would serve the project (see **Appendix F** for a figure showing the number of lanes for roads within the study area).

- **State Route 70/99** is a north-south state route that connects the core of the Sacramento region with the cities of Marysville (by SR 70) and Yuba City (by SR 99). SR 99 is a four-lane divided freeway from Interstate 5 (I-5) to Elkhorn Boulevard, where it transitions to a four-lane divided expressway. The highway includes a grade-separated interchange at Elkhorn Boulevard, at-grade traffic signal controlled intersections at Elverta Road and Riego Road, and an at-grade side-street stop-controlled intersection at Sankey Road.

- **Riego Road – Baseline Road** is an east-west rural arterial road that links SR 99 with the City of Roseville. Riego Road is two lanes through the study area, with an at-grade traffic signal controlled intersection at SR 99. Riego Road becomes Baseline Road at the Sutter/Placer County line near the Pleasant Grove Road intersection. Baseline Road intersects Watt Avenue and extends east to the City of Roseville.

- **Elverta Road** is a two-lane east-west arterial from Garden Highway to east of Watt Avenue. Elverta Road bisects the project site and provides direct access to the project site and internal project site roadways. Elverta Road intersects SR 99 at an at-grade signalized intersection.

- **Elkhorn Boulevard** is an east-west roadway continuing from Power Line Road west of SR 99 and extending east into Sacramento County through the Rio Linda and Antelope communities to I-80, where it becomes Greenback Lane. Elkhorn Boulevard is a two- to four-lane roadway within the study area and serves the residential land uses in the City of Sacramento and Sacramento County.



SOURCE: Fehr & Peers, 2011; and ESA, 2011

Elverta Specific Plan EIS . 207431

Figure 3.14-1
Study Area

Dry Creek Road is a north-south two-lane roadway that extends from U Street to South Avenue, south of I-80. Dry Creek Road does not provide direct access to I-80, but does serve as one of the few crossings of Dry Creek and runs north-south through the study area.

- **16th Street** is a north-south two-lane roadway. It extends from the Sacramento/Placer County line to Q Street and from Elkhorn Boulevard to the Sacramento city limits, where is becomes Raley Boulevard. 16th Street does not cross Dry Creek. Raley Boulevard provides direct access to I-80 with a grade-separated interchange.

- **Watt Avenue** is a north-south arterial that extends from its northern terminus at Baseline Road south through the core of Sacramento County to the City of Elk Grove. Watt Avenue has a grade-separated interchange with I-80. The roadway varies from two to six lanes within the study area.

3.14.1.2 Public Transit System

Regional Transit (RT) provides transit service in the greater Sacramento area. The project site lies on the outskirts of the urbanized Sacramento area where existing transit service is limited (see **Appendix F** for a figure showing the transit service within the study area). A description of transit routes in proximity to the project site is provided below.

- **Light Rail (Watt/I-80 – Downtown – Mather/Mills)** provides service between the Watt Avenue/I-80 and Mather Field/Mills Light Rail Transit (LRT) stations. At the Watt/I-80 Station, service is provided during weekdays, weekends, and holidays. The light rail runs generally every 15 minutes, but reduces to every 30 minutes after 6:30 PM (outbound) and 9:00 PM (inbound).

- **Route 19 (Rio Linda)** provides fixed-route service to the Rio Linda/Elverta Community and is the nearest service to the project site. Route 19 travels on Elverta Road, Rio Linda Boulevard, Elkhorn Boulevard, and Dry Creek Road and provides service between the Watt/I-80 and Arden/Del Paso light rail stations. The bus runs every day, every 60 minutes.

- **Route 80 (Watt – Elkhorn)** provides fixed route service to the Citrus Heights, North Highlands, Carmichael, Arden, and Rosemont communities. Route 80 travels on Greenback Avenue/Elkhorn Boulevard and Watt Avenue. Service is provided during weekdays, weekends, and holidays between Greenback Lane/Auburn Boulevard and the Watt/Manlove LRT Station. The bus runs every 60 minutes.

- **Route 84 (Watt – North Highlands)** provides fixed route service to the North Highlands, Carmichael, Arden, and Rosemont communities. Route 84 travels on Watt Avenue between Elverta Road and the Watt/Manlove LRT Station. Service is provided during the weekdays and on Saturdays. No service is provided on Sundays or holidays. The bus runs every 60 minutes.

3.14.1.3 Pedestrian and Bicycle Facilities

The California Department of Transportation's *Highway Design Manual* identifies three categories of bikeways (Caltrans, 2012b). A Class I Bike Path provides a completely separated

right-of-way for the exclusive use of bicycles and pedestrians; a Class II Bike Lane provides a striped lane for one-way bike travel on a roadway; and a Class III Bike Route provides for shared use with pedestrian, and motor vehicle traffic along a roadway. See **Appendix F** for a figure showing the existing and proposed on- and off-street bicycle facilities within the study area.

Pedestrian facilities are limited in the project area and generally exist only along improved frontages. For example, on Elverta Road, sidewalks are provided along commercial frontages at Watt Avenue and along residential frontages west of the Cherry Island Golf Course; however, between these two locations, no sidewalks are provided.

3.14.2 Study Locations and Methods

This section contains a detailed list of study facilities, the definitions of the levels of service, and results of the existing conditions analysis.

3.14.2.1 Circulation Network Analyzed

Study facilities that were selected for analysis include 23 intersections and 55 road segments on 13 roadways (see **Figure 3.14-1**). In addition, this study analyzed four segments on the SR 99 freeway, between I-5 and Sankey Road, and the future interchange ramp junctions at Elverta Road. Intersections, roadway segments, and freeway facilities were selected for analysis based on their proximity to the project site, and potential use by project traffic.

3.14.2.2 Existing Traffic Operating Conditions

Intersection turning movement counts were conducted in October 2010 during the AM and PM peak hours for most study intersections. The intersections at Elkhorn Boulevard/SR 99 Southbound Ramps and Elkhorn Boulevard/SR 99 Northbound Ramps were counted in May 2007. The intersection of Baseline Road/Watt Avenue was counted in August 2010. Daily roadway segment counts, conducted between 2007 and 2010, came from several sources, including the County of Sacramento count database, the City of Roseville count database, and new counts conducted for this study. Additional existing volumes were estimated using the 2010 peak hour intersection and daily roadway volumes. See **Appendix F** for figures showing the existing AM and PM peak-hour intersection turning movement volumes, and existing daily roadway segment traffic volumes.

Level of Service Definitions

The operational characteristics of the roadway network are described using the term Level of Service (LOS). LOS is a qualitative measure of traffic operating conditions whereby a letter grade, from A (the best) to F (the worst), is assigned. These grades represent the perspective of drivers and are an indication of the comfort and convenience associated with driving. The LOS grades are generally defined as follows.

- LOS A represents free-flow travel with an excellent level of comfort and convenience and the freedom to maneuver.

- LOS B has stable operating conditions, but the presence of other road users causes a noticeable, though slight, reduction in comfort, convenience, and maneuvering freedom.
- LOS C has stable operating conditions, but the operation of individual users is substantially affected by the interaction with others in the traffic stream.
- LOS D represents high-density, but stable flow. Users experience severe restriction in speed and freedom to maneuver, with poor levels of comfort and convenience.
- LOS E represents operating conditions at or near capacity. Speeds are reduced to a low but relatively uniform value. Freedom to maneuver is limited, with users experiencing frustration and poor comfort and convenience. Unstable operation is frequent, and minor disturbances in traffic flow can cause breakdown conditions.
- LOS F is used to define forced or breakdown conditions. This condition exists wherever the volume of traffic exceeds the capacity of the roadway. Long queues can form behind these bottleneck points with queued traffic traveling in a stop-and-go fashion.

Intersection Analysis

The existing AM and PM peak-hour intersection turning movement volumes and lane configurations were used to calculate levels of service at the study intersections. Intersection LOS and delays, and jurisdictional LOS thresholds for each study intersection are presented in **Appendix F**.

The study intersections operate at an acceptable LOS, except the following three study intersections, which currently operate unacceptably, based on their jurisdictional standards:

- SR 99 Northbound Off-Ramp/Elkhorn Boulevard (LOS F in the PM peak hour)
- Elverta Road/28th Street (LOS F in the PM peak hour)
- Baseline Road/Foothills Boulevard (LOS D in the AM and PM peak hours)

Unsignalized intersections were evaluated using the peak-hour volume warrant published in the *California Manual on Uniform Traffic Control Devices* (MUTCD) to determine if signal control is warranted under existing conditions (Caltrans, 2012a). The SR 99 Northbound Ramps/Elkhorn Boulevard intersection currently meets the peak-hour volume warrant.

Roadway Segment Analysis

The daily volumes (see figure in **Appendix F**) were compared to the capacity criteria for arterial roadway segments. Intersection LOS and v/c ratios and jurisdictional LOS thresholds for each study road segment are presented in **Appendix F**. The study roadways operate at an acceptable LOS, except for Watt Avenue between Roseville Road and I-80, which currently operates at an unacceptable LOS F.

Freeway Segment Analysis

SR 99 has four lanes within the study area. All of the freeway mainline segments currently operate acceptably, at LOS E or better, in both the AM and PM peak hours in both directions (see **Appendix F**).

3.14.3 Regulatory Setting

3.14.3.1 State

The following State regulations are applicable to freeway facilities.

State Route 99 Transportation Corridor Concept Report

A Transportation Corridor Concept Report (TCCR) assesses a highway's current and future operating conditions and uses that and other information to establish a 20-year Route Concept for each segment of the route. A Route Concept is comprised of a Concept LOS and a description of the Concept Facility. The TCCR then determines the nature and extent of improvements to attain the Route Concept. The Concept LOS applies to State highway intersections, interchange ramp terminal intersections, freeway segments, and freeway ramp junctions or weaving sections.

Caltrans' *State Route 99 Transportation Corridor Concept Report* (2010) includes the following, which is applicable to freeway facilities.

- Concept LOS represents the minimum acceptable service conditions over the next 20 years. District 3 has generally established minimum Concept LOS standards for the 20-year planning horizon at LOS D for rural segments and LOS E for urban segments.

The Concept LOS for SR 99 north of Interstate 5 (I-5) to the Feather River Bridge is LOS E.

3.14.3.2 Local

The following regional regulations are applicable to roadways and intersections. Minimum acceptable levels of service for the various jurisdictions in the study area are described below (see **Appendix F** for a tabular presentation of the minimum acceptable service levels.

County of Sacramento

Sacramento County General Plan

The *Sacramento County General Plan of 2005-2030* (amended November 9, 2011) includes the following policy applicable to transportation and circulation.

- **Policy CI-9:** Plan and design the roadway system in a manner that meets Level of Service (LOS) D on rural roadways and LOS E on urban roadways, unless it is infeasible to implement project alternatives or mitigation measures that would achieve LOS D on rural roadways and LOS E on urban roadways. The urban areas are those areas within the Urban Service Boundary as shown in the Land Use Element of the Sacramento County General Plan. The areas outside the Urban Service Boundary are considered rural.

Sacramento County's Traffic Impact Analysis Guidelines

Sacramento County's *Traffic Impact Analysis Guidelines* (July 2004) define rural and urban areas, stating the following under Section F (Acceptable Levels of Service):

- The County defines the minimum acceptable operation level for its roadways and intersections to be LOS D for rural areas and LOS E for urban areas. The urban areas are those areas within the Urban Services Boundary as shown in the Land Use Element of the *Sacramento County General Plan*. The areas outside the Urban Service Boundary are considered rural.

Most of the Sacramento County study locations are within the Urban Services Boundary, except for one segment. Therefore, LOS E is the minimum acceptable LOS for all County roadway segments and intersections, except Elverta Road between East Levee Road and SR 99, which will have a minimum acceptable LOS of D for the purpose of this study.

City of Sacramento

City of Sacramento General Plan

The *City of Sacramento General Plan* (adopted March 3, 2009) includes the following policy applicable to transportation and circulation.

- **Policy M 1.2.2 (c):** Base Level of Service Standard – the City shall seek to maintain the following standards for all areas outside of multi-modal districts.

    - Maintain operations on all roadways and intersections at LOS A-D at all times, including peak travel times, unless maintaining this LOS would, in the City's judgment, be infeasible and/or conflict with the achievement of other goals. LOS E or F conditions may be accepted, if provisions are made to improve the overall system and/or promote non-vehicular transportation as part of a development or a City-initiated project.

The minimum acceptable LOS for City of Sacramento roadway facilities is LOS D.

Sutter County

Sutter County General Plan

The *Sutter County General Plan* (adopted December 6, 1994) includes the following policy applicable to transportation and circulation.

- **Policy 2.A.4:** The County shall strive to develop and manage its roadway system to maintain a minimum level of service D (LOS D).

Placer County

Placer County General Plan

Placer County has established minimum acceptable LOS thresholds for roadways and intersections in the *Placer County General Plan* (adopted August 16, 1994).

- **Policy 3.A.7:** The County shall develop and maintain its roadway system to maintain the following minimum levels of service (LOS).

    a. LOS "C" on rural roadways, except within one-half mile of state highways, where the standard shall be LOS D.

    b. LOS "C" on urban/suburban roadways except within one-half mile of state highways, where the standard shall be LOS D.

The County may allow exceptions to these LOS standards where it finds that the improvements or other measures required to achieve the LOS standards are unacceptable based on established criteria. In allowing any exceptions to the standards, the County shall consider the following factors:

- The number of hours per day that the intersection or roadway segment would operate at conditions worse than the standard
- The ability of the required improvement to significantly reduce peak hour delay and improve traffic operations
- The right-of-way needs and the physical impacts on surrounding properties
- The visual aesthetics of the required improvement and its impact on community identity and character
- Environmental impacts including air quality and noise impacts
- Construction and right-of-way acquisition costs
- The impacts on general safety
- The impacts of the required construction phasing and traffic maintenance
- The impacts on quality of life as perceived by residents
- Other environmental, social, or economic factors on which the County may base findings to allow standards to be exceeded

Exceptions to the standards will be allowed only after all feasible measures and options are explored, including alternative forms of transportation.

An amendment to the *General Plan* (Placer County Resolution 2005-149, June 28, 2005), allows an additional exception for community plans or specific plans. These plans can establish their own LOS thresholds within the plan boundaries. The *Placer Vineyard Specific Plan* established

LOS D or better conditions for the plan area and its boundaries. Consequently, LOS D applies to Baseline Road (Pleasant Grove Road [south] to Walerga Road) and Watt Avenue (Baseline Road to Dyer Lane) in Placer County. These roadways provided direct access to the *Placer Vineyards Specific Plan* along its frontage. This applicability of using these LOS thresholds was confirmed with Placer County Department of Transportation staff (personal communication with Andrew Gaber, Placer County Department of Transportation).

City of Roseville

City of Roseville General Plan

The Circulation Element of the *City of Roseville General Plan 2025* (adopted May 5, 2010) includes the following policy applicable to transportation and circulation.

- Level of Service Goal, Policy 1: Maintain a level of service "C" standard at a minimum of 70 percent of all signalized intersections and roadway segments in the City during the PM peak hour. Exceptions to the LOS "C" standard may be considered for intersections where the City finds that the required improvements are unacceptable based on established criteria identified in the [General Plan] implementation measures

3.14.3 References

California Department of Transportation (Caltrans), 2010. *State Route 99 Transportation Corridor Concept Report*, August 2010.

California Department of Transportation (Caltrans), 2012a. *California Manual on Uniform Traffic Control Devices* (MUTCD), Part 4 (Traffic Signals), January 2012.

California Department of Transportation (Caltrans), 2012b. *Highway Design Manua*l, Chapter 1000 (Bikeway Planning and Design), 6th Edition, May 2012.

City of Roseville, 2010. City of Roseville General Plan 2025. Adopted May 5, 2010. Available online at: http://www.roseville.ca.us/planning/general_plan_n_development_guidelines.asp

City of Sacramento, 2009. Sacramento 2030 General Plan. Adopted March 3, 2009. Available online at: http://www.sacgp.org/

Placer County, 1994. Placer County General Plan (adopted August 16, 1994). Available online at: http://www.placer.ca.gov/Departments/CommunityDevelopment/Planning/CommPlans/PCGP.aspx

Sacramento County, 2011. Circulation Element of the General Plan. Adopted December 15, 1993, amended November 9, 2011. Available online: http://www.msa2.saccounty.net/planning/Pages/GeneralPlan.aspx

Sacramento County Department of Transportation, 2004. *Traffic Impact Analysis Guidelines*, July 2004.

Sutter County, 1994. Sutter County General Plan. Adopted December 6, 1994. Available online at: http://www.co.sutter.ca.us/pdf/cs/ps/General_Plan-Policy_Document.pdf

CHAPTER 4.0
Environmental Consequences

4.1 Introduction

This chapter describes the environmental consequences that would result from the development of the Applicant's Preferred Alternative and alternatives. The analysis presented in this chapter has been prepared in accordance with the Council on Environmental Quality's (CEQ) National Environmental Policy Act (NEPA) Regulations (40 CFR 1502.16). The direct environmental effects of each alternative are provided for issue areas discussed in **Chapter 3.0**.

4.1.1 Determination of Significance

The CEQ NEPA Regulations (40 CFR 1508.27) define significance of effects in terms of context and intensity. Context refers to society as whole, the affected region or interests, and the locality. Intensity refers to the severity of effect. The following were considered in evaluating intensity:

- Whether effects are beneficial or adverse
- Degree of public health or safety effects
- Unique resource characteristics of the geographic area
- Degree of controversy
- Uncertainty and unknown risks of effects
- Degree to which action may set a precedence
- Cumulative effects
- Effects on scientific, cultural, or historic resources
- Effects to endangered or threatened species or habitat(s)
- Violation of federal, state, or local environmental regulations

Mitigation measures are recommended where feasible for significant and adverse impacts. Each mitigation measure is numbered to correspond to an applicable impact statement. In some cases, a single mitigation measure is applicable to multiple impacts statements, and is cross referenced in the text.

This Page is Intentionally Left Blank

4.2 Aesthetics

This section includes the visual impact analysis for the alternatives. The analysis is based on site visits, a review of maps and aerial photographs, and consideration of the change to existing views.

4.2.1 Alternatives A, B and C

Impact 2.1: Temporary Degradation of Visual Character during Construction

Construction activities associated with Alternatives A, B and C would introduce heavy equipment and associated vehicles including dozers, graders, and trucks into the viewshed of various viewer groups. Construction of the Elverta Specific Plan area would occur in multiple phases over a 20-year period so that construction and staging areas would re-locate within the project site over the 20-year period. Construction of infrastructure and of the participating parcels is anticipated to occur prior to 2022. Highly sensitive viewer groups affected by development would include residents on non-participant properties within the project site and residents on properties adjacent to the project site. Passing roadway users would have low sensitivity to visual changes and relatively brief views of the site. The change would be substantial for existing residents who currently have views typical of rural residential, agricultural and open space areas. Thus, construction activities would have a temporary significant and adverse impact on visual character.

There is no feasible mitigation which would prevent views of construction from existing residents within and surrounding the project site. The construction of large areas of land would make screening of construction infeasible. Thus, this impact would temporarily remain significant and adverse during construction activities.

Mitigation: None. Alternatives A, B and C have significant and adverse impacts with no feasible mitigation.

Impact 2.2: Degradation of Visual Character

The development of Alternatives A, B and C would include residential, commercial, office and education uses on approximately 563.6 acres, respectively, for participating parcels. The acreages would primarily replace open space, with some replacement of rural residential and agricultural areas. Development of the project site would be required to undergo design review and comply with Community Design Guidelines by the Sacramento County (Zoning Code Title I, Chapter 10, Article 11) as well as development guidelines within the Elverta Specific Plan (Section 8).

Replacing an expanse of primarily undeveloped land and scattered rural residences with mixed uses would significantly alter the visual character of the project site, particularly views of the project site from Elverta Road, 16th Street, U Street, Palladay Road, and the northern end of Dry Creek

Road. Motorists on these roadways as well as nearby residents would perceive this conversion from open space to urban development as a substantial alteration of the visual character and quality of the project site. Rural areas and open space can be considered a valuable aesthetic resource that is representative of the visual character of much of rural Sacramento County. Reasonable people may differ as to the aesthetic value of the agricultural lands in the area of analysis, and whether development of urban uses in the area of analysis would constitute a substantial degradation of the existing visual character or quality of the site and its surroundings. However, given the large scale of this urban development and the rural nature of its setting, the impacts on visual resources are considered to be significant and adverse.

While development must undergo design review, and includes open space areas, this would not fully mitigate the impact of the changed landscape. Because of the scale and location of the project site, no feasible mitigation is available to address aesthetic impacts associated with the conversion of a large expanse of rural land to urban development. Therefore, this impact would remain significant and adverse.

Mitigation: None. Alternatives A, B and C have significant and adverse impacts with no feasible mitigation.

Impact 2.3: Alteration of a Scenic Vista

As discussed in **Section 3.2**, there are no designated scenic vistas or designated scenic highways near the project site. The project site does not provide aesthetic resources which would be considered remarkable or unique for the region. The views of the project site, including rural residential development, agricultural activities, and open space, are not unique to the region. Thus impacts to scenic vistas would be less than significant.

Impact 2.4: New Light and Glare Effects

Light associated with urban development can result in spillover lighting and glare. Current sources of light and glare on the project site include interior and exterior lighting in the scattered rural residences on the project site. Additionally, motorists on area roadways and adjacent residential land uses also create sources of light and glare in the area. The parks, drainage/riparian corridor, open space areas would not likely create substantial new sources of light and glare in the project area, perhaps just safety lighting in the parks area. The residential, commercial, office, and school uses would likely create new sources of light and glare in the project area. These uses would require lighting of buildings, roadways, parking lots, and other facilities. In addition, nighttime lighting in the residential areas, or the presence of reflective surfaces on residences in this area (e.g., reflective window glazing), may result in light and glare. However, it is likely that required setbacks and landscaping along these roadways would provide an effective buffer. As discussed under Impact 2.2 Alternatives A, B and C would result in the conversion of approximately 563.6 acres, respectively, in participating parcels which currently have minimal sources of light and

glare. Nighttime lighting could obscure views of the night sky or cause nuisance impacts from spilling onto adjacent properties. These impacts are considered significant and adverse.

Mitigation Measure

Measure 2.4: Limit Fugitive Light and Implement a Lighting Plan. A lighting plan would be implemented and include the following measures to the maximum extent feasible:

- Exterior light fixtures would have minimized height and maximum spacing for safety, to reduce potential for backscatter into the nighttime sky and incidental spillover of light into adjacent private properties and open space.
- Exterior lighting would be low-intensity and only used where necessary for safety and security purposes.
- Wherever possible, automatic shutoffs or motion sensors would be used for lighting features to further reduce excess nighttime light.
- All nighttime lighting would be downcast and shielded to prevent the light from illuminating anything other than the surface intended to be illuminated.
- Flood or area lighting needed for nighttime sporting activities would be located to avoid disturbing adjacent residential areas and passing motorists.
- Light fixture mountings would have non-glare finishes.

The lighting plan would be submitted to Sacramento County Municipal Services Agency for review prior to installation of any lighting or the approval of building permits.

Significance after Mitigation: Less than significant.

4.2.2 Alternative D – No Permit Alternative

Impact 2.1: Temporary Degradation of Visual Character during Construction

The impact from the construction of elements of Alternative D on the visual character of the area would be the same as the other alternatives, however, Alternative D would be reduced in intensity as less land would be developed, and residential development would occur at lower average densities. However, construction would still result in visible construction and staging areas. The change would be substantial for existing residents who currently have views typical of rural residential, agricultural and open space areas. Thus, construction activities would have a temporary significant and adverse impact on visual character.

As discussed for Alternatives A, B and C, there is no feasible mitigation which would prevent views of construction over large areas from existing residents within and surrounding the project site. Thus, this impact would temporarily remain significant and adverse during construction activities.

Impact 2.2: Degradation of Visual Character

The development of Alternative D would include single-family residential uses on approximately 547.3 acres which would primarily replace open space, with some replacement of rural residential and agricultural areas. Development of the project site would be required to undergo design review and comply with Community Design Guidelines by the Sacramento County (Zoning Code Title I, Chapter 10, Article 11) as well as development guidelines within the Elverta Specific Plan (Section 8). Development of Alternative D would include residential development at low densities, similar to the rural residential in the project site vicinity. These residences would be somewhat scattered to avoid sensitive biological resources including vernal pools. In addition Alternative D would have large expanses of open space in the northern portion of the project site. While Alternative D includes less development than the other alternatives, it would still result in a substantial visual change, from primarily undeveloped to low-density residential development on several hundred acres. Given the scale of development and the existing nature of the site, impacts on visual resources are considered to be significant and adverse.

While development must undergo design review, and includes open space areas, this would not fully mitigate the impact of the changed landscape. Because of the scale and location of the project site, no feasible mitigation is available to address aesthetic impacts associated with the conversion of a large expanse of rural land to urban development. Therefore, this impact would remain significant and adverse.

Impact 2.3: Alteration of a Scenic Vista

As discussed for Alternatives A, B and C, the project site does not provide aesthetic resources which would be considered remarkable or unique for the region. Impacts to scenic vistas would be less than significant.

Impact 2.4: New Light and Glare Effects

The project site currently has minimal sources of light and glare. While Alternative D proposes substantially less development than other alternatives, it includes development of single-family residential uses on 547.3 acres which would create new sources of light and glare. Single family residential nighttime lighting is generally minimal and dispersed compared to commercial or high-density residential uses. This impact would be less than significant.

4.3 Air Quality and Global Climate Change

4.3.1 Impact Criteria

Criteria Pollutants

According to 40 CFR 93.153, conformity determinations are required only of federal actions that occur in nonattainment areas and result in generation of emissions that exceed established de minimis levels. The federal de minimis thresholds for Sacramento County (County) are as follows:

- 25 tons per year of reactive organic gases (ROG) or nitrogen oxides (NOx);
- 100 tons per year of particulate matter of less than 10 microns in size (PM10); and
- 100 tons per year of carbon monoxide (CO)

Construction emissions were compared to the federal de minimis thresholds, though as discussed in **Section 3.4**, general conformity with respect to the federal action will be determined in the Record of Decision.

The U.S. Environmental Protection Agency (EPA) also recommends comparing generated emissions to the more stringent Sacramento Metropolitan Air Quality Management District (SMAQMD) thresholds of significance (EPA, 2010). For evaluating both short-term emission increases during construction and long-term emission increases during the operation, SMAQMD recommends that lead agencies use criteria of 85 pounds per day for NOx generated by construction activities and 65 pounds per day for ROG or NOx generated by operations to identify significant increases in emissions. For other criteria pollutants, including CO and PM10, a development alternative that may cause an exceedance of the respective state standards or may make a substantial[1] contribution to a current exceedance of a state standard would have a significant adverse air quality impact.

The proposed alternatives would not introduce any new sources of lead emissions; consequently, lead emissions are not required to be quantified and are not further evaluated in this analysis.

Toxic Air Contaminants

The operation of any development with the potential to expose sensitive receptors to substantial levels of Toxic Air Contaminants (TACs, such as diesel particulate matter [DPM]) would be deemed to have a significant impact. More specifically, proposed alternatives that have the potential to expose the public to TACs in excess of the following thresholds would be considered to have a significant air quality impact:

- Probability of contracting cancer for the Maximally Exposed Individual (MEI) exceeds 10 in one million people for 70 year exposure.

[1] *Substantial* is defined by SMAQMD as making measurably worse, which is 5 percent or more of a current exceedance of a state standard.

- Ground-level concentrations of non-carcinogenic TACs would exceed a Hazard Index greater than 1 for the MEI.

For this analysis, impacts associated with TACs are analyzed based on buffer zones between sensitive receptors and existing and proposed land uses that emit TACs in accordance with the recommendations provided in the *Air Quality and Land Use Handbook: A Community Health Perspective* (ARB, 2005).

Odors

Since there are no federal thresholds associated with odors, odor impacts are addressed in a qualitative manner based on screening distances and odor complaints, as recommend in SMAQMD guidance. This includes a discussion of whether the proposed alternatives would result in excessive nuisance odors, or if proposed sensitive land uses would be exposed to substantial odors.

Greenhouse Gas Emissions

At this time, there are no adopted quantitative federal or state guidelines for Greenhouse Gas (GHG) emission impacts. However, in accordance with the 2009 SMAQMD *Guide to Air Quality Assessment* (SMAQMD, 2009), an alternative would be considered to have a significant impact if the alternative would be in conflict with the AB 32 State goals for reducing GHG emissions.

4.3.2 Methodology and Assumptions

Air quality impacts fall into two categories, short-term impacts during construction and long-term impacts during operation. Construction activities would affect local particulate concentrations primarily due to fugitive dust emissions. Construction would also result in increased ozone precursors (ROG and NOx) and carbon dioxide (CO_2) emissions from construction equipment. Accordingly, annual construction emissions of NOx, ROG, PM10, PM2.5, CO, and CO_2 for the each alternative were estimated using the Urban Emissions model (URBEMIS, 2007), version 9.2.4 (Rimpo and Associates, 2008), and using the methods contained in SMAQMD's *Guide to Air Quality Assessment.* URBEMIS 2007 is an approved emissions inventory software program that allows the user to estimate criteria pollutant emissions from land use development projects. In regards to operations, development-related motor vehicle trips and area sources (such as natural gas combustion, hearth fuel combustion, landscaping equipment, consumer products, and architectural coatings) would increase emissions of criteria pollutants and GHGs.

GHG emissions associated with each alternative were calculated using the URBEMIS 2007 Version 9.2.4 model and trip generation data from the traffic analysis. Because the only GHG that URBEMIS 2007 estimates is CO_2, scaling factors derived from the State of California Inventory of GHG Emissions were used to determine the relative emissions of methane (CH_4) and nitrous oxide (N_20) to generate emissions of GHG as CO_2 equivalents (CO_2e). In addition to on-road traffic-related emissions, the URBEMIS 2007 model also estimates CO_2 emissions from natural gas combustion for space and water heating and fuel combustion for landscape maintenance based on land use size (e.g., number of dwelling units, square footage of retail space, etc.). Again, the appropriate

scaling factors from the State GHG Inventory were used to determine the relative amounts of NH_4 and N_2O emitted from development-related fuel combustion. Finally, indirect emissions of GHGs from electricity generation (associated with electricity usage and water/wastewater conveyance) were based on methodologies described in the SMAQMD *Guide to Air Quality Assessment*.

Additional information and model results for each of the analyses described above are presented in **Appendix C**.

4.3.3 Regional Impacts

While most of the environmental consequences analyses in **Chapter 4** of this EIS focus on the impacts of developing the initial phase (participating parcels) of the Plan, the analyses of Transportation and Traffic (**Section 4.14**), Air Quality and Global Climate Change (**Section 4.3**), and Noise (**Section 4.12**) are considered more regional and not driven by the specific footprints of the participating parcels. This is because the 404 permit application package for the participating parcels in the Plan area includes an application for the development of the roadway infrastructure that would serve not only the participating parcels, but the entire Plan area. Because the proposed roadway infrastructure would allow for the full buildout of the Plan area, the impact analysis for these more regional resource areas (Air, Noise, and Traffic) evaluate the potential impacts of the full buildout of the Plan area in their specific impact discussions. Thus, Air Quality and Global Climate Change (Section 4.3) evaluates the potential impacts of the full buildout of the Plan area.

4.3.4 Alternative A

Impact 3.1: Effects from Construction Emissions with Respect to Federal General Conformity

Construction emissions are considered short term and temporary in duration, but have the potential to represent a significant impact with respect to air quality. Construction related emissions arise from a variety of activities, including: (1) grading, excavation, road building, and other earth moving activities; (2) travel by construction equipment and employee vehicles, especially on unpaved surfaces; (3) exhaust from construction equipment; (4) architectural coatings; and (5) asphalt paving.

Emissions of ozone precursors, ROG and NOx, are generated primarily by mobile sources and vary as a function of vehicle trips per day and the types and number of heavy-duty, off-road equipment used and the intensity and frequency of their operation. A large portion of construction-related ROG emissions also results from the application of asphalt.

Construction-related fugitive dust emissions would vary from day to day, depending on the level and type of activity, silt content of the soil, and the weather. In the absence of mitigation, construction activities could result in significant quantities of dust, and as a result, local visibility and PM10 concentrations may be adversely affected on a temporary and intermittent basis during construction. In addition, the fugitive dust generated by construction would include not only PM10, but also larger

particles, which would fall out of the atmosphere within several hundred feet of the site and could result in nuisance-type impacts, rather than adverse health effects.

Preliminary construction phasing information is included in **Chapter 2.0**. It is assumed for this analysis that large portions of development would undergo construction at one time, and this construction would require substantial amounts of earthwork and grading. Construction of the site is anticipated to commence in 2013 with buildout in the year 2032. Because of the size of the proposed development and the extended period until full build out, it is likely that construction could occur simultaneously at various locations on the project site over time. In other words, site grading, asphalt paving, building construction, and the application of architectural coatings could take place at different areas of the project site at the same time. Daily and annual construction emissions were estimated for the year with the greatest amount of development (i.e., year 2022) in order to generate conservative estimates.

Predicted unmitigated and construction emissions for this year are presented in **Table 4.3-1** and compared to the federal de minimis thresholds. As depicted in **Table 4.3-1**, construction activities would not generate significant emissions of criteria pollutants when compared to federal de minimis thresholds. Therefore, this impact would be less than significant.

TABLE 4.3-1
FEDERAL ANNUAL CONSTRUCTION EMISSIONS ESTIMATES - ALTERNATIVES A, B, AND C

	Construction Emissions[1]				
Pollutant	**ROG**	**NOx**	**PM10**	**PM2.5**	**CO**
Unmitigated Maximum – tons/year	14	3	26	6	5
Federal De Minimis Thresholds (tons/year)	25	25	100	NA[2]	100
Exceeds Threshold (Yes or No)?	No	No	No	No	No

1 Construction emissions estimates were made using URBEMIS 2007. Values in **bold** are in excess of the applicable threshold. See Appendix C for details.
2 NA = Not Available. There is no established Federal de minimis threshold for PM2.5.

Impact 3.2: Effects from Construction Emissions with Respect to SMAQMD Criteria

Construction activity emission assumptions and considerations are discussed in detail within **Impact 3.1**. Maximum daily construction emissions of NOx, ROG, PM10, PM2.5, and CO for Alternative A were estimated using URBEMIS 2007 and using the methods contained in SMAQMD's *Guide to Air Quality Assessment.* Predicted unmitigated and mitigated construction emissions for the worst-case day are presented in **Table 4.3-2** and compared to the SMAQMD thresholds. As depicted in **Table 4.3-2**, construction activities are expected to generate less than significant emissions of NOx when compared to SMAQMD thresholds.

According to the SMAQMD's *Guide to Air Quality Assessment*, due to the non-attainment status of the air basin with respect to ozone, PM10, and PM2.5, the SMAQMD recommends that projects implement a set of Basic Construction Emission Control Practices as best

management practices regardless of the significance determination. Without implementation of the SMAQMD recommended Basic Construction Emission Control Practices this would be a significant and adverse impact. This impact would be reduced to a less-than-significant level with implementation of the following mitigation.

TABLE 4.3-2
DAILY CONSTRUCTION EMISSIONS ESTIMATES (ALTERNATIVES A, B, AND C)

	Construction Emissions[1]				
Pollutant	**ROG**	**NOx**	**PM10**	**PM2.5**	**CO**
Unmitigated Maximum - lbs/day	257	47	630	133	52
Mitigated Maximum - lbs/day[2]	257	47	302	65	52
SMAQMD Thresholds (lbs/day)	NA[3]	85	NA[3]	NA[3]	NA[3]
Exceeds Threshold (Yes or No)?	No[4]	No	No	No	No

1 Construction emissions estimates were made using URBEMIS 2007. Values in **bold** are in excess of the applicable SMAQMD threshold. See Appendix C for details.
2 Emission reductions incorporated into URBEMIS modeling are described below in Mitigation Measures 3.2a and 3.2b. Since construction would disturb 15 acres or less on a given day (SMAQMD's screening criteria for determining the need for detailed dispersion modeling), mitigated particulate emission concentrations would not be considered significant.
3 NA = Not Available. The SMAQMD has not established mass thresholds during the construction phase for ROG, CO, PM10, or PM2.5.
4 Architectural coatings and asphalt paving are the primary sources of ROG during construction. Development must comply with SMAQMD Rules and Regulations, including Rule 442 (Architectural Coatings) and Rule 453 (Cutback and Emulsified Asphalt Paving Materials).

Mitigation Measures

Mitigation Measure 3.2a: Limit Daily Grading Activities. The project proponent would require the construction contractors to limit the maximum daily disturbed area to 15 acres or less. If daily grading is projected to be greater than 15 acres, the project proponent would conduct dispersion modeling of PM10 emissions generated during construction to determine if estimated levels would exceed the California Ambient Air Quality Standard (CAAQS) at the nearest receptor. If significant PM10 concentrations are identified, a PM10 Reduction Plan would be prepared for approval by the SMAQMD that describes how concentrations would be limited to less-than-significant levels.

Mitigation Measure 3.2b: Use Basic Construction Emission Control Practices. The project proponent would require the construction contractors to implement the SMAQMD Basic Construction Emission Control Practices, including:

- Water all exposed surfaces two times daily. Exposed surfaces include, but are not limited to soil piles, graded areas, unpaved parking areas, staging areas, and access roads.
- Cover or maintain at least two feet of free board space on haul trucks transporting soil, sand, or other loose material on the site. Any haul trucks that would be traveling along freeways or major roadways should be covered.
- Use wet power vacuum street sweepers to remove any visible trackout mud or dirt onto adjacent public roads at least once a day. Use of dry power sweeping is prohibited.
- Limit vehicle speeds on unpaved roads to 15 miles per hour.

- All roadways, driveways, sidewalks, parking lots to be paved should be completed as soon as possible. In addition, building pads should be laid as soon as possible after grading unless seeding or soil binders are used.
- Minimize idling time either by shutting equipment off when not in use or reducing the time of idling to 5 minutes (as required by the state airborne toxics control measure [Title 13, Section 2485 of the California Code of Regulations]). Provide clear signage that posts this requirement for workers at the entrances to the site.
- Maintain all construction equipment in proper working condition according to manufacturer's specifications. The equipment must be checked by a certified mechanic and determine to be running in proper condition before it is operated.

Significance After Mitigation: Less than significant.

Impact 3.3: Effects from Operational Emissions with Respect to SMAQMD Criteria

Over the long-term, Alternative A would result in an increase in emissions primarily due to motor vehicle trips and onsite stationary sources and area sources (e.g., natural gas emissions from space heating). Operational emissions for Alternative A buildout (year 2032) have been determined using URBEMIS 2007 and are presented in **Table 4.3-3** below. Based on the estimates shown in **Table 4.3-3**, Alternative A's criteria pollutant contribution to regional air quality would be above each of the SMAQMD thresholds. Therefore, the operational impacts of Alternative A would be considered significant and adverse.

Development and implementation of mitigation would ensure that operational emissions would be reduced by at least 15 percent; however, because of the large size of the development, emissions would still be expected to exceed the applicable thresholds. There are no other feasible mitigation measures that would further reduce this alternative's air quality impacts.

TABLE 4.3-3
DAILY OPERATIONAL EMISSIONS ESTIMATES - ALTERNATIVE A

	Operational Emissions[1]				
Pollutant	**ROG**	**NOx**	**PM10**	**PM2.5**	**CO**
Area Sources - lbs/day	**414**	**99**	834	803	5,152
On-road Vehicle Sources - lbs/day	**245**	**139**	902	171	1,893
Total Operational Emissions – lbs/day	**659**	**238**	1,736	974	7,045
SMAQMD Thresholds (lbs/day)	65	65	NA[2]	NA[2]	NA[2,3]
Exceeds Thresholds (Yes or No)?	Yes	Yes	No	No	No

1. Area source and operational emissions estimates were made using URBEMIS 2007. ROG and NOx daily estimates are for summertime conditions, whereas CO and particulates are for wintertime conditions. Values in **bold** are in excess of the applicable SMAQMD threshold. See Appendix C for details.
2. NA = Not Available. The SMAQMD has not established mass thresholds for CO, PM10, or PM2.5.
3. CO is discussed further below.

Mitigation Measures

Mitigation Measure 3.3: Develop and Implement an Air Quality Mitigation Plan (AQMP). The project proponent would develop an AQMP in coordination with and

approved by SMAQMD for each area. Each AQMP would include measures to reduce operational emissions by at least 15 percent.

Significance After Mitigation: Significant and adverse.

Impact 3.4: Effects from Operational Emissions with Respect to Carbon Monoxide

The primary mobile-source pollutant of localized concern is CO. Local mobile-source CO emissions near roadway intersections are a direct function of traffic volume, speed, and delay. Transport of CO concentrations is extremely limited because it disperses rapidly with distance from the source under normal meteorological conditions. However, under certain specific meteorological conditions, CO concentrations near roadways and/or intersections may reach unhealthy levels with respect to local sensitive land uses, such as residential units, hospitals, schools, and childcare facilities. Thus, high local CO concentrations are considered to have a direct influence on the receptors they affect. SMAQMD recently released new screening criteria that provide a conservative indication of whether vehicle trips generated by Alternative A would result in the generation of CO emissions that exceed or contribute to an exceedance of the CAAQS for CO (SMAQMD, 2009). SMAQMD's recommended screening criteria are divided into the following two tiers.

First Tier

Alternative A would result in a less-than-significant impact to air quality for local CO if:

- Traffic generated by Alternative A would not result in deterioration of intersection level of service (LOS) to LOS E or F; or
- Alternative A would not contribute additional traffic to an intersection that already operates at LOS of E or F.

Second Tier

If all of the following criteria are met, Alternative A would result in a less-than-significant impact to air quality for local CO.

- Alternative A would not result in an affected intersection experiencing more than 31,600 vehicles per hour;
- Alternative A would not contribute traffic to a tunnel, parking garage, bridge underpass, urban street canyon, or below-grade roadway; or other locations where horizontal or vertical mixing of air would be substantially limited; and
- The mix of vehicle types at the intersection is not anticipated to be substantially different from the County average (as identified by the EMFAC or URBEMIS models).

Based on the traffic analysis described in **Section 4.14** (Transportation and Traffic), some signalized intersections in the vicinity of the project site are predicted to operate at an unacceptable LOS under build out conditions of Alternative A. However, because none of the intersections would be anticipated to accommodate volumes of traffic that would exceed 31,600 vehicles per hour, all affected roadways would be at-grade, and the mix of vehicles traveling on these roadways is not anticipated to be

substantially different from the County average, Alternative A would not result in concentrations of CO that would exceed or contribute to an exceedance of the CAAQS. Furthermore, due to stricter vehicle emissions standards in newer cars, new technology, and increased fuel economy, future CO emission factors under build out conditions (year 2032) are expected to be substantially lower than those under existing conditions. Thus, even though there would be more vehicle trips under Alternative A at build out than under existing conditions, local mobile-source CO emissions generated by Alternative A are not expected to result in or substantially contribute to concentrations that exceed the 1-hour ambient air quality standard of 20 ppm or the 8-hour standard of 9 ppm. Local CO concentrations associated with Alternative A traffic would be less than significant.

Impact 3.5: Effects from Construction and Operational Emissions with Respect to Toxic Air Contaminants

Construction

TAC emissions from construction activities under Alternative A would be related to DPM emissions from heavy equipment operations during grading, excavation, and transportation activities. Health effects from carcinogenic air toxics are usually described in terms of individual cancer risk. Existing and new residents would be occupying the site concurrently with on-site construction activities. Short-term construction activities could therefore expose sensitive receptors to levels that exceed applicable standards because of the close proximity between on-site diesel equipment and residences. This impact would be significant and adverse.

Operations

On-Site Operational Stationary Source Emissions. Any stationary sources associated with commercial development that may emit TACs would be subject to SMAQMD permitting and Toxics Best Available Control Technology (T-BACT) requirements. SMAQMD would assess such sources for potential health risk impacts based on their potential to emit TACs. If it is determined that the sources would emit TACs in excess of SMAQMD's applicable threshold, T-BACT would be implemented to reduce emissions. If the implementation of T-BACT would not reduce the risk below the threshold, then SMAQMD would deny the required permit. As a result, impacts associated with exposure of sensitive receptors to substantial toxic air emissions from stationary source operations would be less than significant.

On-Site Operational Mobile Source Emissions. On-site mobile sources of TAC emissions would primarily be associated with the operation of school buses transporting students to and from the proposed elementary school and diesel-fueled delivery trucks associated with proposed on-site commercial activities.

Emissions from school buses can vary depending on various factors, including bus type, age, and maintenance, and the amount of time spent idling. Generally, children are more vulnerable than adults to air pollutants. In response to this concern, California Air Resources Board (ARB) adopted an Airborne Toxic Control Measure (ATCM) as part of the *Particulate Matter Risk*

Reduction Plan (ARB, 2000) specifically to deal with diesel emissions from school buses. This measure became effective July 16, 2003. According to ARB, implementation of the ATCM would eliminate unnecessary idling for school buses and other heavy-duty vehicles, thus reducing localized exposure to emissions of TACs and other harmful pollutants at and near schools and protecting children from unhealthy exhaust emissions.

In addition to the school bus–idling ATCM, ARB has adopted an idling-restriction ATCM for large commercial diesel-powered vehicles. In accordance with this measure, which became effective February 1, 2005, affected vehicles are required to limit idling to no longer than 5 minutes under most circumstances. Nonetheless, given that proposed onsite commercial land uses have not yet been identified and given the potential proximity of nearby sensitive receptors, exposure of nearby on-site receptors to mobile-source TACs associated with commercial activities is a significant and adverse impact.

Land Use Compatibility. Alternative A would include residences and school facilities. Because of the sensitivity of such uses, an assessment of compatibility with surrounding land uses with respect to TAC emissions is appropriate. The *Air Quality and Land Use Handbook: A Community Health Perspective* (ARB 2005), which is advisory rather than regulatory, includes the following recommendations that may apply to Alternative A and other alternatives:

- Avoid siting new sensitive land uses within 500 feet of a freeway, urban roads carrying 100,000 vehicles per day, or rural roads carrying 50,000 vehicles per day.
- Avoid siting new sensitive land uses within 300 feet of a large gasoline station (defined as a facility with a throughput of 3.6 million gallons per year or greater). A 50-foot separation is recommended for typical gasoline-dispensing facilities.
- Avoid siting new sensitive land uses within 300 feet of any dry-cleaning operation using perchloroethylene. For operations with two or more machines, provide 500 feet. For operations with three or more machines, consult the local air district. Do not site new sensitive land uses in the same building with dry-cleaning operations that use perchloroethylene.
- Obtain facility-specific information where there are questions about siting a sensitive land use close to an industrial facility, including the amount of pollutant emitted and its toxicity, distance to nearby receptors, and types of emissions controls in place.

The siting of on-site proposed sensitive receptors under Alternative A would be consistent with the ARB recommendations listed above, and thus would not result in the exposure of sensitive receptors to TACs that exceed recommendations. As a result, impacts associated with exposure of sensitive receptors to substantial toxic air emissions associated with land compatibility issues would be less than significant.

Mitigation Measures

Measure 3.5: Reduce Potential TAC Exposure to Sensitive Receptors. The project proponent shall incorporate the following measures to reduce or avoid exposure of sensitive receptors to TACs during construction and operation.

For construction activities, measures shall include, but are not limited to, the following:

- Minimize idling time either by shutting equipment off when not in use or reducing the time of idling to 5 minutes (as required by the state airborne toxics control measure [Title 13, Section 2485 of the California Code of Regulations]). Provide clear signage that posts this requirement for workers at the entrances to the site.
- Use new diesel engines that are designed to minimize DPM emissions (usually through the use of catalyzed particulate filters in the exhaust), or retrofitting older engines with catalyzed particulate filters which would reduce up to 85% of DPM emissions.

For operations, plans shall include, but are not limited to, the following:

- Proposed commercial land uses that have the potential to emit TACs (such as loading docks for diesel delivery trucks) would be located as far away as possible from existing and proposed sensitive receptors.
- When determining the specific type of facility that would occupy the proposed commercial land use space, the project proponent shall take into consideration the facility's potential to produce TACs.
- New sensitive land uses will not be permitted within 300 feet of a large gasoline station (defined as a facility with a throughput of 3.6 million gallons per year or greater). Require a 50 foot separation between gasoline stations with a throughput less than 3.6 million gallons per year.
- Dry-cleaning operation using perchloroethylene with two or more machines will not be permitted within 500 feet of a sensitive land uses. For operations with one machine the separation shall be a minimum of 300 feet. For operations with three or more machines, consult the local air district. New sensitive land uses will not be sited in the same building with dry-cleaning operations that use perchloroethylene.

Significance After Mitigation: Less than significant.

Impact 3.6: Objectionable Odors

Regarding land use compatibility of locating new sensitive receptors, there are no substantial existing sources of odor identified in the vicinity of Alternative A that would substantially affect new land uses in the Plan area. In regards to operations, no common sources of substantial nuisance odors, such as wastewater treatment facilities, waste-disposal facilities, or agricultural operations, are proposed as part of the Alternative A. Commercial development could include uses that may have odorous emissions (e.g., food service) that could be offensive to some individuals. If offensive odors are located near sensitive receptors, the impact would be significant and adverse.

Mitigation Measure

Measure 3.6: Reduce Odors. The project proponent would implement the following odor control measures during construction or operation:

- Consider the odor-producing potential of land uses when the exact type of facility that would occupy areas zoned for commercial, industrial, or mixed-use land uses is

determined. Facilities that have the potential to emit objectionable odors would be located with appropriate buffers from existing and proposed sensitive receptors.

- Identify odor control devices within building permit applications to mitigate the exposure of receptors to objectionable odors if a potential odor-producing source is to occupy the project area. The identified odor control devices would be installed before the issuance of certificates of occupancy for the potentially odor-producing use.

Significance After Mitigation: Less than significant.

Impact 3.7: Greenhouse Gas Emissions and Global Climate Change

Impacts associated with GHG emissions are considered to be exclusively cumulative impacts; there are no non-cumulative GHG emission impacts from a climate change perspective (CAPCOA, 2008). The emission estimates presented below include annual CO_2e GHG emissions from off-road equipment, trucks, and workers during construction and operations, as well as electricity generation (associated with electricity usage and water/wastewater conveyance), area sources, and on-road vehicles associated with facility operations. Appendix C contains information regarding assumptions and emissions calculations used in this analysis.

Four types of analyses are used to determine whether a development could conflict with the state goals for reducing GHG emissions. The analyses are as follows:

A. Any potential conflicts with the ARB's 39 recommended actions in California's AB 32 Climate Change Scoping Plan.

B. The relative size of the development. Alternative A's GHG emissions would be compared to the size of major facilities that are required to report GHG emissions (25,000 metric tons/year of CO_2e) to the state. In reaching its goals the ARB would focus upon the largest emitters of GHG emissions.

C. The basic energy efficiency parameters of a development to determine whether its design is inherently energy efficient.

D. Any potential conflicts with applicable Sacramento County plans, policies, or regulations adopted for the purpose of reducing the emissions of GHGs.

With regard to Criterion A described above, Alternative A does not pose any apparent conflict with the most recent list of the ARB recommended actions (**see Table 3.3-4**).

Regarding Criterion B, GHG emissions during construction for a worst-case year would be approximately 1,302 metric tons CO_2e (based on the 1,435 short ton estimate included in **Appendix C**). This estimate is conservative and was developed without the benefit of specific construction schedules which are not available at this time. As shown in **Table 4.3-4**, the increase in GHG emissions from operations of Alternative A would be approximately 138,145 metric tons/year CO_2e. This is well above the 25,000 metric tons/year CO_2e threshold used by the state to classify major emitters. Since Alternative A would generate GHG emissions that would substantially exceed the major source threshold, it would generate sufficient emissions of GHGs to contribute considerably to the cumulative effects of GHG emissions such that it would impair the state's ability to implement AB 32.

TABLE 4.3-4
OPERATIONAL GREENHOUSE GAS EMISSIONS – ALTERNATIVE A

GHG Sources	Greenhouse Gas Emissions (metric tons/year)[1] CO_2e
On-road Vehicles	93,857
Area Sources	26,949
Indirect Emissions from Electricity Generation	17,339
Total Unmitigated Emissions (metric tons/year)	138,145

1. Emissions were modeled using several models and emission factors, which are described in more detail in Appendix C. These models and emission factors include URBEMIS2007 for on-road vehicle exhaust and area sources. Indirect emissions from electricity generation were estimated based on emission factors in the Local Government Operations Protocol (ARB et al., 2008)

SOURCES: ARB et al., 2008.

With respect to GHG analysis Criterion C, Alternative A is a planned community project in the Sacramento region. The GHG emissions estimated above includes the assumption that the Energy Efficiency Model (described in **Section 2.0**) would be incorporated into development, which would result in a 25% reduction in total energy use beyond that required by the latest version of Title 24 at the time of construction. This would allow for the 25% residential density bonus, which was also included in the emissions model. Also, Alternative A would include land use patterns and transportation systems designed to encourage efficient energy use through non-motorized transportation (pedestrian and bicycle) or public transit use (by locating those needs and services in close proximity to existing routes and likely users).

Finally, with regard to Criterion D, Sacramento County has developed the *Climate Action Plan Strategy and Framework Document* (Sacramento County, 2011) that summarizes actions that the County has already taken and identifies possible future actions to be considered, in order to provide a framework for reducing GHG emissions. The County is committed to working with regional partners to comply with AB 32 in reducing GHG emissions by 15% from the 2005 baseline ("current levels") by the year 2020, as well as reducing GHG emissions by 80 percent below 1990 levels by 2050 (consistent with Executive Order S-3-05). Due to the substantial GHG emissions expected to be generated by operations, Alternative A could conflict with the reduction goals included in the County *Climate Action Plan Strategy and Framework Document*. Therefore, this alternative would conflict with local regulations pertaining to GHGs.

Based upon the analysis of Criteria A, B, C and D presented above, this alternative would result in a cumulatively considerable increase in GHG emissions such that Alternative A would impair the state's ability to implement AB 32. This impact would be significant and adverse. Even with mitigation, the emissions related to Alternative A would remain cumulatively significant because of the large size of the development and related substantial GHG emissions.

Mitigation Measures

Implement Mitigation Measure 3.3: Develop and Implement an AQMP.

Measure 3.7a: Construction GHG Control Measures. The project proponent would incorporate the following construction GHG emissions reductions, where feasible:

- Improve fuel efficiency from construction equipment:
    - Minimize idling time either by shutting equipment off when not in use or reducing the time of idling to no more than 3 minutes (5 minute limit is required by the state airborne toxics control measure). Provide clear signage that posts this requirement for workers at the entrances to the site.
    - Maintain all construction equipment in proper working condition according to manufacturer's specifications. The equipment must be checked by a certified mechanic and determined to be running in proper condition before it is operated.
    - Train equipment operators in proper use of equipment.
    - Use the proper size of equipment for the job.
    - Use equipment with new technologies (repowered engines, electric drive trains).
- Perform on-site material hauling with trucks equipped with on-road engines (if determined to be less emissive than the off-road engines).
- Use alternative fuels for generators at construction sites such as propane or solar, or use electrical power.
- Use an ARB approved low carbon fuel for construction equipment. (NOx emissions from the use of low carbon fuel must be reviewed and increases mitigated.)
- Encourage and provide carpools, shuttle vans, transit passes and/or secure bicycle parking for construction worker commutes.
- Reduce electricity use in the construction office by using compact fluorescent bulbs, powering off computers every day, and replacing heating and cooling units with more efficient ones.
- Recycle or salvage non-hazardous construction and demolition debris (goal of at least 75% by weight).
- Use locally sourced or recycled materials for construction materials (goal of at least 20% based on costs for building materials, and based on volume for roadway, parking lot, sidewalk and curb materials). Wood products utilized should be certified through a sustainable forestry program.
- Minimize the amount of concrete for paved surfaces or utilize a low carbon concrete option.
- Produce concrete on-site if determined to be less emissive than transporting ready mix.
- Use SmartWay certified trucks for deliveries and equipment transport.
- Develop a plan to efficiently use water for adequate dust control.

Measure 3.7b: GHG Emission Control Measures. The project proponent would develop a GHG Reduction Plan to be approved by the County, in consultation with SMAQMD. The project proponent would incorporate Green Building and Development Measures as listed in **Appendix J**. Each increment of new development within the project site requiring a

discretionary approval from the County (e.g., proposed tentative subdivision map, conditional use permit), would demonstrate that GHG emissions from construction and operation would be reduced by 30 percent from business-as-usual 2006 emissions levels, or an appropriate alternate threshold as determined in consultation with the County and SMAQMD.

Significance After Mitigation: Significant and adverse.

Impact 3.8: Climate Change Impacts on Project Site

The Intergovernmental Panel on Climate Change (IPCC) reports that mean sea level could rise by approximately 12 to 36 inches by the year 2100 (IPCC, 2007). However, the Alternative A site is located a substantial distance from the ocean, and as a result, it is unlikely that erosion or an increase in flooding as a result of climate-induced sea level rise would affect the area.

Climate change could result in increased intensity and/or frequency of major storm events, including those events that could result in flooding. As discussed in **Section 4.10**, Hydrology and Water Quality, only a small portion (approximately 10 acres) of Alternative A is located within a Federal Emergency Management Agency defined floodplain. As discussed in **Section 4.10**, however, Alternative A is not expected to result in a cumulatively considerable impact on hydrologic resources, including hydrology, water quality, flooding, or climate change related effects on hydrologic resources. This impact would be less than significant.

4.3.5 Alternative B – Reduced Impact Alternative

As with Alternative A, this alternative includes the development of a large-scale mixed-use development on the project site. As with Alternative A, Alternative B includes residential uses (various densities); commercial uses; parks and open space; as well as areas allocated for drainage/riparian corridors, detention, and major roads. The geographic locations of planned land uses for Alternative B are similar those of Alternative A, however, Alternative B would avoid developing some areas of the project site to reduce impacts to waters of the U.S.

The differences between Alternative A and Alternative B would be negligible from an air quality perspective for Impacts 3.1, 3.2, 3.4, 3.5 and 3.6 and the respective Mitigation Measures.

The impacts that would differ for Alternative B (Impacts 3.3, 3.7 and 3.8), in comparison to Alternative A, are discussed below.

Impact 3.3: Effects from Operational Emissions with Respect to SMAQMD Criteria

Alternative B would result in similar land uses and densities as Alternative A, except with a slightly reduced land disturbance. As with Alternative A, Alternative B would result in an increase in emissions primarily due to motor vehicle trips and onsite stationary sources and area sources (e.g.,

natural gas emissions from space heating). Operational emissions for Alternative B buildout (year 2032) have been determined using URBEMIS 2007 and are presented in **Table 4.3-5** below. Based on the estimates shown in **Table 4.3-5**, Alternative B's criteria pollutant contribution to regional air quality would be above each of the SMAQMD thresholds. Therefore, the operational impacts of Alternative B would be considered significant and adverse. Development and implementation of mitigation would ensure that operational emissions would be reduced by at least 15 percent; however, because of the large size of the development, emissions would still be expected to exceed the applicable thresholds. There are no other feasible mitigation measures that would further reduce this alternative's air quality impacts.

TABLE 4.3-5
DAILY OPERATIONAL EMISSIONS ESTIMATES - ALTERNATIVE B

	Operational Emissions[1]				
Pollutant	**ROG**	**NOx**	**PM10**	**PM2.5**	**CO**
Area Sources - lbs/day	**396**	**91**	834	803	5,147
On-road Vehicle Sources - lbs/day	**233**	**133**	867	165	1,819
Total Operational Emissions – lbs/day	**629**	**224**	1,701	968	6,966
SMAQMD Thresholds (lbs/day)	65	65	NA[2]	NA[2]	NA[2,3]
Exceeds Thresholds (Yes or No)?	Yes	Yes	No	No	No

1. Area source and operational emissions estimates were made using URBEMIS 2007. ROG and NOx daily estimates are for summertime conditions, whereas CO and particulates are for wintertime conditions. Values in **bold** are in excess of the applicable SMAQMD threshold. See Appendix C for details.
2. NA = Not Available. The SMAQMD has not established mass thresholds for CO, PM10, or PM2.5.
3. CO is discussed further below.

Mitigation Measures

Implement Mitigation Measure 3.3: Develop and Implement an AQMP.

Significance After Mitigation: Significant and adverse.

Impact 3.7: Greenhouse Gas Emissions and Global Climate Change

The GHG general impact setting and analysis criteria would be the same for Alternative B as described for Alternative A. Appendix C contains information regarding assumptions and emissions calculations used in this analysis.

With regard to Criterion A, Alternative B does not pose any apparent conflict with the most recent list of the ARB recommended actions (**see Table 3.3-4**).

Regarding Criterion B, GHG emissions during construction for a worst-case year would be approximately 1,302 metric tons CO_2e (based on the 1,435 short ton estimate included in **Appendix C**). This estimate is conservative and was developed without the benefit of specific construction schedules which are not available at this time. As shown in **Table 4.3-6**, the increase in GHG emissions from operations of Alternative B would be approximately 132,411 metric

tons/year CO_2e. This is well above the 25,000 metric tons/year CO_2e threshold used by the state to classify major emitters. Since Alternative B would generate GHG emissions that would substantially exceed the major source threshold, it would generate sufficient emissions of GHGs to contribute considerably to the cumulative effects of GHG emissions such that it would impair the state's ability to implement AB 32.

TABLE 4.3-6
OPERATIONAL GREENHOUSE GAS EMISSIONS – ALTERNATIVE B

GHG Sources	Greenhouse Gas Emissions (metric tons/year)[1] CO_2e
On-road Vehicles	90,246
Area Sources	25,233
Indirect Emissions from Electricity Generation	16,932
Total Unmitigated Emissions (metric tons/year)	132,411

1. Emissions were modeled using several models and emission factors, which are described in more detail in Appendix C. These models and emission factors include URBEMIS2007 for on-road vehicle exhaust and area sources. Indirect emissions from electricity generation were estimated based on emission factors in the Local Government Operations Protocol (ARB et al., 2008)

SOURCES: ARB et al., 2008.

With respect to GHG analysis Criterion C, the GHG emissions estimated above includes the assumption that the Energy Efficiency Model (described in **Section 2.0**) would be incorporated into development, which would result in a 25% reduction in total energy use beyond that required by the latest version of Title 24 at the time of construction. This would allow for the 25% residential density bonus, which was also included in the emissions model. Finally, Alternative B would include land use patterns and transportation systems designed to encourage efficient energy use through non-motorized transportation (pedestrian and bicycle) or public transit use (by locating those needs and services in close proximity to existing routes and likely users).

Finally, with regard to Criterion D, Sacramento County has developed *Climate Action Plan Strategy and Framework Document* (Sacramento County, 2011) that summarizes actions that the County has already taken and identifies possible future actions to be considered, in order to provide a framework for reducing GHG emissions. The County is committed to working with regional partners to comply with AB 32 in reducing GHG emissions by 15% from the 2005 baseline ("current levels") by the year 2020, as well as reducing GHG emissions by 80 percent below 1990 levels by 2050 (consistent with Executive Order S-3-05). Due to the substantial GHG emissions expected to be generated by operations, Alternative B could conflict with the reduction goals included in the County *Climate Action Plan Strategy and Framework Document*. Therefore, this alternative would conflict with local regulations pertaining to GHGs.

Based upon the analysis of Criteria A, B, C and D presented above, this alternative would result in a cumulatively considerable increase in GHG emissions such that Alternative B would impair the state's ability to implement AB 32. This impact would be significant and adverse. Even with mitigation, the emissions related to Alternative B would remain cumulatively significant because of the large size of the development and related substantial GHG emissions.

Mitigation Measures

Implement Mitigation Measures 3.3: Develop and Implement an AQMP, 3.7a: Construction GHG Control Measures, and 3.7b: GHG Emission Control Measures.

Significance After Mitigation: Significant and adverse.

Impact 3.8: Climate Change Impacts on Project Site

The IPCC reports that mean sea level could rise by approximately 12 to 36 inches by the year 2100 (IPCC, 2007). However, the Alternative B site is located a substantial distance from the ocean, and as a result, it is unlikely that erosion or an increase in flooding as a result of climate-induced sea level rise would affect the area.

Climate change could result in increased intensity and/or frequency of major storm events, including those events that could result in flooding. As discussed in **Section 4.10**, Alternative B would avoid conversion of existing 100-year floodplain areas to residential uses. As discussed in **Section 4.10**, Alternative B is not expected to result in a cumulatively considerable impact on hydrologic resources. This impact would be less than significant.

4.3.6 Alternative C – Approved Specific Plan with 25% Density Bonus

As with Alternative A, this alternative includes the development of a large-scale mixed-use development in the project site. As with Alternative A, Alternative C includes residential uses (various densities); commercial uses; parks and open space; as well as areas allocated for drainage/riparian corridors, detention, and major roads. The geographic location of planned land use types are similar to Alternatives A and B. However, the drainage/riparian corridors are substantially different than for those two alternatives. The differences between Alternative A and Alternative C would be negligible from an air quality perspective for Impacts 3.1, 3.2, 3.4, 3.5 and 3.6 and the respective Mitigation Measures.

The impacts that would differ for Alternative C (Impacts 3.3, 3.7 and 3.8), in comparison to Alternative A, are discussed below.

Impact 3.3: Effects from Operational Emissions with Respect to SMAQMD Criteria

Alternative C would result in the installation of similar land uses and densities as Alternative A, except at different locations. As with Alternative A, Alternative C would result in an increase in emissions primarily due to motor vehicle trips and onsite stationary sources and area sources (e.g., natural gas emissions from space heating). Operational emissions for Alternative C buildout (year 2032) have been determined using URBEMIS 2007 and are presented in **Table 4.3-7** below.

Based on the estimates shown in **Table 4.3-7**, Alternative C's criteria pollutant contribution to regional air quality would be above each of the SMAQMD thresholds. Therefore, the operational impacts of Alternative C would be considered significant and adverse. Development and implementation of mitigation would ensure that operational emissions would be reduced by at least 15 percent; however, because of the large size of the development, emissions would still be expected to exceed the applicable thresholds. There are no other feasible mitigation measures that would further reduce this alternative's air quality impacts.

TABLE 4.3-7
DAILY OPERATIONAL EMISSIONS ESTIMATES - ALTERNATIVE C

	Operational Emissions[1]				
Pollutant	**ROG**	**NOx**	**PM10**	**PM2.5**	**CO**
Area Sources - lbs/day	**414**	**99**	834	803	5,151
On-road Vehicle Sources - lbs/day	**247**	**140**	911	173	1,912
Total Operational Emissions – lbs/day	**661**	**239**	1,745	976	7,063
SMAQMD Thresholds (lbs/day)	65	65	NA[2]	NA[2]	NA[2,3]
Exceeds Thresholds (Yes or No)?	Yes	Yes	No	No	No

1. Area source and operational emissions estimates were made using URBEMIS 2007. ROG and NOx daily estimates are for summertime conditions, whereas CO and particulates are for wintertime conditions. Values in **bold** are in excess of the applicable SMAQMD threshold. See Appendix C for details.
2. NA = Not Available. The SMAQMD has not established mass thresholds for CO, PM10, or PM2.5.
3. CO is discussed further below.

Mitigation Measures

Implement Mitigation Measure 3.3: Develop and Implement an AQMP.

Significance After Mitigation: Significant and adverse.

Impact 3.7: Greenhouse Gas Emissions and Global Climate Change

The GHG general impact setting and analysis criteria would be the same for Alternative C as described for Alternative A. Appendix C contains information regarding assumptions and emissions calculations used in this analysis.

With regard to Criterion A, Alternative C does not pose any apparent conflict with the most recent list of the ARB recommended actions (**see Table 3.3-4**).

Regarding Criterion B, GHG emissions during construction for a worst-case year would be approximately 1,302 metric tons CO_2e (based on the 1,435 short ton estimate included in **Appendix C**). This estimate is conservative and was developed without the benefit of specific construction schedules which are not available at this time. As shown in **Table 4.3-8**, the increase in GHG emissions from operations of Alternative C would be approximately 138,959 metric tons/year CO_2e. This is well above the 25,000 metric tons/year CO_2e threshold used by the state to classify major emitters. Since Alternative C would generate GHG emissions that would substantially

exceed the major source threshold, it would generate sufficient emissions of GHGs to contribute considerably to the cumulative effects of GHG emissions such that it would impair the state's ability to implement AB 32.

TABLE 4.3-8
OPERATIONAL GREENHOUSE GAS EMISSIONS – ALTERNATIVE C

GHG Sources	Greenhouse Gas Emissions (metric tons/year)[1] CO_2e
On-road Vehicles	94,851
Area Sources	26,888
Indirect Emissions from Electricity Generation	17,220
Total Unmitigated Emissions (metric tons/year)	138,959

1. Emissions were modeled using several models and emission factors, which are described in more detail in Appendix C. These models and emission factors include URBEMIS2007 for on-road vehicle exhaust and area sources. Indirect emissions from electricity generation were estimated based on emission factors in the Local Government Operations Protocol (ARB et al., 2008)

SOURCES: ARB et al., 2008.

With respect to GHG analysis Criterion C, the GHG emissions estimated above includes the assumption that the Energy Efficiency Model (described in **Section 2.0**) would be incorporated into development, which would result in a 25% reduction in total energy use beyond that required by the latest version of Title 24 at the time of construction. This would allow for the 25% residential density bonus, which was also included in the emissions model. Finally, Alternative C would include land use patterns and transportation systems designed to encourage efficient energy use through non-motorized transportation (pedestrian and bicycle) or public transit use (by locating those needs and services in close proximity to existing routes and likely users).

Finally, with regard to Criterion D, Sacramento County has developed *Climate Action Plan Strategy and Framework Document* (Sacramento County, 2011) that summarizes actions that the County has already taken and identifies possible future actions to be considered, in order to provide a framework for reducing GHG emissions. The County is committed to working with regional partners to comply with AB 32 in reducing GHG emissions by 15% from the 2005 baseline ("current levels") by the year 2020, as well as reducing GHG emissions by 80 percent below 1990 levels by 2050 (consistent with Executive Order S-3-05). Due to the substantial GHG emissions expected to be generated by operations, Alternative C could conflict with the reduction goals included in the County *Climate Action Plan Strategy and Framework Document*. Therefore, this alternative would conflict with local regulations pertaining to GHGs.

Based upon the analysis of Criteria A, B, C and D presented above, this alternative would result in a cumulatively considerable increase in GHG emissions such that Alternative C would impair the state's ability to implement AB 32. This impact would be significant and adverse. Even with mitigation, the emissions related to Alternative C would remain cumulatively significant because of the large size of the development and related substantial GHG emissions.

Mitigation Measures

Implement Mitigation Measures 3.3: Develop and Implement an AQMP, 3.7a: Construction GHG Control Measures, and 3.7b: GHG Emission Control Measures.

Significance After Mitigation: Significant and adverse.

Impact 3.8: Climate Change Impacts on Project Site

The IPCC reports that mean sea level could rise by approximately 12 to 36 inches by the year 2100 (IPCC, 2007). However, the Alternative C site is located a substantial distance from the ocean, and as a result, it is unlikely that erosion or an increase in flooding as a result of climate-induced sea level rise would affect the area.

As discussed in **Section 4.10**, Hydrology and Water Quality, only a small portion (approximately 10 acres) of Alternative C is located within a Federal Emergency Management Agency defined floodplain. Climate change could, however, result in increased intensity and/or frequency of major storm events, including those events that could result in flooding. As discussed in **Section 4.10**, Alternative C is not expected to result in a cumulatively considerable impact on hydrologic resources. This impact would be less than significant.

4.3.7 Alternative D – No Permit Alternative

Under Alternative D, in the near term emissions (primarily associated with vehicle trips and area sources from existing land uses) from the project site would continue generally unchanged. The project site may be developed with additional residences. Impacts associated with air quality would be subject to relevant air quality mitigations from the prior CEQA review of the Specific Plan Area.

Impact 3.1: Effects from Construction Emissions with Respect to Federal General Conformity

There would be no impact under Alternative D, because federal general conformity analysis would not be required.

Impact 3.2: Effects from Construction Emissions with Respect to SMAQMD Criteria

The general construction impact setting information regarding types of pollutants and construction activities would be the same for Alternative D as described for Alternative A. It is assumed for this analysis that large portions of development would undergo construction at one time, and this construction would require substantial amounts of earthwork and grading. Construction of the site

is anticipated to commence in 2013 with buildout by the year 2018, which is scaled from the phasing schedule included in **Section 2.0**. Because of the size of the proposed development and the extended period until full build out, it is likely that construction could occur simultaneously at various locations on the project site over time. In other words, site grading, asphalt paving, building construction, and the application of architectural coatings could take place at different areas of the project site at the same time. Daily and annual construction emissions were estimated for the year with the greatest amount of development (i.e., year 2015) in order to generate conservative estimates.

Maximum daily construction emissions of NOx, ROG, PM10, PM2.5, and CO for Alternative D were estimated using URBEMIS 2007 and using the methods contained in SMAQMD's *Guide to Air Quality Assessment.* Predicted unmitigated and mitigated construction emissions for the worst-case day are presented in **Table 4.3-9** and compared to the SMAQMD thresholds. As depicted in **Table 4.3-9**, construction activities are expected to generate less-than-significant emissions of NOx when compared to SMAQMD thresholds.

TABLE 4.3-9
DAILY CONSTRUCTION EMISSIONS ESTIMATES (ALTERNATIVE D)

	Construction Emissions[1]				
Pollutant	**ROG**	**NOx**	**PM10**	**PM2.5**	**CO**
Unmitigated Maximum - lbs/day	153	73	504	108	58
Mitigated Maximum - lbs/day[2]	153	72	146	33	58
SMAQMD Thresholds (lbs/day)	NA[3]	85	NA[3]	NA[3]	NA[3]
Exceeds Threshold (Yes or No)?	No[4]	No	No	No	No

1 Construction emissions estimates were made using URBEMIS 2007. Values in **bold** are in excess of the applicable SMAQMD threshold. See Appendix C for details.
2 Emission reductions incorporated into URBEMIS modeling are described in Mitigation Measures 3.1a and 3.1b. Since construction would disturb 15 acres or less on a given day (SMAQMD's screening criteria for determining the need for detailed dispersion modeling), mitigated particulate emission concentrations would not be considered significant.
3 NA = Not Available. The SMAQMD has not established mass thresholds during the construction phase for ROG, CO, PM10, or PM2.5.
4 Architectural coatings and asphalt paving are the primary sources of ROG during construction. Development must comply with SMAQMD Rules and Regulations, including Rule 442 (Architectural Coatings) and Rule 453 (Cutback and Emulsified Asphalt Paving Materials).

According to the SMAQMD's *Guide to Air Quality Assessment*, due to the non-attainment status of the air basin with respect to ozone, PM10, and PM2.5, the SMAQMD recommends that projects implement a set of Basic Construction Emission Control Practices as best management practices regardless of the significance determination. Such measures would be implemented via the local CEQA approval process (including the Construction Emissions Mitigation Fee, if applicable, as outlined in the EIR). Construction emissions with mitigation are anticipated to be less than significant.

Impact 3.3: Effects from Operational Emissions with Respect to SMAQMD Criteria

Operational emissions for Alternative D buildout (year 2017) have been determined using URBEMIS 2007 and are presented in **Table 4.3-10** below. Based on the estimates shown in **Table 4.3-10**, Alternative D's contribution of ROG to regional air quality would be above the SMAQMD threshold. Therefore, the operational impacts of Alternative D would be considered significant and adverse with respect to SMAQMD thresholds. Development and implementation of mitigation would ensure that operational emissions would be reduced by at least 15 percent; however, because of the large size of the development, emissions would still be expected to exceed the applicable thresholds. The project would implement the AQ-15 Air Quality Plan provided in Volume IV of the Final EIR for the Specific Plan. There are no other feasible mitigation measures that would further reduce this alternative's air quality impacts. While the project proponent would likely implement mitigation similar to Mitigation Measure 3.3, impacts would remain significant and adverse even with implementation of mitigation. The CEQA approval for the Specific Plan included an AQ-15 Air Quality Plan for the SMAQMD.

TABLE 4.3-10
DAILY OPERATIONAL EMISSIONS ESTIMATES - ALTERNATIVE D

	Operational Emissions[1]				
Pollutant	**ROG**	**NOx**	**PM10**	**PM2.5**	**CO**
Area Sources - lbs/day	57	14	111	107	688
On-road Vehicle Sources - lbs/day	52	47	139	27	484
Total Operational Emissions – lbs/day	**109**	61	250	134	1,172
SMAQMD Thresholds (lbs/day)	65	65	NA[2]	NA[2]	NA[2,3]
Exceeds Thresholds (Yes or No)?	Yes	No	No	No	No

1. Area source and operational emissions estimates were made using URBEMIS 2007. ROG and NOx daily estimates are for summertime conditions, whereas CO and particulates are for wintertime conditions. Values in **bold** are in excess of the applicable SMAQMD threshold. See Appendix C for details.
2. NA = Not Available. The SMAQMD has not established mass thresholds for CO, PM10, or PM2.5.
3. CO is discussed further below.

Impact 3.4: Effects from Operational Emissions with Respect to Carbon Monoxide

The general CO impact setting and tiered analysis criteria would be the same for Alternative D as described for Alternative A. Since local CO concentrations associated with Alternative A traffic would be less than significant, and Alternative D would generate less traffic than Alternative A, the CO impact for Alternative D would also be less than significant.

Impact 3.5: Effects from Construction and Operational Emissions with Respect to Toxic Air Contaminants

The total land areas proposed under Alternative D would not be substantial, and it would all be residential, thus a less-than-significant impact would be anticipated.

Impact 3.6: Objectionable Odors

Alternative D would not generate substantial odors and thus this impact would be less than significant.

Impact 3.7: Greenhouse Gas Emissions and Global Climate Change

The GHG general impact setting and analysis criteria would be the same for Alternative D as described for Alternative A. Appendix C contains information regarding assumptions and emissions calculations used in this analysis.

With regard to Criterion A, Alternative D does not pose any apparent conflict with the most recent list of the ARB recommended actions (**see Table 3.3-4**).

Regarding Criterion B, GHG emissions during construction for a worst-case year would be approximately 937 metric tons CO_2e (based on the 1,033 short ton estimate included in **Appendix C**). This estimate is conservative and was developed without the benefit of specific construction schedules which are not available at this time. As shown in **Table 4.3-11**, the increase in GHG emissions from operations of Alternative D would be approximately 21,310 metric tons/year CO_2e. This is below the 25,000 metric tons/year CO_2e threshold used by the state to classify major emitters. Since Alternative D would generate GHG emissions that would not exceed the major source threshold, it would not be anticipated to generate sufficient emissions of GHGs to contribute considerably to the cumulative effects of GHG emissions such that it would impair the state's ability to implement AB 32.

TABLE 4.3-11
OPERATIONAL GREENHOUSE GAS EMISSIONS – ALTERNATIVE D

GHG Sources	Greenhouse Gas Emissions (metric tons/year)[1] CO_2e
On-road Vehicles	14,448
Area Sources	3,671
Indirect Emissions from Electricity Generation	3,191
Total Unmitigated Emissions (metric tons/year)	21,310

1. Emissions were modeled using several models and emission factors, which are described in more detail in Appendix C. These models and emission factors include URBEMIS2007 for on-road vehicle exhaust and area sources. Indirect emissions from electricity generation were estimated based on emission factors in the Local Government Operations Protocol (ARB et al., 2008)

SOURCES: ARB et al., 2008.

With respect to GHG analysis Criterion C, Alternative D would include only residential development (less intense development), but may not be as inherently energy efficient as the other alternatives.

Finally, with regard to Criterion D, Sacramento County has developed *Climate Action Plan Strategy and Framework Document* (Sacramento County, 2011) that summarizes actions that the

County has already taken and identifies possible future actions to be considered, in order to provide a framework for reducing GHG emissions. The County is committed to working with regional partners to comply with AB 32 in reducing GHG emissions by 15% from the 2005 baseline ("current levels") by the year 2020, as well as reducing GHG emissions by 80 percent below 1990 levels by 2050 (consistent with Executive Order S-3-05). Since Alternative D would not exceed the major emitter threshold for GHG emissions expected to be generated by operations, Alternative D would not conflict with the reduction goals included in the County *Climate Action Plan Strategy and Framework Document*. Therefore, this alternative would not conflict with local regulations pertaining to GHGs.

Based upon the analysis of Criteria A, B, C and D presented above, this alternative would not result in a cumulatively considerable increase in GHG emissions and Alternative D would not impair the state's ability to implement AB 32. This impact would be less than significant.

Impact 3.8: Climate Change Impacts on Project Site

The IPCC reports that mean sea level could rise by approximately 12 to 36 inches by the year 2100 (IPCC, 2007). However, the Alternative D site is located a substantial distance from the ocean, and as a result, it is unlikely that erosion or an increase in flooding as a result of climate-induced sea level rise would affect the area.

As discussed in **Section 4.10**, Hydrology and Water Quality, Alternative D would entirely avoid disturbance to floodplains and 100-year flood zones. Therefore, no impact would occur.

4.3.8 References

California Air Pollution Control Officers Association (CAPCOA), 2008. CEQA and Climate Change: Evaluating and Addressing Greenhouse Gas Emissions from Projects Subject to the California Environmental Quality Act.

California Air Resources Board (ARB), 2000. Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles, October 2000.

California Air Resources Board (ARB), 2005. Air Quality and Land Use Handbook: A Community Health Perspective, April 2005.

California Air Resources Board (ARB), California Climate Action Registry, ICLEI, and the Climate Registry, 2008. Local Government Operations Protocol, September 25, 2008.

IPCC, 2007. Climate Change 2007 – The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the IPCC. Available online at: http://www.aaas.org/news/press_room/climate_change/media/4th_spm2feb07.pdf

Sacramento County. 2011. Climate Action Plan Strategy and Framework Document, adopted November 9, 2011.

Sacramento Metropolitan Air Quality Management District (SMAQMD), 2009. Guide to Air Quality Assessment. December 2009.

Rimpo and Associates, 2008. URBEMIS 2007 version 9.2.4, released February 2008.

EPA, 2010. Personal communication via telephone with Jefferson Wehling with U.S. EPA Region 9, October 15, 2010.

This Page is Intentionally Left Blank

4.4 Biological Resources

This section analyzes the potential effects of alternatives on biological resources, including federally listed species and critical habitat, migratory birds, and special status species of state and local concern. Effects to wetlands and other waters of the United States (U.S.) are addressed in **Section 4.5**. The analysis of potential effects is based on the biological setting described in **Section 3.4**.

4.4.1 Alternative A – Applicant's Preferred Alternative

Impact 4.1: Effects to Federally Listed Vernal Pool Species and Critical Habitat

As described in Chapter 3, approximately 30.86 acres of suitable habitat for vernal pool crustaceans, including vernal pools, swales and seasonal wetlands (i.e., suitable habitat features) occur on the project site. In addition, some of these features have been documented to support populations of the federally listed threatened vernal pool fairy shrimp, and provide suitable habitat for the federally listed endangered vernal pool tadpole shrimp (Helm Biological Consulting, 2008a and 2008b). As shown in **Figure 3.4-2**, many of these features occur on the participating parcels. Therefore, this alternative would result in direct and indirect effects to suitable habitat for these species.

Direct effects would occur if a suitable habitat feature, or a portion of suitable habitat feature, is affected by site grading or other ground disturbing activities. In calculating direct effects to suitable vernal pool habitat, it is assumed that if any portion of a feature is directly affected by site grading or other ground disturbing impacts, then the entire feature is directly affected. This differs from the methodology used to calculate direct impacts to wetlands and other waters of the U.S., as described in Section 4.5, where only the directly affected portion of the feature is counted.

Indirect effects may occur to a suitable habitat feature if project activities within 250 feet of the feature may alter the surface and/or subsurface hydrology of the area (USFWS, 1996). Again, if any portion of a feature may be indirectly affected, then the entire feature is counted. Potential direct and indirect effects to suitable vernal pool habitat (as defined in **Section 3.4.1.7**) on participating parcels are summarized in **Table 4.4-1** and **Figure 4.4-1**. A discussion of non-participating parcels is included in **Section 4.16**, Cumulative Effects.

TABLE 4.4-1
EFFECTS TO SUITABLE VERNAL POOL CRUSTACEAN HABITATS – ALTERNATIVE A

Vernal Pool Habitat Feature	Direct Effects (Acres)[1]	Indirect Effects (Acres)	Total Affected (Acres)
Vernal Pool	1.13	0.95	2.08
Wetland Swale	2.08	8.25	10.33
Seasonal Wetland	0.29	0.00	0.29
Total	**3.50**	**9.20**	**12.70**

[1]Totals are approximate and subject to rounding.
SOURCE: ESA, 2011

Based on this evaluation, development under Alternative A would result in the direct loss of approximately 3.50 acres of suitable vernal pool crustacean habitat. Furthermore, development under Alternative A may also indirectly affect approximately 9.20 acres of suitable vernal pool crustacean habitat. No Critical Habitat for federally listed vernal pool species would be affected by Alternative A, and the project would not affect any Core Areas identified in the USFWS Vernal Pool Species Recovery Plan.

The direct loss of suitable habitat for these species, including the direct take of species, represents a significant, adverse impact. In addition, the proximity of project activities to vernal pool crustacean habitat presents the possibility of secondary effects to the habitat due to project-related disturbances. Deterioration of vernal pool habitat could result from the introduction of non-native invasive plant species, decreases in water quality due to erosion or sedimentation, changes in surface or subsurface hydrology, and human intrusion. Therefore, potential indirect effects to suitable habitat are also considered a significant and adverse impact.

Mitigation Measures

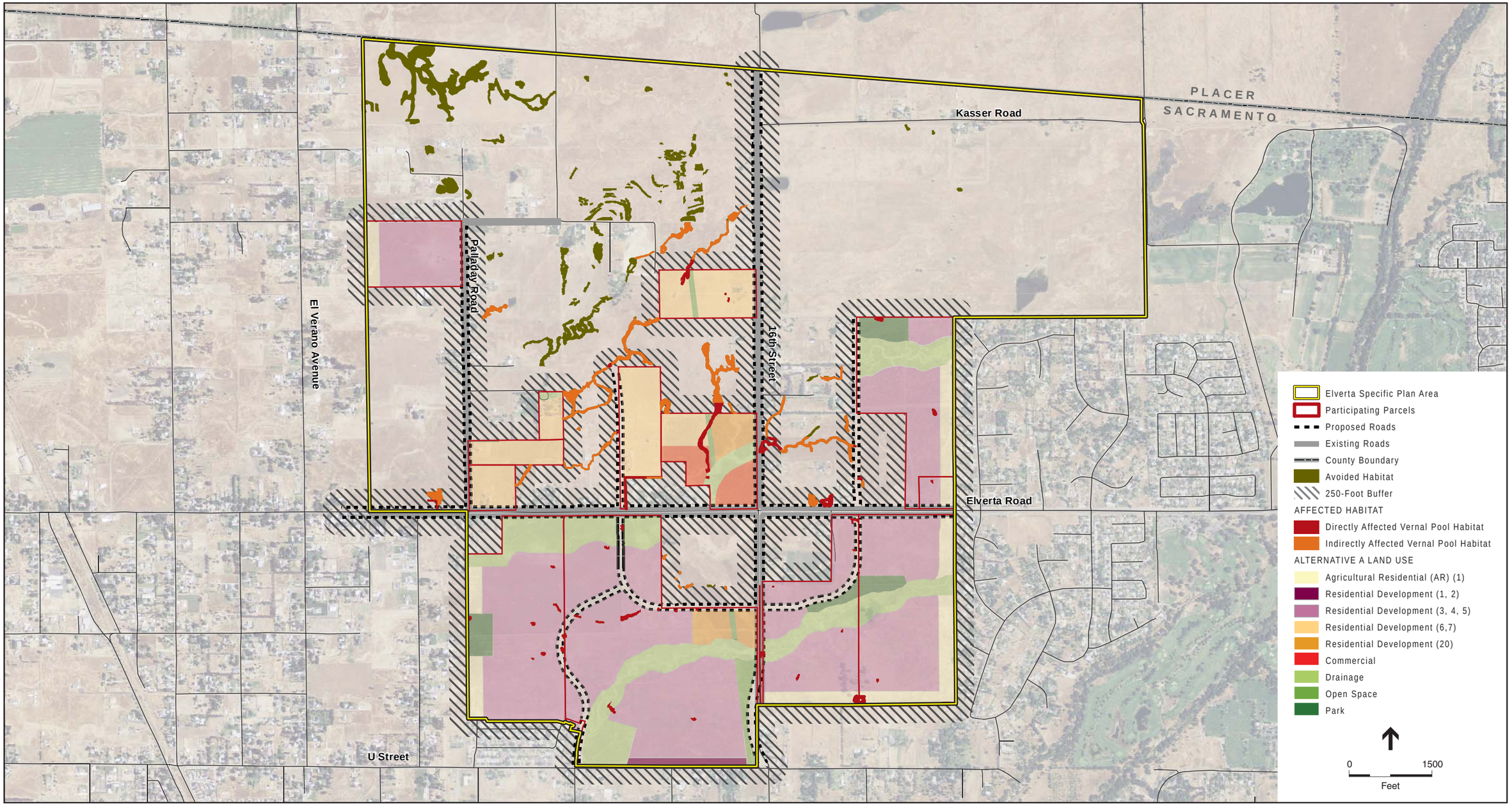
Measure 4.1a (Alternative A and C): Compensate for Direct and Indirect Effects to Vernal Pool Habitat. To fully compensate for direct and indirect effects to habitat for federally listed vernal pool species, the project proponent would purchase habitat creation credits at a USACE and USFWS-approved mitigation bank at a 2:1 preservation ratio and 1:1 creation ratio for direct effects (totaling 3.50 acres) to vernal pool habitat and a 2:1 preservation ratio for indirect effects (totaling 9.20 acres) to vernal pool habitat. Habitat compensation must occur prior to development. Compensation requirements are summarized in **Table 4.4-2**. Compensation for each participating parcel must be approved by the USACE and USFWS prior to the initiation of construction activities. The project proponent must provide the USACE proof of the purchase prior to project construction. Final ratio and credit amounts shall be determined based on permit conditions by the USACE and USFWS.

TABLE 4.4-2
VERNAL POOL HABITAT COMPENSATION REQUIREMENTS – ALTERNATIVE A

Type of Effect	Acres Impacted	Vernal Pool Creation Credits (1:1)	Vernal Pool Preservation Credits (2:1)
Directly Affected Habitat	3.50	3.50	7.00
Indirectly Affected Habitat	9.20	n/a	18.40
Total	**12.70**	**3.50**	**25.40**

SOURCE: ESA, 2011

Measure 4.1b: Use Best Management Practices (BMPs) to Provide Effective Erosion and Sediment Control. Use of BMPs for stormwater control is expected to reduce the potential for avoided vernal pool habitat to be indirectly affected by sediment-laden discharges from construction sites. The performance and effectiveness of these BMPs would be determined either by visual means, where applicable (i.e., observation of above-normal sediment release), or by actual water sampling in cases where the verification of containment reduction or elimination is required to determine the adequacy of the measures. BMPs to be implemented would include, but are not limited to, the following:



SOURCE: NAIP, 2009; ESRI, 2009; RCH Group, 2010; and ESA, 2012

Figure 4.4-1
Potential Effects to Vernal Pool Habitat
Alternative A – Applicant's Preferred Alternative

This Page is Intentionally Left Blank

All disturbed surfaces or stockpile areas would be protected with erosion control measures in place during the period of October 1 through April 30.

- BMPs for temporary erosion control (such as silt fences, staked straw bales/wattles, silt/sediment basins and traps, check dams, geofabric, sandbag dikes, and temporary revegetation or other ground cover) would be employed per the product specifications for disturbed areas, stockpiled soil, and along culverts and drainage ditches on active construction sites and in downstream areas that may be affected by construction activities. Requirements for the placement and monitoring of the BMPs would be part of the contractor's project specifications. Performance and adequacy of the measures would be determined visually by site construction management and verified by the County Department of Water Resources and Central Valley Regional Water Quality Control Board as appropriate.
- Dirt and debris would be swept from paved areas in construction zones on a daily basis as necessary to remove excessive accumulations of silt, mud or other debris. Sweeping and dust removal would be implemented by the contractor and oversight of these operations the responsibility of the construction site superintendent.
- All exposed/disturbed areas, left barren of vegetation due to project related activities, would be seeded, mulched and fertilized with a blend of native and/or naturalized grass and forb species. Locally native wildflower and/or shrub seeds may be included in the seed mix. Planted areas must achieve an 80% acreage coverage rate to be considered successful. All exposed areas where seeding is considered unsuccessful after 90 days, would received appropriate soil preparation and a second application of seed/mulch/fertilizer. Quarterly monitoring events would be conducted for a period of one year or until the target goal is met. The application, schedule, and maintenance of the vegetative cover would be the responsibility of the contractor and requirements to establish a vegetative cover would be included in the construction contractor's project specifications.
- If discharges of sediment or hazardous substances to drainage ways are observed, the USACE would be contacted immediately and construction would be halted until the source of contamination is identified and remediated. Visual indications of such contamination include an oily sheen or coating on water, and noticeable turbidity (lack of clarity) in the water.

Measure 4.1c: Conduct Worker Awareness Training (WEAP). A Worker Environmental Awareness Program (WEAP) training for construction crews and construction foreman would be conducted before any construction activities begin. The WEAP training would be conducted by a qualified wildlife biologist. The training would include a brief review of the special status species and other sensitive resources that could occur in the project area (including their life history and habitat requirements and where on the project site they may be found) and their legal status and protection. The program would also cover all relevant mitigation measures, permit conditions and BMP plans, such as the Stormwater Pollution Prevention Plan (SWPPP) and/or erosion control and sediment plan. During WEAP training, construction personnel would be informed of the importance of avoiding ground-disturbing activities outside of the designated work area. A designated environmental inspector would be responsible for ensuring that construction personnel adhere to the guidelines and restrictions and that all persons working on site have attended a WEAP training session. WEAP training sessions would be conducted as needed for new personnel brought onto the job throughout the duration of construction.

Measure 4.1d: Limit Project Access Routes/Staging Areas. The total number of access routes, number and size of staging areas, and the total area of project activity would be limited to those areas identified in the approved construction drawings and/or plans or as otherwise approved per permit conditions. Access routes and project boundaries would be clearly marked at all times. Access routes for heavy equipment to and from the project site would be restricted to established roadways to minimize habitat disturbance. The storing of construction equipment, vehicles, and supplies would be restricted to the designated construction staging areas. All fueling, cleaning and maintenance activities of vehicles and other equipment would be performed only in designated areas and at least 250 feet away from avoided habitats. As part of WEAP training, all workers would be informed of the importance of preventing spills and appropriate measures to take in the event of a spill. All spills would be cleaned up immediately.

Significance after Mitigation: Less than significant.

Impact 4.2: Effects to Western Spadefoot

Implementation of Alternative A would include the filling of approximately 23.01 acres of seasonal swales and wetlands, and vernal pool habitats, which may provide suitable breeding habitat for this species. Although this species has not been observed within the project site, suitable habitat is present within the seasonal wetlands, swales, and vernal pools. Filling and grading suitable aquatic habitat during construction could affect individuals if they are present. In addition, loss of suitable breeding may limit breeding opportunities for this species within the project site. This is considered a significant and adverse impact.

Mitigation Measure

Measure 4.2: Perform Pre-construction Surveys for Western Spadefoot. Prior to construction, a qualified biologist would conduct a survey for western spadefoot. The survey would include transecting all suitable habitat that may be affected by project activities and identifying suitable burrows that may be used for aestivation. Suitable burrows would be excavated using hand tools. If a spadefoot is found in the construction easement, the biologist would move the spadefoot from the area to a CDFG-approved site.

Significance after Mitigation: Less than significant.

Impact 4.3: Effects to Western Pond Turtle

Implementation of Alternative A would include the filling of approximately 4.56 acres of seasonal stream channels, ponds, and drainage ditches, which may provide suitable habitat for western pond turtle. Although this species has not been observed within the project site, potential habitat is present along open water habitats associated with the ponds and drainage channels. Draining and grading of suitable habitat during construction would directly affect western pond turtle individuals if they are present. This is considered a significant and adverse impact.

Mitigation Measure

Measure 4.3: Perform Pre-construction Surveys for Western Pond Turtle. Prior to construction, a qualified biologist would conduct a survey for western pond turtles within 24 hours of the start of construction activities in ponds, steams, ditches, and other watercourses that may be affected by construction activities. If no individuals are identified then no additional measures are required. If a turtle is found in the construction easement, the biologist would move the turtle from the area to a CDFG-approved location. If a turtle becomes trapped during construction activities in the waterway, a biologist would remove the turtle from the work area and place it downstream and outside of the construction area.

Significance after Mitigation: Less than significant.

Impact 4.4: Effects to Nesting Special-Status Birds Species and Migratory Birds

As noted in **Section 3.4**, several species of state and local concern may nest in habitats that may be directly or indirectly affected by site development under Alternative A. Dense vegetation associated with riparian and other emergent wetland areas provide suitable nesting habitat for tri-colored blackbird. Burrowing owls, white-tailed kites, and grasshopper sparrows may use the project site for nesting as suitable habitat is present for these species. Although suitable Swainson's hawk nesting habitat is limited within the project site, there are several large walnut, oak, and eucalyptus trees that could be used for nesting. These species may be adversely affected if active nest sites are either directly removed or exposed to a substantial increase in noise or human presence during construction. Swainson's hawk is listed as threatened under the California Endangered Species Act (CESA), and removal of an occupied nest tree, or project related disturbance that results in the loss or abandonment of a nest is prohibited. Most nesting birds are also protected by the Migratory Bird Treaty Act, and tri-colored blackbird, western burrowing owl, northern harrier, and grasshopper sparrow are considered species of special concern by the CDFG, while white-tailed kite are a fully protected species. Project related disturbance resulting in the loss or abandonment of an active nest would be considered a significant and adverse impact.

Mitigation Measures

Measure 4.4a: Avoid Active Nesting Season. To avoid and minimize impacts to tree and shrub nesting species, the following measures would be implemented:

- If feasible, conduct all tree and shrub removal and grading activities during the non-breeding season (generally September 1 through January 31).
- If grading and tree removal activities are scheduled to occur during the breeding season (February 1 through August 31), pre-construction surveys would be performed prior to the start of project activities (refer to Mitigation Measure 4.4b).

Measure 4.4b: Conduct Pre-construction Nesting Bird Surveys. If construction, grading or other project-related activities are schedule during the nesting season (February 1 to August 31), pre-construction surveys would be conducted by a qualified wildlife biologist to identify

active Swainson's hawk nests within ½-mile of proposed construction activities and nests of other species within 250 feet of proposed construction activities. The surveys would be conducted no less than 14 days and no more than 30 days prior to the beginning of construction. The results of the survey would be emailed to CDFG at least three days prior to construction. Surveys would be conducted by a qualified biologist in accordance with the following protocols:

- For Swainson's hawk surveys, guidelines provided in the *Recommended Timing and Methodology for Swanson's Hawk Nesting Survey in the Central Valley* (Technical Advisory Committee 2000) would be followed where possible (**Appendix I**).
- Surveys for burrowing owls would be conducted between March and May and in accordance with the *Staff Report on Burrowing Owl Mitigation* (CDFG, 1995; **Appendix H**).
- Surveys for tricolored blackbirds, northern harrier, white-tailed kite, and grasshopper sparrow would include at least two pre-construction surveys (separated by at least two weeks).
- Surveys for other migratory bird species would take place no less than 14 days and no more than 30 days prior to the beginning of construction within suitable nesting habitat.

If the pre-construction surveys do not identify any nesting raptors or other nesting migratory bird species within areas potentially affected by construction activities, no further mitigation would be required. If the pre-construction surveys do identify nesting raptors or other nesting bird species within areas that may be affected by site construction, Mitigation Measure 4.4c would be implemented.

Measure 4.4c: Avoid Active Bird Nest Sites. Should active nest sites be discovered within areas that may be affected by construction activities, additional measures would be implemented as described below.

Swainson's Hawk: If active nests are found, CDFG would be notified and project-related construction impacts would be avoided by establishment of appropriate no-work buffers to limit project-related construction activities near the nest site. The size of the no-work buffer zone would be determined in consultation with the CDFG, although a ¼ mile buffer would be used when possible. The no-work buffer zone would be delineated by highly visible temporary construction fencing. In consultation with CDFG, monitoring of nest activity by a qualified biologist may be required if the project-related construction activity has potential to adversely affect the nest or nesting behavior of the bird. No project-related construction activity would commence within the no-work buffer area until a qualified biologist and CDFG confirms that the nest is no longer active.

Burrowing Owls: If actively nesting burrowing owls are discovered in the project site during the breeding season (February 1 to August 31), CDFG would be notified. Where construction activities could directly affect burrowing owl survival or reproductive behavior, or where maintenance of a minimum 250-foot buffer zone around active burrowing owls is not practical, a qualified biologist would recommend site specific mitigation measures, which may include the following:

- A site-specific plan to complete nearby construction activities when adult owls are in burrows attending to young nestlings (and thus not disturbed by the presence of construction equipment);
- Modification of construction procedures so critical construction tasks could be completed in as short a time as possible; and/or
- Close monitoring of the owls' behavior before, during and after construction so any significant changes in the owls' behavior would be apparent.

If the project would result in direct impacts to active burrows, passive relocation/exclusion would be allowed during the non-breeding season (September 1 to January 31). The CDFG would be consulted on current passive relocation methodology before relocation of owls is attempted. Breeding burrowing owls and their young would not be relocated. Following exclusion, the burrows can be destroyed to prevent the birds from returning to the site. Following the passive exclusion, burrows within 250 feet of the project area would be seasonally blocked (anchored plywood or other similar mechanism) to prevent burrowing owls from establishing new burrows in the project area. Monitoring would occur prior to the nesting season through construction of the project, as determined in consultation with the CDFG, to ensure that owls do not return to the project area during the construction season. The burrows would be unblocked prior to the beginning of the next breeding season.

Tricolored Blackbird: If a colony is identified in or within 500 feet of the project area, the project proponent would consult with CDFG regarding suitable measures to avoid impacting breeding effort. Measures would include, but are not limited to:

1. Maintaining a 500-foot buffer around each colony; no construction activities would be permitted within this buffer except as a result of consultation with CDFG.

2. Depending on conditions specific to each colony, and the relative location and rate of construction activities, it may be feasible for construction to occur as planned within the buffer without impacting the breeding effort. In this case (to be determined in consultation with CDFG), the colony would be monitored by a qualified biologist during construction within the buffer. If, in the professional opinion of the monitor, the project would impact the colony, construction activities within the buffer would cease until the colony is no longer active or the project receives approval to continue from CDFG.

Northern Harrier, White-Tailed Kite, and other Migratory Birds: If active nests are found, project-related construction impacts would be avoided by establishment of appropriate no-work buffers to limit project-related construction activities near the nest site. The size of the no-work buffer zone would be determined in consultation with the CDFG although a 500-foot would be used when possible. The no-work buffer zone would be delineated by highly visible temporary construction fencing. In consultation with CDFG, monitoring of nest activity by a qualified biologist may be required if the project-related construction activity has potential to adversely affect the nest or nesting behavior of the bird. No project-related construction activity would commence within the no-work buffer area until a qualified biologist and CDFG confirms that the nest is no longer active.

Significance after Mitigation: Less than significant.

Impact 4.5: Effects to Special-Status Wildlife Associated with Annual Grasslands

Construction activities under Alternative A would result in the loss of approximately 502 acres of annual grassland. These areas provide habitat for several special-status wildlife species, including American badger, burrowing owl (nesting and foraging), northern harrier (foraging), grasshopper sparrow (nesting and foraging), white-tailed kite (foraging), and Swainson's hawk (foraging). Although grassland habitats are regionally abundant in central California, this portion of Sacramento County has experienced substantial losses of grassland habitat due to residential and commercial development. This project, when combined with adjacent existing and proposed development, has the potential to contribute to the fragmentation of large tracts of grassland habitat. This is considered a significant and adverse impact.

CDFG and the County have developed mitigation guidance and programs to compensate for the loss of Swainson's hawk foraging habitat. The County's ordinance focuses on the loss of lands zoned for agricultural use, while CDFG guidance recommends a foraging habitat mitigation ratio that is dependent upon the project's distance to the nearest known Swainson's hawk nest site. However, for the Elverta Specific Plan, the County and CDFG coordinated and developed a site specific analysis (for specific details refer to the Elverta Specific Plan FEIR, 2007). That analysis determined that approximately 90% (1,572± acres) of the 1,744+ acre Plan area provided suitable foraging habitat within the foraging range of the hawk, with the remaining 10% (172± acres) comprised of parcels 5 acres and smaller (most of which have already been developed), which the CDFG considers to be too small to support viable foraging habitat. With the exception of the 5-acre and smaller parcels, the entire Elverta Specific Plan area was assessed a 1:1 mitigation ratio for Swainson's hawk foraging habitat loss. Based upon this guidance and the nearest recorded nest site (CNDDB, 2010), a mitigation ratio of 1:1 is recommended to reduce potential effects related to foraging habitat loss.

Mitigation Measure

> **Measure 4.5a (Alternative A and C): Compensate for the loss of SWHA foraging habitat.** Prior to construction, each project proponent would compensate for the loss of grassland habitat on participating parcels at a ratio no less than 1:1, for a total of 502 acres for all participating parcels. The preservation and management of this habitat would be documented in a Swainson's hawk mitigation plan that would be subject to final approval by CDFG.
>
> -OR-
>
> **Measure 4.5b: Swainson's Hawk Impact Mitigation Fee.** Under the County's Swainson's Hawk Ordinance, the project proponent may submit payment of a Swainson's Hawk impact mitigation fee per acre of calculated habitat impacted to the County in the amount established. The amount may be amended from time to time to ensure that the fee will keep pace with the inflation of land prices. The current mitigation fee is $16,000 per acre with an operations/management fee of $2,375 per acre and a one time administrative fee of $500.00. However, for project impacts over 40 acres; the County will require preservation, through conservation easement or fee title, of one acre of suitable habitat for each acre developed.

Significance after Mitigation: Less than significant.

Impact 4.6: Effects to Special-Status Plants

Implementation of Alternative A would result in the direct loss of approximately 12.33 acres of suitable habitat for special-status plants associated with vernal pools, including dwarf downingia, Bogg's Lake hedge-hyssop, legenere, pincushion navarretia, and Ahart's dwarf rush. Although none of these species were recorded by more recent site surveys, many of the vernal pools on the site provide potential habitat for these species.

Additional special-status plant species associated with emergent marsh habitats and ponds that may be affected by Alternative A include woolly rose-mallow and Sanford's arrowhead, the latter of which has been documented within a pond near the southeast corner of the project site. The potential loss of special-status plant populations and suitable habitat is considered a significant and adverse impact.

Mitigation Measures

Implement Mitigation Measure 4.1a: Compensate for Direct and Indirect Effects to Vernal Pool Habitat.

Measure 4.6: Compensate for the Loss of Special-Status Plant Populations. A known population of Sanford's arrowhead would be directly affected by proposed drainage improvements. To avoid, minimize, and compensate for this loss, the following measures would be implemented:

- Minimize impacts by restricting removal of plants to as few individuals of a population where possible; and
- Prepare a Mitigation and Monitoring Plan to relocate plants and/or seed banks or reintroduce new populations in suitable habitat and soil types to a CDFG or USFWS-approved off-site location.

Significance after Mitigation: Less than significant.

Impact 4.7: Loss of Native Oaks and Other Protected Trees

While a formal tree survey has not been conducted for the project site, native oak species and other species listed in the Sacramento County General Plan landmark and heritage tree protection policies, have been observed during field surveys. The Sacramento County General Plan calls for the preservation of non-oak native trees along riparian areas if used by Swainson's Hawk, as well as landmark and native oak trees measuring a minimum of 6 inches in diameter or 10 inches aggregate for multi-trunk trees at 4.5 feet above ground. However, if preservation cannot be attained, then loss of the protected trees shall be compensated. Compensation for tree loss may be achieved by on-site or off-site replacement or payment into a Tree Preservation fund. Development activities under Alternative A may occur

within the dripline of native oak trees or other protected trees, or may result in the direct removal of native oak trees or other protected trees. Work within the dripline of trees may cause permanent damage to the root system and the subsequent loss of the tree. Impacts to protected trees are considered significant and adverse.

Mitigation Measures

Measure 4.7: Protect Sensitive Tree Resources Adjacent to Construction Activities. Sensitive tree resources adjacent to construction activities may require additional protection. Where feasible, buffer zones should include a minimum one-foot-wide buffer zone outside the dripline for oaks or landmark trees. The locations of these resources would be clearly identified on the construction drawings and marked in the field. Fencing or other barriers would remain in place until all construction and restoration work that involves heavy equipment is complete. Construction vehicles, equipment, or materials would not be parked or stored within the fenced area. No signs, ropes, cables, or other items would be attached to the protected trees. Grading, filling, trenching, paving, irrigation, and landscaping within the driplines of oak trees would be limited. Grading within the driplines of oak trees would not be permitted unless specifically authorized by a Certified Arborist. Hand-digging must be done in the vicinity of major trees and as recommended by a Certified Arborist to prevent root cutting and mangling by heavy equipment.

Significance after Mitigation: Less than significant.

4.4.2 Alternative B – Reduced Impact Alternative

Impact 4.1: Effects to Federally Listed Vernal Pool Species and Critical Habitat

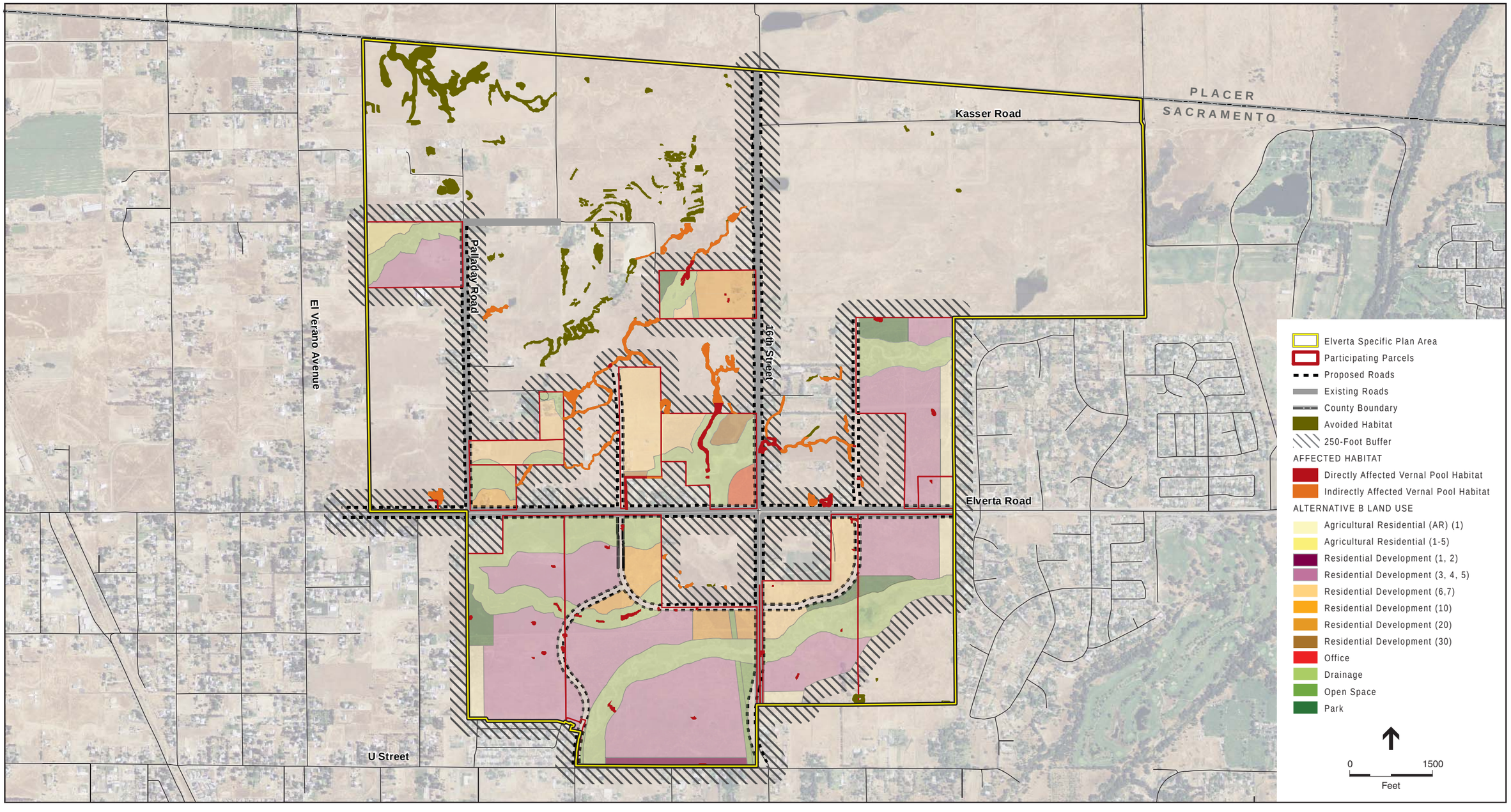
Similar to Alternative A, this alternative would result in direct and indirect effects to suitable habitat for vernal pool species, although to a somewhat lesser extent. Potential direct and indirect effects to suitable vernal pool crustacean habitat on participating parcels are summarized in **Table 4.4-3** and **Figure 4.4-2**. A discussion of non-participating parcels is included in **Section 4.16**, Cumulative Effects.

TABLE 4.4-3
EFFECTS TO VERNAL POOL CRUSTACEAN HABITATS – ALTERNATIVE B

Vernal Pool Habitat Feature	Direct Effects (Acres) [1]	Indirect Effects (Acres)	Total Affected (Acres)
Vernal Pool	0.77	0.95	1.72
Wetland Swale	2.08	8.24	10.32
Seasonal Wetland	0.28	0.00	0.28
Total	**3.14**	**9.20**	**12.34**

1. Totals are approximate and subject to rounding.

SOURCE: ESA, 2011



SOURCE: NAIP, 2009; ESRI, 2009; RCH Group, 2010; and ESA, 2012

Figure 4.4-2
Potential Effects to Vernal Pool Habitat
Alternative B – Reduced Impact Alternative

This Page is Intentionally Left Blank

Based on this evaluation, development under Alternative B would result in the direct loss of approximately 3.14 acres of suitable vernal pool crustacean habitat. Furthermore, development under Alternative B may also indirectly affect approximately 9.20 acres of vernal pool crustacean habitat. Like Alternative A, no Critical Habitat for federally listed vernal pool species would be affected by Alternative B, and the project would not affect any Core Areas identified in the USFWS Vernal Pool Species Recovery Plan.

As with Alternative A, potential direct and indirect effects to suitable habitat for these species are considered a significant, adverse impact.

Mitigation Measures

Implement Mitigation Measures 4.1b: Use Best Management Practices (BMPs) to Provide Effective Erosion and Sediment Control, 4.1c: Conduct Worker Awareness Training (WEAP), and 4.1d: Limit Project Access Routes/Staging Areas.

Measure 4.1a (Alternative B): Compensate for Direct and Indirect Effects to Vernal Pool Habitat. To fully compensate for direct and indirect effects to habitat for federally listed vernal pool species, the project proponent would purchase habitat creation credits at a USACE and USFWS-approved mitigation bank at a 2:1 preservation ratio and 1:1 creation ratio for direct effects (totaling 3.14 acres) to vernal pool habitat and a 2:1 preservation ratio for indirect effects (totaling 9.20 acres) to vernal pool habitat. Habitat compensation must occur prior to development. Compensation requirements are summarized in **Table 4.4-4**. Compensation for each participating parcel must be approved by the USACE and USFWS prior to the initiation of construction activities. The project proponent must provide the USACE proof of the purchase prior to project construction. Final ratio and credit amounts shall be determined based on permit conditions by the USACE and USFWS.

TABLE 4.4-4
VERNAL POOL HABITAT COMPENSATION REQUIREMENTS – ALTERNATIVE B

Type of Effect	Acres Impacted	Vernal Pool Creation Credits (1:1)	Vernal Pool Preservation Credits (2:1)
Directly Affected Habitat	3.14	3.14	6.28
Indirectly Affected Habitat	9.20	n/a	18.40
Total	**12.34**	**3.14**	**24.68**

SOURCE: ESA, 2011

Significance after Mitigation: Less than Significant

Impact 4.2: Effects to Western Spadefoot

Implementation of Alternative B would include the filling of approximately 18.24 acres of seasonal wetlands and vernal pool habitats, which may provide suitable breeding habitat for this species. Like Alternative A, this is considered a significant and adverse impact.

Mitigation Measures

Implement Mitigation Measure 4.2: Perform Pre-construction Surveys for Western Spadefoot.

Significance after Mitigation: Less than significant.

Impact 4.3: Effects to Western Pond Turtle (Significant)

Like Alternative A, implementation of Alternative B would include the filling of approximately 4.56 acres of ponds, stream channels and drainage ditches, which may provide suitable habitat for western pond turtle. This is considered a significant and adverse impact.

Mitigation Measure

Implement Mitigation Measure 4.3: Perform Pre-construction Surveys for Western Pond Turtle.

Significance after Mitigation: Less than significant.

Impact 4.4: Effects to Nesting Special-Status Birds Species and Migratory Birds

Like Alternative A, Alternative B may impact nesting birds, including Swainson's hawk, tri-colored blackbird, burrowing owl, white-tailed kite, northern harrier and grasshopper sparrow. Project related disturbance resulting in the loss or abandonment of an active nest would be considered a significant and adverse impact.

Mitigation Measures

Implement Mitigation Measures 4.4a: Avoid Active Nesting Season, 4.4b: Conduct Pre-construction Nesting Bird Surveys, and 4.4c: Avoid Active Bird Nest Sites.

Significance after Mitigation: Less than significant.

Impact 4.5: Effects to Special-Status Wildlife Associated with Annual Grasslands

Construction activities under Alternative B would result in the loss of approximately 463 acres of annual grassland. As described for Alternative A, grasslands provide habitat for several special-status wildlife species. The loss of this amount of grassland habitat is therefore considered significant and adverse.

Mitigation Measures

Measure 4.5a (Alternative B): Compensate for the loss of grassland habitat. Prior to construction, each project proponent would compensate for the loss of grassland habitat on participating parcels at a ratio no less than 1:1, for a total of 463 acres for all participating parcels. The preservation and management of this habitat would be documented in a Swainson's hawk mitigation plan that would be subject to final approval by CDFG.

-OR-

Measure 4.5b: Swainson's Hawk Impact Mitigation Fee. Under the County's Swainson's Hawk Ordinance, the project proponent may submit payment of a Swainson's Hawk impact mitigation fee per acre of calculated habitat impacted to the County in the amount established. The amount may be amended from time to time to ensure that the fee will keep pace with the inflation of land prices. The current mitigation fee is $16,000 per acre with an operations/management fee of $2,375 per acre and a one time administrative fee of $500.00. However, for project impacts over 40 acres; the County will require preservation, through conservation easement or fee title, of one acre of suitable habitat for each acre developed.

Significance after Mitigation: Less than significant.

Impact 4.6: Effects to Special-Status Plants

Implementation of Alternative B would result in the direct loss of approximately 8.21 acres of suitable habitat for special-status plants associated with vernal pools. Like Alternative A, Alternative B would also impact special-status plant species associated with emergent marsh habitats and ponds, including woolly rose-mallow and Sanford's arrowhead. The loss of special-status plant populations and suitable habitat is considered a significant and adverse impact.

Mitigation Measures

Implement Mitigation Measure 4.1a: Compensate for Direct and Indirect Effects to Vernal Pool Habitat and Mitigation Measure 4.6: Compensate for the Loss of Special-Status Plant Populations.

Significance after Mitigation: Less than significant.

Impact 4.7: Loss of Native Oaks and Other Protected Trees

Like Alternative A, development activities under Alternative B may occur within the dripline of native oak trees or other protected trees, or may result in the direct removal of native oak trees or other protected trees. Impacts to protected trees are considered a significant and adverse impact.

Mitigation Measures

Implement Mitigation Measure 4.7: Protect Sensitive Tree Resources Adjacent to Construction Activities.

Significance after Mitigation: Less than significant.

4.4.3 Alternative C – Approved Specific Plan with 25% Density Bonus

As summarized in **Figure 4.4-3**, implementation of Alternative C would result in the same impacts to biological resources as described for Alternative A, as the alternatives differs only in development areas and the configuration of proposed drainage areas; impacts associated with the overall project "footprint" would be the same. Therefore, impacts and mitigation measures for Alternative C would be the same as Alternative A.

4.4.4 Alternative D – No Permit Alternative

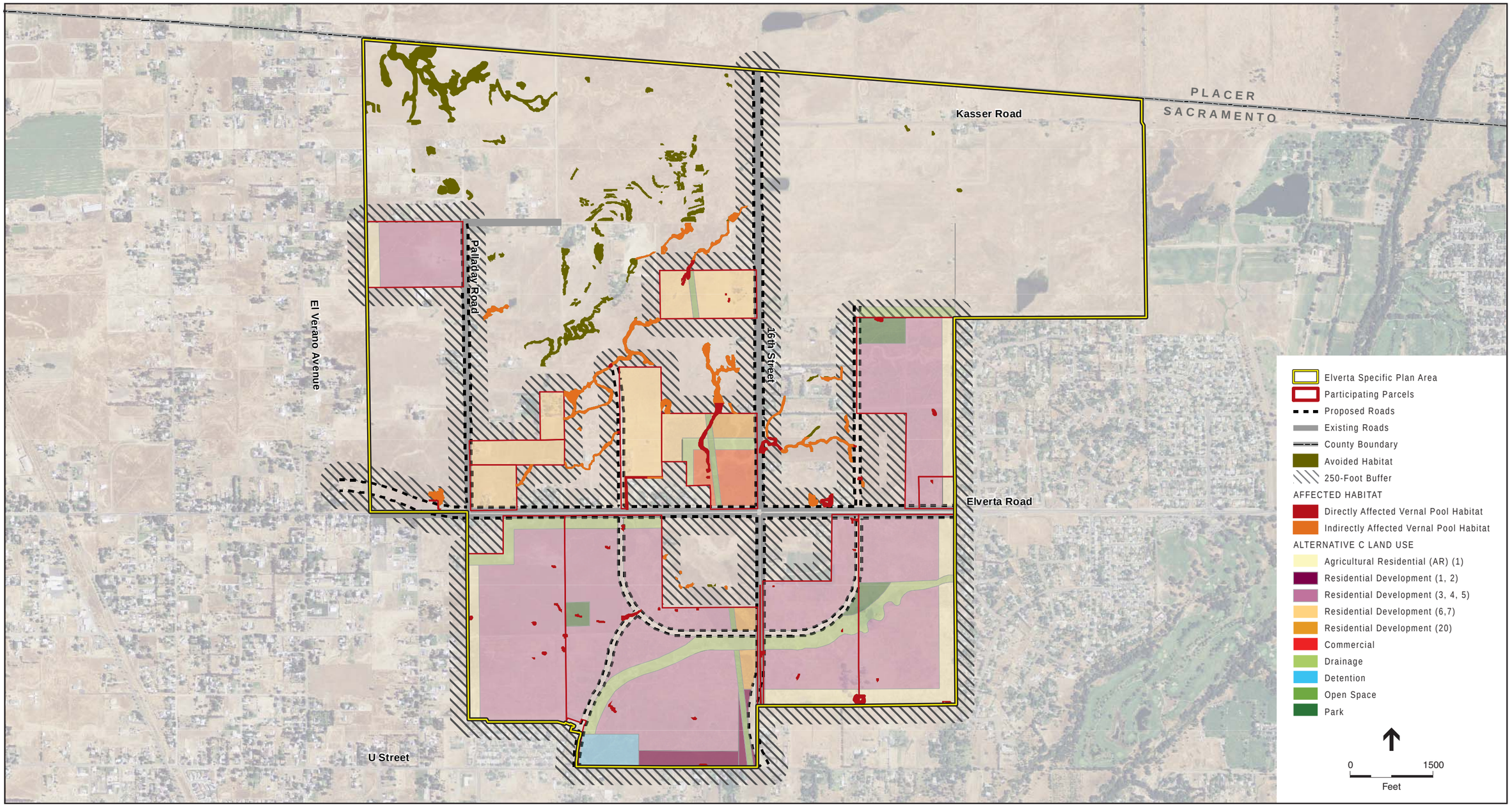
Impact 4.1: Effects to Federally Listed Vernal Pool Species and Critical Habitat

Alternative D would not directly affect suitable habitat for these species. Potential future development under this alternative may indirectly affect habitat for federally listed vernal pool species. Any future activities in the project site would require local approvals and permits (including compliance with the California Environmental Quality Act [CEQA]) and possible consultation with the USFWS under Section 10 of the Endangered Species Act. This may include preparation of a Habitat Conservation Plan to address the incidental take of listed species if warranted.

While no authorized fill of wetlands or other waters of the U.S would occur under this alternative, vernal pools would continue to be subject to the encroachment of invasive weed species and other indirect effects. While these activities are detrimental to the long term success and recovery for these species, it is anticipated that habitat conditions within the project site would largely remain unchanged from current conditions, and a less-than-significant impact would result.

Impacts 4.2 through 4.5: Effects to Special-Status Species and Migratory Birds

As described previously, future development under Alternative D may result in the loss of suitable foraging and nesting habitat. These activities could result in direct or indirect effects to western spadefoot, western pond turtle, American badger, northern harrier, Swainson's hawk, tri-colored blackbird, burrowing owl, white-tailed kite, grasshopper sparrow, or migratory birds. Any future activities would require permits from Sacramento County, CDFG, and/or USFWS, and subsequent analysis and mitigation under CEQA. A less-than-significant impact would result.



SOURCE: NAIP, 2009; ESRI, 2009; RCH Group, 2010; and ESA, 2012

Figure 4.4-3
Potential Effects to Vernal Pool Habitat
Alternative C – Approved Specific Plan Alternative

This Page is Intentionally Left Blank

Impact 4.6: Effects to Special-Status Plants

As described previously, future development under Alternative D may result in the loss of suitable habitat. These activities could result in direct or indirect effects to Bogg's Lake hedge-hyssop, Ahart's dwarf rush, legenere, Sacramento orcutt grass, and Sanford's arrowhead. Any future development activities would require permits from Sacramento County, CDFG, and USFWS, and subsequent analysis and mitigation under CEQA. A less-than-significant impact would result.

Impact 4.7: Loss of Native Oaks and Other Protected Trees

Any future development under Alternative D to protected tree resources would be subject to protection per the General Plan and/or County Tree Ordinance, and a less-than-significant impact would result.

4.4.5 References

California Department of Fish and Game (CDFG). 1995. Staff Report on Burrowing Owl Mitigation. Sacramento, CA. September 25, 1995.

California Natural Diversity Database (CNDDB) Rarefind computer program (Version 3.1.0). 2010. California Department of Fish and Game, Biogeographic Data Branch. Sacramento, CA. Commercial Version dated: May 1, 2010. Data will expire on November 1, 2010.

California Department of Fish and Game (CDFG). 2009. Protocols for Surveying and Evaluating Impacts to Special-Status Native Plant Populations and Natural Communities. Sacramento, CA. November 24, 2009.

Swainson's Hawk Technical Advisory Committee. 2000. Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley. May 31, 2000.

U.S. Fish and Wildlife Service (USFWS) 1996. Programmatic Formal Endangered Species Act Consultation on Issuance of 404 Permits for Projects with Relatively Small Effects on Listed Vernal Pool Crustaceans Within the Jurisdiction of the Sacramento Field Office, California. Sacramento, CA.

U.S. Fish and Wildlife Service (USFWS). 2005. Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon. Region 1. Portland, Oregon.

This Page is Intentionally Left Blank

4.5 Aquatic Resources

4.5.1 Alternative A – Applicant's Preferred Alternative

Impact 5.1: Effects to Wetlands and Other Waters of the U.S.

All of the 27.57 acres of jurisdictional waters of the U.S. within the participating parcels and backbone infrastructure area would be filled under Alternative A. A discussion of non-participating parcels is included in **Section 4.16**, Cumulative Effects. Impacted features would include approximately 11.2 acres of vernal pools, 1.7 acres of seasonal wetland, 10.1 acres of wetland swale, 0.5 acre of drainage ditches, 3.8 acres of open water (pond), and 0.3 acre of ephemeral and intermittent stream channels. Unlike impacts calculated for vernal pool habitats, only those areas that would be directly filled by project activities are included in this calculation. Indirect impacts to jurisdictional waters of the U.S. are discussed in detail in Section 4.3 (Hydrology, Water Quality, and Flooding) and Section 4.5 (Biological Resources), as well as Mitigation Measures 4.4-1b and 4.4-1c. Potential effects associated with each land use under Alternative A are summarized in **Table 4.5-1** and **Figure 4.5-1**. The direct fill of approximately 27.57 acres of wetlands and other waters of the U.S. is considered a significant and adverse impact.

TABLE 4.5-1
EFFECTS TO WATERS OF THE U.S. - ALTERNATIVE A

Type of Jurisdictional Feature	Acres Affected	Percent Affected*
Channel	0.30	47.6%
Ditch	0.46	38.7%
Pond	3.80	32.4%
Seasonal Wetland	1.70	13.9%
Vernal Pool	11.23	54.7%
Wetland Swale	10.08	26.1%
Total	**27.57**	**32.4%**

NOTE: *percent affected refers to the percent of the total Elverta Specific Plan area's total acreage.
SOURCE: SOURCE: ESA, 2011; Barnett Environmental, 2012.

The goal of the Clean Water Act is to maintain and restore the physical, chemical, and biological integrity of the Nation's waters. Furthermore, Executive Order 11990 directs federal agencies to "to minimize the destruction, loss or degradation of wetlands." To achieve these goals, wetland impacts are often compensated through restoration, enhancement, establishment, and in certain circumstances preservation (33 CFR §332.3).

The U.S. Army Corps of Engineers (USACE) considers the functions and services of the jurisdictional waters of the U.S that would be eliminated or degraded, the functions and services of waters on the proposed mitigation site, and the likelihood of success of the proposed mitigation when considering compensatory mitigation for impacts. The purpose of compensatory mitigation is to develop long-term self- sustaining waters that are not dependent on human

intervention after the establishment period. In general, the required compensatory mitigation should be located within the same watershed as the impact site, and should be located where it is most likely to successfully replace lost functions and services. As stated previously, compensatory mitigation may be performed using the methods of restoration, enhancement, establishment, and in certain circumstances preservation. Restoration is generally the first option considered because the likelihood of success is greater and the impacts to potentially ecologically important uplands are reduced compared to establishment, and the potential gains in terms of aquatic resource functions are greater, compared to enhancement and preservation (33 CFR §332.3).

The amount of required compensatory mitigation must be, to the extent practical, sufficient to replace lost aquatic resource functions. In cases where appropriate functional or condition assessment methods or other suitable metrics are available, these methods should be used where practicable to determine how much compensatory mitigation is required. If a functional or condition assessment or other suitable metric is not used, a minimum one-to-one acreage or linear foot compensation ratio must be used. A mitigation ratio greater than one-to-one may be necessary to account for the method of compensatory mitigation (e.g., preservation), the likelihood of success, differences between the functions lost at the impact site and the functions expected to be produced by the compensatory mitigation project, temporal losses of aquatic resource functions, the difficulty of restoring or establishing the desired aquatic resource type and functions, and/or the distance between the affected aquatic resource and the compensation site (33 CFR §332.3).

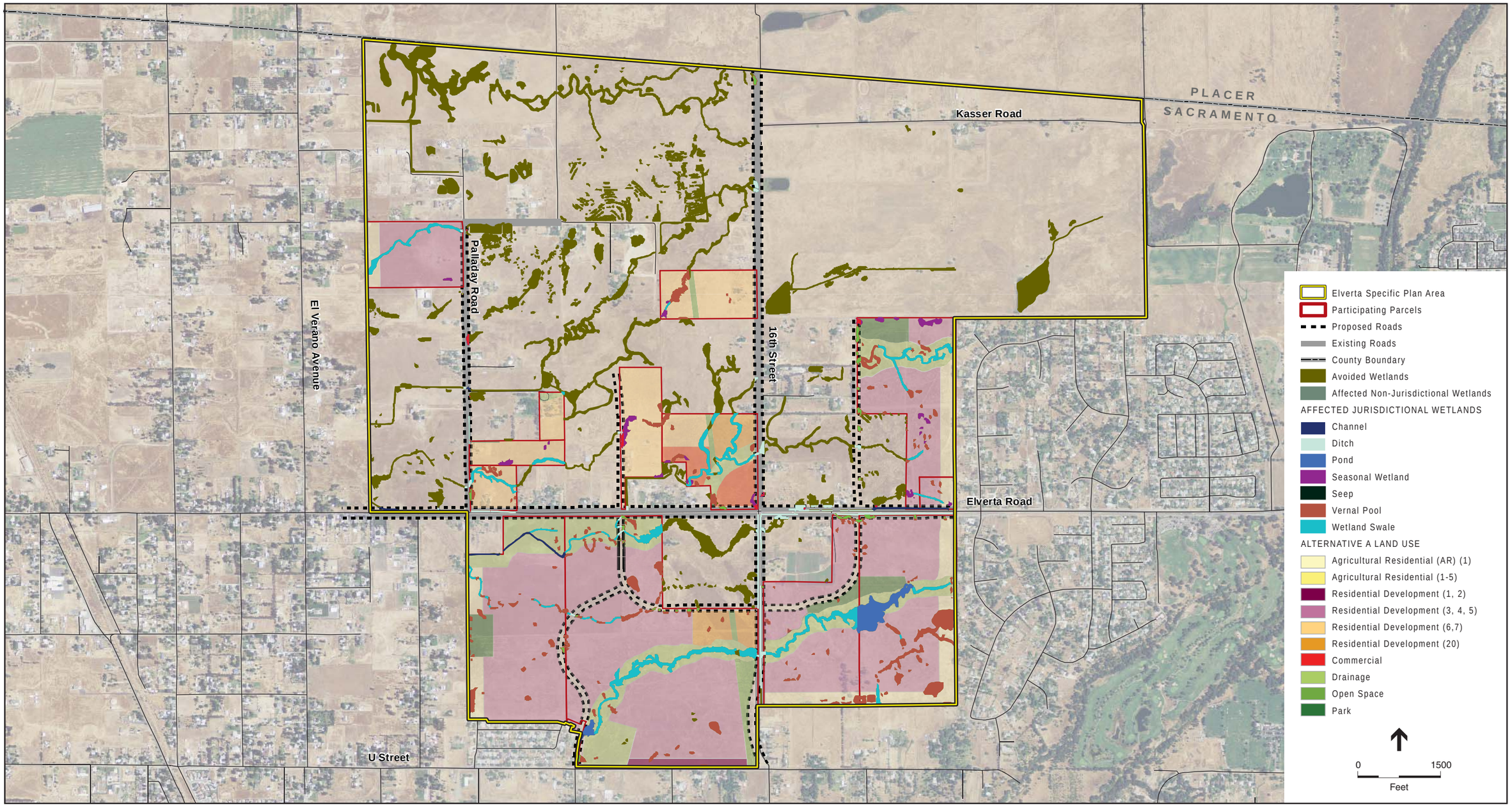
Alternative A includes on-site creation and enhancement of approximately 25.05 acres of wetlands and other waters of the U.S. within on-site Riparian Drainage areas. An additional 56.32 acres of riparian, seasonal wetland, and upland grassland habitats would also be created or enhanced within the proposed drainage areas; these areas may also be classified as jurisdictional post-construction, but were not classified so in this plan due to the uncertainty of post construction soils and hydrologic parameters. On site creation and enhancement is summarized in **Table 4.5-2**, while **Table 4.5-3** summarizes the preservation ratio for each impacted water type.

TABLE 4.5-2
ON-SITE JURISDICTIONAL CREATION AND ENHANCEMENT - ALTERNATIVE A

Habitat Type	Acres[1]
Open Water (Riverine)	5.11
Seasonal Freshwater Marsh	6.10
Seasonal Wetland	13.84
Total	**25.05**

1. Totals are approximate and subject to rounding.
SOURCE: Barnett Environmental, 2011.

As shown above, the project proponents propose to mitigate for a portion of the project's jurisdictional waters impacts by creating or enhancing wetland habitat within the proposed flood conveyance and stormwater treatment drainage corridors. Additional details regarding the conceptual habitat development plan for the proposed drainage corridors is



SOURCE: NAIP, 2009; ESRI, 2009; RCH Group, 2010; and ESA, 2012

Figure 4.5-1
Potential Effects to Waters of the U.S.
Alternative A – Applicant's Preferred Alternative

This Page is Intentionally Left Blank

provided in **Appendix K**. While the drainage corridors may be considered appropriate locations to mitigate for the loss of channels, seasonal wetlands, wet swales, and ponds, areas that convey urban and dry season irrigation runoff are generally not considered appropriate locations to create and maintain vernal pool habitats. Therefore, Alternative A does not provide for the on-site compensation of vernal pool wetland habitat.

TABLE 4.5-3
PRESERVATION TO IMPACT RATIO - ALTERNATIVE A

Impacted Waters	Acres[1]	Created Waters	Acres[1]	Creation to Impact Ratio
Channel/Ditch/Pond[2]	4.56	Open Water	5.11	1.1:1
Seasonal Wetland	1.70	Seasonal Wetland	13.84	8.1:1
Vernal Pool	11.23	Vernal Pool	0.00	0:1
Wetland Swale	10.08	Wetland Swale	0.00	0:1
Freshwater Marsh	0.00	Freshwater Marsh	6.10	6.1:0
Total	**27.57**		**25.05**	0.9:1

1. Totals are approximate and subject to rounding.
2. Open Water habitat types

SOURCE: ESA, 2011; Barnett Environmental, 2011.

Based upon the calculations summarized in **Table 4.6-3**, Alternative A would include on-site creation of waters of the U.S. at an approximately 0.9:1 ratio. As described in the CRAM summarized in **Section 3.6**, the onsite wetland features rate relatively lower in several ecological factors when compared to two reference sites. Furthermore, a functional assessment that was conducted for the project site indicates that many wetland features have been historically altered by past land uses, which have likely affected their functions and services over time (**Appendix L**). Therefore, the applicant is proposing to replace some wetland habitats, such as vernal pools and wetland swales, with increases in other types (such as seasonal wetlands) or the introduction of new wetland types (such as freshwater marsh), as it is anticipated that these later types will be more sustainable over time within the Plan Area. Nevertheless, without additional compensation, the on-site loss of 11.2 acres of vernal pools is considered a significant and adverse impact, as this habitat type has ecological functions and services not found in those types proposed for creation under the conceptual habitat development plan.

Mitigation Measures

Implement Mitigation Measures 4.1a: Compensate for Loss of Vernal Pool Habitat, 4.1b: Use Best Management Practices (BMPs) to Provide Effective Erosion and Sediment Control, 4. 1c: Conduct Worker Awareness Training (WEAP), and 4.1d: Limit Project Access Routes/Staging Areas.

Measure 5.1: Fully Compensate for the Loss of Waters of the U.S.: The project proponent would ensure that any loss of waters of the U.S. would be compensated for by restoration or creation of waters at a ratio no less than 1:1. For each development parcel (individual parcels are each a development parcel and infrastructure is one development parcel), compensation shall occur prior to the filling of any jurisdictional waters of the U.S. within that

development parcel. Compensation may include on or off site creation, restoration, or enhancement, or purchase of appropriate credits from a Corps-approved mitigation bank. On-site or off-site creation/restoration plans would be prepared by a qualified biologist prior to the filling of any jurisdictional waters of the U.S. and approved by the Corps. On- or off-site creation/restoration sites would be monitored for at least five years to ensure their success.

Significance after Mitigation: Less than Significant

4.5.2 Alternative B – Reduced Impact Alternative

Impact 5.1: Effects to Wetlands and Other Waters of the U.S.

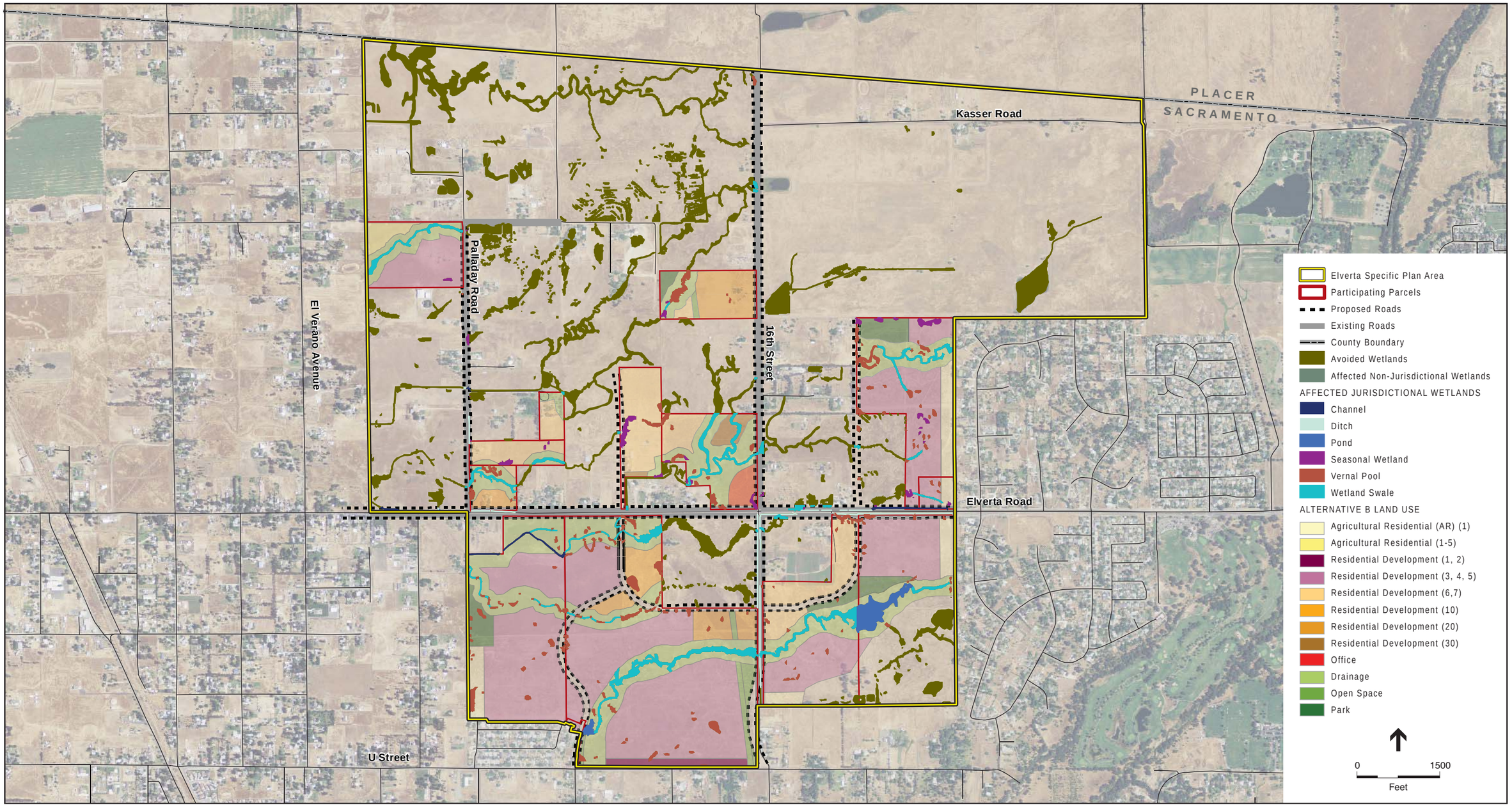
When compared to Alternative A, Alternative B would impact less waters of the U.S., as it includes some on-site avoidance. Nevertheless, approximately 22.98 acres of the 27.57 acres of jurisdictional waters of the U.S. within the participating parcels and backbone infrastructure area would still be filled under Alternative B. A discussion of non-participating parcels is included in **Section 4.16**, Cumulative Effects. Impacted features would include approximately 6.98 acres of vernal pools, 9.75 acres of wetland swales, 1.69 acres of seasonal wetland, 0.38 acre of drainage ditches, 3.80 acres of open water (pond), and 0.38 acre of ephemeral and intermittent stream channels. Potential effects associated with each land use under Alternative B are summarized in **Table 4.5-4** and **Figure 4.5-2**. The direct fill of approximately 22.98 acres of wetlands and other waters of the U.S. is considered a significant and adverse impact.

TABLE 4.5-4
EFFECTS TO WATERS OF THE U.S. - ALTERNATIVE B

Type of Jurisdictional Feature	Acres Affected	Percent Affected
Channel	0.30	47.6%
Ditch	0.46	38.7%
Pond	3.80	32.4%
Seasonal Wetland	1.69	13.9%
Vernal Pool	6.98	33.8%
Wetland Swale	9.75	25.3%
TOTAL	**22.98**	**27.0 %**

SOURCE: ESA, 2011; Barnett Environmental, 2011.

Like Alternative A, Alternative B includes on-site creation and enhancement. While a draft design plan has not been completed, the types and amounts of habitat that would be created and enhanced on the project site would be similar to that described for Alternative A, and would include on-site compensation of impacted jurisdictional waters at a 1:1 ratio. However, Alternative B



SOURCE: NAIP, 2009; ESRI, 2009; RCH Group, 2010; and ESA, 2012

Figure 4.5-2
Potential Effects to Waters of the U.S.
Alternative B – Reduced Impact Alternative

This Page is Intentionally Left Blank

would also not include any compensation for the loss of vernal pool wetland habitat. Therefore, the on-site loss of 6.98 acres of vernal pool habitat is considered a significant and adverse impact.

Mitigation Measures

Implement Mitigation Measures 4.1a: Compensate for Loss of Vernal Pool Habitat, 4.1b: Use Best Management Practices (BMPs) to Provide Effective Erosion and Sediment Control, 4.4.1c: Conduct Worker Awareness Training (WEAP), 4.1d: Limit Project Access Routes/Staging Areas, and 5.1: Fully Compensate for the Loss of Waters of the U.S.

Significance after Mitigation: Less than Significant

4.5.3 Alternative C – Approved Specific Plan with 25% Density Bonus

Impact 5.1: Effects to Wetlands and Other Waters of the U.S. (Significant)

In general, Alternative C would have similar impacts to waters of the U.S. when compared to Alternative A. Approximately 27.57 acres of jurisdictional waters of the U.S. within the participating parcels and backbone infrastructure area would be filled under Alternative C. A discussion of non-participating parcels is included in **Section 4.16**, Cumulative Effects. Impacted features would include approximately 11.23 acres of vernal pools, 10.08 acres of wetland swale, 1.70 acres of seasonal wetland, 0.46 acre of drainage ditches, 3.80 acres of open water (pond), and 0.30 acre of ephemeral and intermittent stream channels. Potential effects associated with each land use under Alternative C are summarized in **Table 4.5-5** and **Figure 4.5-3**. The direct fill of approximately 27.57 acres of wetlands and other waters of the U.S. is considered a significant and adverse impact.

TABLE 4.5-5
EFFECTS TO WATERS OF THE U.S. - ALTERNATIVE C

Type of Jurisdictional Feature	Acres Affected	Percent Affected
Channel	0.30	47.6%
Ditch	0.46	38.7%
Pond	3.80	32.4%
Seasonal Wetland	1.70	13.9%
Vernal Pool	11.23	54.7%
Wetland Swale	10.08	26.1%
Total	**27.57**	**32.4%**

SOURCE: ESA, 2011; Barnett Environmental, 2012.

When compared to Alternative A, Alternative C would include less on-site creation and enhancement. While a draft design plan has not been completed, most created habitat would be limited to open water with a fringe of freshwater marsh. This is due to the trapezoidal configuration and narrowness of the drainage corridors proposed under this alternative. Like

Alternative A, no on-site compensation for the loss of vernal pool habitat would occur. This is considered a significant and adverse impact.

Mitigation Measures

Implement Mitigation Measures 4.1a: Compensate for Loss of Vernal Pool Habitat, 4.1b: Use Best Management Practices (BMPs) to Provide Effective Erosion and Sediment Control, 4.1c: Conduct Worker Awareness Training (WEAP), 4.1d: Limit Project Access Routes/Staging Areas and 5.1: Fully Compensate for the Loss of Waters of the U.S.

Significance after Mitigation: Less than Significant

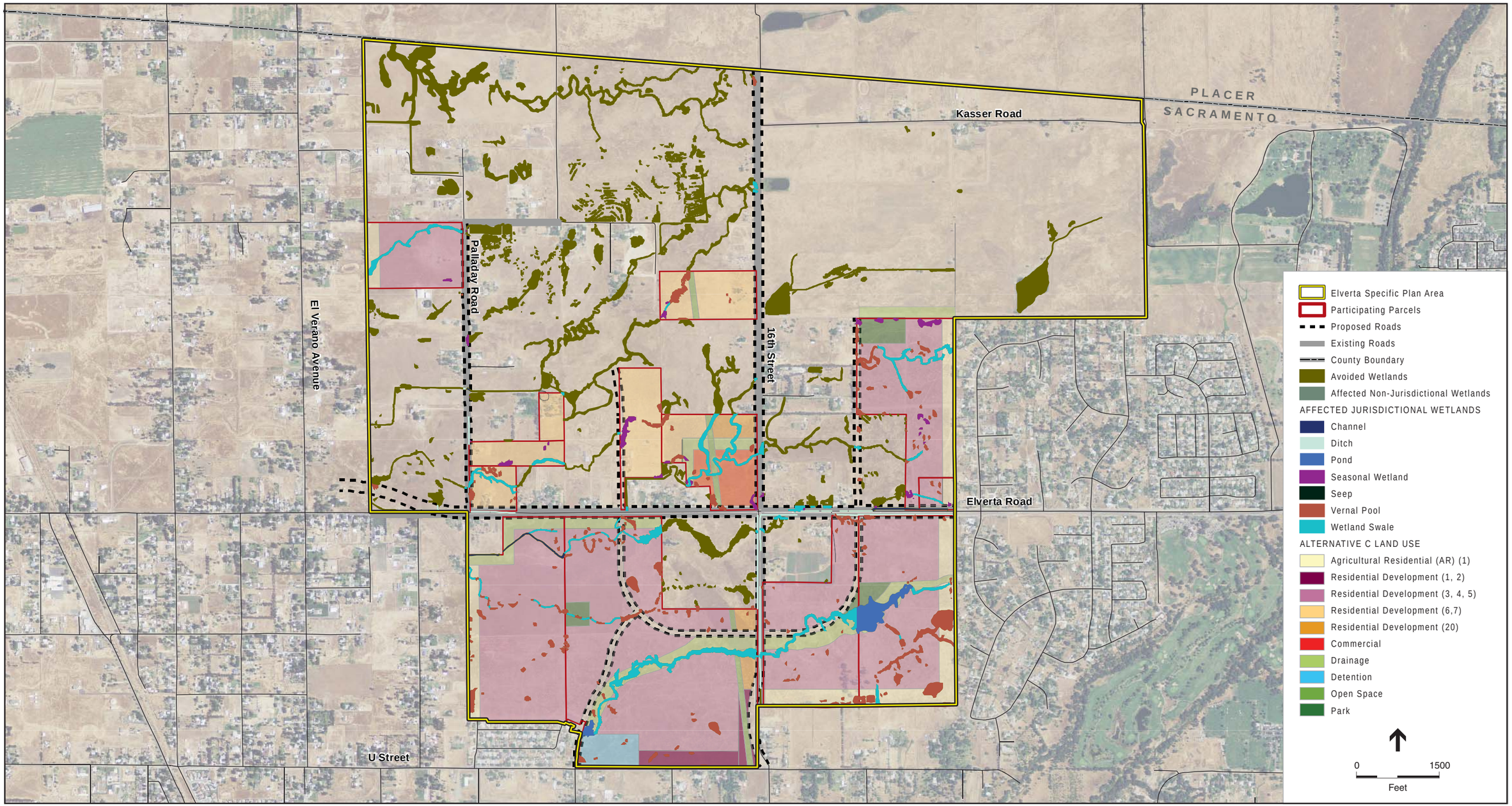
4.5.4 Alternative D – No Permit Alternative

Impact 4.5.3-1: Effects to Wetlands and Other Waters of the U.S.

No jurisdictional wetlands or other waters of the U.S. would be filled under Alternative D. While potential future development under this alternative may indirectly affect wetland habitat through stormwater runoff, no direct loss of jurisdictional features would occur. In addition, any future development on the project site would require permits and approvals from Sacramento County (including compliance with the California Environmental Quality Act [CEQA]) and possibly other federal, state and local agencies as well. No impact would result.

4.5.5 References

DERA, 2007. Final Environmental Impact Report – Elverta Specific Plan and Associated Subdivision Map Known as Countryside Equestrian Estates. County of Sacramento Department of Environmental Review and Assessment Published May 2007.



SOURCE: NAIP, 2009; ESRI, 2009; RCH Group, 2010; and ESA, 2012

Figure 4.5-3
Potential Effects to Waters of the U.S.
Alternative C – Approved Specific Plan Alternative

This Page is Intentionally Left Blank

4.6 Cultural and Historic Resources

4.6.1 Alternative A – Applicant's Preferred Alternative

Impact 6.1: Effects to Historic Properties

Archival and field inspection of the project site conducted by Peak & Associates and Sacramento Department of Environmental Review and Assessment included a records search conducted at the North Central Information Center of the California Historical Resources Information System at Sacramento State University during each phase of the cultural resources study (2000, 2004, 2006, and 2008), Native American Heritage Commission consultation, and an intensive survey of the project area during the cultural resources study completed in support of the DERA EIR. No cultural resources eligible for the National Register of Historic Places (NRHP) were identified during the field survey or records search. Based upon these findings, no historic properties would be affected by Alternative A. Thus impacts to historic properties would be less than significant.

Impact 6.2: Effects to Cultural and Paleontological Resources

Because no eligible cultural resources, including historic buildings or structures, paleontological resources, prehistoric, or historic-period archaeological sites, were identified, Alternative A would result in no impact to known cultural resources. However, there is the possibility for accidental discovery of archaeological resources during earth moving activities. The destruction or disturbance of these resources would result in a significant and adverse impact.

No known paleontological resources have been identified within the project area. However, as paleontological resources have been identified within Sacramento County, there is the potential for the accidental discovery of paleontological remains during earth moving activities within the project area. The destruction or disturbance of these resources would result in a significant and adverse impact.

The possibility of encountering human remains cannot be entirely discounted. In the unlikely event that human remains were discovered during subsurface activities, including those interred outside of formal cemeteries, the human remains could be inadvertently damaged, which could be a significant and adverse impact.

Mitigation Measures

> **Measure 6.2a: Stop Work in the Event of an Archaeological or Paleontological Discovery.** If potentially significant cultural resources, including archaeological or paleontological resources, are unearthed during construction, work would halt in that area until a qualified archaeologist or paleontologist can assess the significance of the find, and, if necessary, develop appropriate treatment measures. Prehistoric materials might include

obsidian and chert flaked-stone tools (e.g., projectile points, knives, scrapers) or toolmaking debris; culturally darkened soil ("midden") containing heat-affected rocks, artifacts, or shellfish remains; and stone milling equipment (e.g., mortars, pestles, handstones, or milling slabs); and battered stone tools, such as hammerstones and pitted stones. Historic-era materials might include stone, concrete, or adobe footings and walls; filled wells or privies; and deposits of metal, glass, and/or ceramic refuse. If the archaeologist, with concurrence from SHPO, determines that a find is not significant and the impact not adverse, construction would proceed. If any find is determined to be significant and the effects adverse, the project proponent and a qualified archaeologist would meet with USACE to determine the appropriate measures to recover or protect the resource.

Measure 6.2b: Stop Work in the Event of the Discovery of Human Remains. In the event of discovery of any human remains on the site, there would be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains until the coroner of Sacramento County has been contacted. If the coroner determines that the human remains are of Native American origin, the Native American Heritage Commission (NAHC) will be notified and the guidelines of the NAHC will be adhered to in the treatment and disposition of remains (Public Resources Code 5097).**Significance after Mitigation:** Less than significant.

4.6.2 Alternative B – Reduced Impact Alternative

Impact 6.1: Effects to Historic Properties

As described under Alternative A, no cultural resources eligible for the NRHP were identified during the field survey or records search. Based upon these findings, no historic properties would be affected by the implementation of Alternative B. Thus impacts to historic properties would be less than significant.

Impact 6.2: Effects to Cultural and Paleontological Resources

There is the possibility for accidental discovery of archaeological or paleontological resources during earth moving activities. The destruction or disturbance of these resources would result in a significant and adverse impact.

Mitigation Measures

Implementation of **Measures 6.2a** and **6.2b**.

Significance after Mitigation: Less than significant.

4.6.3 Alternative C – Approved Specific Plan with 25% Density Bonus

Impact 6.1: Effects to Historic Properties

As described under Alternative A, no cultural resources eligible for the NRHP were identified during the field survey or records search. Based upon these findings, no historic properties would be affected by the implementation of Alternative C. Thus impacts to historic properties would be less than significant.

Impact 6.2: Effects to Cultural and Paleontological Resources (Potentially Significant)

There is the possibility for accidental discovery of archaeological or paleontological resources during earth moving activities. The destruction or disturbance of these resources would result in a significant and adverse impact.

Mitigation Measures

Implementation of **Measures 6.2a** and **6.2b**.

Significance after Mitigation: Less than significant.

4.6.4 Alternative D – No Permit Alternative

Potential future development under Alternative D could result in adverse impacts related to cultural and historic resources. However, any future development under this alternative would be subject to local land use approvals and measures contained in the 2007 EIR, therefore potential impacts would be less than significant.

This Page is Intentionally Left Blank

4.7 Socioeconomics and Environmental Justice

4.7.1 Methodology

Socioeconomics

The evaluation of socioeconomic impacts is based on the development assumptions for Alternatives A, B, C and D in **Chapter 2.0**, and a review of available population, employment, and housing data from Sacramento County, the Sacramento Area Council of Governments (SACOG), the U.S. Census Bureau, California Employment Development Department and California Department of Finance. The employment assumptions for each alternative are included within **Table 4.7-1**.

Population projections are based on the Sacramento County General Plan Housing Element estimate of 2.6 persons per household in the unincorporated area of the County from 2005 to 2025 (Sacramento County, 2008). Employee projections for the alternatives are based on the SACOG Preferred Scenario Blueprint (2010). Future employment in the Sacramento region is projected to be 50 jobs per acre for commercial (i.e. retail) and 150 jobs per acre for office uses. School employment is estimated to be 20 jobs per acre (SACOG, 2010).

TABLE 4.7-1
POPULATION AND EMPLOYMENT ASSUMPTIONS FOR PROJECT ALTERNATIVES

	Alternatives			
	A	**B**	**C**	**D**
Employees				
Commercial	17.8 ac 890	14.6 ac 730	15.0 ac 750	0.0 ac 0
Office	3.7 ac 555	3.9 ac 585	4.4 ac 660	0.0 ac 0
School	19.5 ac 390	10.0 ac 200	20.2 ac 404	0.0 ac 0
Total	1,835	1,515	1,814	0
Dwelling Units Proposed	6,190	6,189	6,190	827
Residential Population Total (a)	16,094	16,091	16,094	2,150

a. Based on the estimate of 2.6 persons per household from the Sacramento County General Plan Housing Element

SOURCE: ESA, 2010; Sacramento County, 2008.

Approximate development costs were estimated for future full buildout of the project site based on typical industry cost and development standards. The development costs include both the "backbone" infrastructure and in-tract connection costs. In addition, preliminary estimates for future home and non-residential building construction were also developed. These future development costs were applied to an IMPLAN input-output model of the Sacramento County

economy to project the future County employment and economic impacts (both indirect and induced)[1] that may be expected from future buildout of the project site.

Environmental Justice

The Council on Environmental Quality's (CEQ) Environmental Justice Guidance under the National Environmental Policy Act advises agencies to consider the composition of the affected area, to determine whether minority populations, low-income populations, or Indian tribes are present in the area affected by the proposed actions, and if so, whether there may be disproportionately high and adverse environmental effects to these populations.

4.7.2 Alternative A – Applicant's Preferred Alternative

Table 4.7-2 shows the estimated total development costs for Alternatives A through D. The estimated development costs include the "backbone" infrastructure, in-tract connection costs and preliminary estimates for future home and non-residential building construction. The costs are based on conservative average costs applied to each alternatives' future planned constructed home units and buildout acreages. These "order of magnitude" cost estimates have been developed to assess the future potential socioeconomic impacts and as such are not intended to be used for other informational purposes without additional engineering and/or cost estimation review and analysis.

As shown in **Table 4.7-2**, the estimated future development cost for future full build-out of the project site is estimated to be approximately $2,595 million dollars (in 2010 dollars). The largest single cost component is the planned construction of 6,190 homes. The average development cost of each home (with supporting infrastructure) is estimated to be approximately $402,000 – of which the building construction cost would be approximately $312,000. The total development cost of the non-residential facilities (with their supporting infrastructure) is estimated to be approximately $107.4 million – equivalent to approximately 4.1 percent of the total build-out cost.

[1] The indirect effects are the additional output, jobs and income from suppliers and vendors supporting the construction. The induced effects are the expansion of local commercial businesses that result from the income re-spent by construction workers or by supplier and vendor businesses' employees.

TABLE 4.7-2
ESTIMATED INFRASTRUCTURE DEVELOPMENT COSTS [A]

Land Use [B]	Acreage	Infrastructure Cost ($0.411m/ac)	Building Cost	Total Development Cost
Alternative A				
Residential	1,353.3	$556.2	$1,931.2	$2,487.4
Commercial	17.1	$7.0	$31.3	$38.3
Office	3.7	$1.5	$9.5	$11.0
School	19.5	$8.0	$50.0	$58.0
TOTAL	**1,393.6**	**$572.8**	**$2,022.0**	**$2,594.8**
Alternative B				
Residential	1,069.9	$478.2	$1,931.0	$2,409.2
Commercial	14.6	$6.5	$26.7	$33.2
Office	3.9	$1.7	$10.0	$11.7
School	9.9	$4.4	$25.6	$30.0
TOTAL	**1,098.3**	**$490.9**	**$1,993.3**	**$2,484.2**
Alternative C				
Residential	1,432.1	$867.9	$1,931.2	$2,799.1
Commercial	15	$9.1	$27.4	$36.5
Office	4.4	$2.7	$11.3	$14.0
School	20.2	$12.2	$51.7	$63.9
TOTAL	**1,471.7**	**891.9**	**$2,021.6**	**$2,913.5**
Alternative D				
Residential	1,069.9	$960.8	$258.0	$1,218.8
Commercial	0	$0	$0	$0
Office	0	$0	$0	$0
School	0	$0	$0	$0
TOTAL	**1,069.9**	**$960.8**	**$258.0**	**$1,218.8**

A. Costs expressed in millions and 2010 dollar terms.
B. Developable acreage does not include the acreage for major roads.

SOURCES:
MacKay & Somps "Elverta Alternatives Analysis-Cost Logistics" October, 2010; ESA 2011.
Construction Cost Survey - 2010 (Sacramento, California) : http://www.realestateinvestmentcenter.com/locations/74465-california-sacramento

Impact 7.1: Temporary Increase in Local Employment and Output During Construction

Full buildout of the project site is expected to occur over a twenty year period. As shown in **Table 2-3**, the future phasing of the residential development is expected to be relatively evenly distributed over those twenty years.

The construction cost estimates shown in **Table 4.7-2** have been applied to an IMPLAN input–output model of the Sacramento County economy to estimate the future construction employment as well as indirect and induced economic impacts expected from the future construction spending associated with Alternative A. The IMPLAN model uses the most recent economic data (US Department of Commerce and Department of Labor, 2009) to quantify the interactions between firms, industries and consumers within the Sacramento economy. The IMPLAN model represents economic inter-relationships amongst County and out of County businesses to assess the "ripple"

or "multiplier" effects that economic changes (such as new construction spending) in one industry would have on other businesses that they and their workers would interact with. Briefly, the analysis produced the following estimates:

> **Direct Effects**: The output, jobs and income that are directly generated by the construction of the project.
>
> **Indirect Effects**: The additional output, jobs and incomes from suppliers and vendors supporting the construction project. These reflect the broader impacts to the economy such as expanding business amongst local vendors and suppliers.
>
> **Induced Effects**: The expansion of local commercial businesses as a result of the income re-spent by employees of the project or its supplier and vendor businesses.

Construction spending was modeled as future spending increases applied to IMPLAN Sector 37 (Construction of New Residential Structures), Sector 34 (Construction of New Nonresidential Commercial) and Sector 33 (Water, Sewage and Other Treatment and Delivery Systems).

IMPLAN projects that the employment effects of Alternative A's estimated $2,595 million in total construction expenditures would directly generate 13,861 jobs with another 6,439 indirect and 6,032 induced jobs. The result would be a total job impact of 26,332 jobs for Sacramento County over Alternative A's twenty year development period. Consequently, Alternative A's expected average annual job impact would be 693 direct new jobs with another 322 indirect and 302 induced jobs created at other County businesses.

Alternative A's $2,595 million in future development spending would generate substantial new income for Sacramento County businesses. Over the entire twenty year development period, the total new economic output directly generated within the County's economy is estimated to be $1,230 million with another $496 million of indirect new business activity and $503 million induced. The overall result would be a total economic value added impact of $2,228 million over the twenty year development period. Consequently, Alternative A's expected average annual economic impact would be $61.5 million in direct added output as well as another $24.8 million of indirect and $25.1 million induced new value added new economic output for other County businesses.

As shown previously in **Table 3.7-5**, Sacramento County's current labor force is approximately 683,100 of which approximately 13 percent (or 88,700 individuals) are unemployed. As a result, Alternative A's projected total employment impact of 1,317 new construction related jobs (i.e. conservatively including its indirect and induced jobs effects) would represent less than a 0.2 percent increase in employment. Similarly, the total annual output increase of $111.4 million would represent only a 0.17 percent increase to the County's current annual $66,454 million gross regional product. Consequently, future implementation of Alternative A would represent a beneficial impact to the Sacramento County economy.

Impact 7.2: Temporary Increase in Population and Housing Demand During Construction

As discussed above, construction of Alternative A would directly create a need for 693 new construction jobs and Sacramento County has approximately 88,700 unemployed residents. More specifically, within the Sacramento region construction employment has decreased from over 75,000 in 2006 to less than 45,000 in 2009 due to the economic downturn (Sacramento Business Review, 2010). Thus, there is a large unemployed and skilled labor force within the region which could be utilized for construction jobs for Alternative A. As a result, it may be expected that construction labor force for the project would predominantly rely on Sacramento County and other regional residents' labor. Therefore this alternative is not anticipated to create a temporary or permanent increase in population or housing demand and thus, this impact would be less than significant.

Impact 7.3: Increased Population Growth

Implementation of Alternative A would result in a direct increase in Sacramento County's population. The current population living within the project site that might be displaced is very small compared to the new residential population that would be added to the empty land parcels that would be developed for new homes and businesses.

While some residents could relocate from within the County, it is conservatively assumed that the incoming population would be new residents. Alternative A would develop approximately 6,190 dwelling units accommodating approximately 16,094 new residents (**Table 4.7-1**). As shown in **Table 3.7-4**, based on its future growth assumptions, SACOG projected that a total of 797,633 housing units would be needed within Sacramento County in 2035 which would be only a few years after Alternative A's full buildout is projected to be completed.

SACOG estimated that 291,630 additional dwelling units would be required in Sacramento County during the future planning period (2005–2035) for its Metropolitan Transportation Planning process (SACOG, 2008). As shown in **Table 3.7-4**, it is estimated that there were a total of 556,208 dwelling units within Sacramento County in 2010 and that another 241,425 new housing units still needed by 2035. Thus, Alternative A's future addition of 6,190 new houses would provide approximately 2.6 percent of the remaining units anticipated to be needed by Sacramento County by 2035. As Alternative A's increased population is consistent with planned growth assumptions, its population growth impacts would be less than significant.

Impact 7.4: Increased Housing Demand

Alternative A would have created approximately 1,835 jobs when its full buildout is completed (**Table 4.7-1**). It is anticipated that a portion (if not most) of these jobs would be filled by existing Sacramento County residents as its local labor force includes 88,300 unemployed workers (California Employment Development Department, 2010). Even if a portion of these jobs may be filled by persons who would need to relocate to the Sacramento area, Alternative A would

provide 6,180 dwelling units which would offset any housing demand from in-migrating employees. Furthermore, as shown in **Table 3.7-4** there are currently an estimated 24,473 vacant units in Sacramento County and additional vacant homes in neighboring counties such as Yolo County and Placer County (California Department of Finance, 2010). Given these factors, Alternative A is not anticipated to add new jobs to an extent that would create a significant housing demand increases within Sacramento County.

Impact 7.5: Potential Effects on Minority and Low-Income Populations

As discussed in **Section 3.7**, the project site and nearby area contains no minority or low-income populations that require environmental justice consideration. Consequently, there would be no environmental justice impacts.

4.7.3 Alternative B – Reduced Impact Alternative

Impact 7.1: Temporary Increase in Local Employment and Output During Construction

IMPLAN projects that the employment effects of Alternative B's estimated $2,484 million in total construction spending would directly generate 13,070 jobs with another 6,213 indirect and 5,719 induced jobs. The result would be a total job impact of 25,033 jobs for Sacramento County over the twenty year development period. Consequently, Alternative B's expected average annual job impact would be 654 direct new jobs with 311 indirect and 288 induced jobs created at other County businesses.

Alternative B's $2,484 million in future development expenditure would also be expected to generate substantial new business activity for Sacramento County. Over the entire twenty year development period, the total new economic output directly generated for the County economy is estimated to be $1,183 million with another $486 million of indirect new business activity and $489 million induced. The overall result would be a total economic value added impact of $2,158 million over the twenty year development period. Consequently, Alternative B's expected average annual economic impact would be $59.1 million in direct added output as well as another $24.3 million of indirect and $24.5 million induced new value added new economic output for other County businesses.

As shown previously in **Table 3.7-5**, Sacramento County's current economy labor force is approximately 683,100 of which approximately 13 percent (or 88,700 individuals) are unemployed. As a result, Alternative B's projected total construction employment impact of 1,253 new jobs (i.e. conservatively including its indirect and induced jobs effects) would represent less than a 0.2 percent increase in employment. Similarly, the total annual output increase of $107.8 million would represent only a 0.16 percent increase to the County's current

annual $66,454 million gross regional product. Consequently, future implementation of Alternative B would represent a beneficial impact to the Sacramento County economy.

Impact 7.2: Temporary Increase in Population and Housing Demand During Construction

As discussed for Alternative A, there is a significant unemployed labor force within the region which could be utilized for the construction jobs needed for future development of Alternative B. With the use of regional labor, Alternative B is not anticipated to create a temporary or permanent increase in population or housing demand and thus, this impact would be less than significant.

Impact 7.3: Increased Population Growth

Alternative B would develop approximately 6,189 dwelling units and generate approximately 16,091 new residents (**Table 4.7-1**). As discussed for Alternative A, this new housing growth would represent 2.6 percent of the remaining units anticipated to be needed by Sacramento County by 2035. This increased housing and its related population growth is consistent with planned growth assumptions, and consequently the impacts from population growth would be less than significant.

Impact 7.4: Increased Housing Demand

Alternative B would create approximately 1,515 permanent new jobs once full buildout of the planned non-commercial development is completed (**Table 4.7-1**). As discussed for Alternative A, the following factors would reduce housing demands from these new jobs: employment of the local labor force; development of 6,189 dwelling units under Alternative B; development of proposed housing elsewhere in Sacramento County; and available vacant housing in Sacramento County and neighboring counties. Given these factors, Alternative B is not anticipated to increase jobs to the extent that would create significant new housing demand within Sacramento County.

Impact 7.5: Potential Effects on Minority and Low-Income Populations

As discussed for Alternative A, the project site and nearby area contains no minority or low-income populations that require environmental justice consideration. Consequently there would be no environmental justice impact from the proposed implementation of Alternative B.

4.7.4 Alternative C – Approved Specific Plan with 25% Density

Impact 7.1: Temporary Increase in Local Employment and Output During Construction

IMPLAN projects that the employment effects of Alternative C's estimated $2,914 million in total construction spending would directly generate 16,171 jobs with another 7,155 indirect and 6,816 induced jobs. The result would be a total job impact of 30,143 new jobs for Sacramento County over the twenty year development period. Consequently, Alternative C's expected average annual job impact would be 809 direct new jobs with 358 indirect and 341 induced jobs created at other County businesses.

Alternative C's $2,914 million in future development expenditure would also generate substantial new business activity for the Sacramento County economy. Over the entire twenty year development period, the total new economic output that would be directly created for the County economy is estimated to be $1,477 million with another $567 million of indirect new business activity and $580 million induced. The overall result would be a total economic value added impact of $2,625 million over the twenty year development period. Consequently, Alternative C's expected average annual economic impact would be $73.9 million in direct added output as well as another $28.4 million of indirect and $29.0 million induced new economic output for other Sacramento County businesses.

As shown previously in **Table 3.7-5**, Sacramento County's current labor force is approximately 683,100 of which approximately 13 percent (or 88,700 individuals) are unemployed. As a result, Alternative C's projected total construction related employment impact of 1,508 new jobs (i.e. conservatively including its indirect and induced jobs effects) would represent only a 0.2 percent increase in employment. Similarly, the total annual output increase of $131.2 million would represent less than a 0.2 percent increase to the County's current annual $66,454 million gross regional product. Consequently, future implementation of Alternative C would represent a beneficial impact to the Sacramento County economy.

Impact 7.2: Temporary Increase in Population and Housing Demand During Construction

As discussed for Alternative A, there is a significant unemployed labor force within the region which could be utilized for the construction jobs needed for future development of Alternative C. With the use of regional labor, Alternative C is not anticipated to create a temporary or permanent increase in population or housing demand and thus, this impact would be less than significant.

Impact 7.3: Increased Population Growth

Alternative C would develop approximately 6,190 dwelling units and generate approximately 16,094 new residents (**Table 4.7-1**). As discussed for Alternative A, this new housing growth

would represent 2.6 percent of the remaining units anticipated to be needed by Sacramento County by 2035. This increased housing and its related population growth is consistent with planned growth assumptions for Sacramento County, and consequently the impacts from population growth would be less than significant.

Impact 7.4: Increased Housing Demand

Alternative C would create approximately 1,814 permanent jobs once full buildout of its non-residential development is completed (**Table 4.7-1**). As discussed for Alternative A, the following factors would reduce housing demands from these new jobs: employment of the local labor force; development of 6,190 dwelling units under Alternative C; development of proposed housing elsewhere in Sacramento County; and available vacant housing in Sacramento County and neighboring counties. Given these factors, Alternative C is not anticipated to increase jobs to the extent that would create significant new housing demand within Sacramento County.

Impact 7.5: Potential Effects on Minority and Low-Income Populations

As discussed for Alternative A, the project site and nearby area contain no minority or low-income populations that require environmental justice consideration. Consequently there would be no environmental justice impact from the proposed implementation of Alternative C.

4.7.5 Alternative D – No Permit Alternative

Impact 7.1: Temporary Increase in Local Employment and Output During Construction

IMPLAN projects that the employment effects of Alternative D's estimated approximately $1,219 million in total construction spending would directly generate 8,178 jobs with another 2,827 indirect and 2,948 induced jobs. The result would be a total job impact of 13,954 jobs for Sacramento County over the twenty year development period. Consequently, Alternative D's expected average annual job impact would be 409 direct new jobs with 141 indirect and 147 induced jobs created at other County businesses.

Alternative D's $1,219 million in future development expenditure would also be expected to generate substantial new business activity for Sacramento County. Over the entire twenty year development period, the total new economic output directly generated within the County's economy is estimated to be $779 million with another $238 million of indirect new business activity and $251 million induced. The overall result would be a total economic value added impact of $1,267 million over the twenty year development period. Consequently, Alternative D's expected average annual economic impact would be $38.9 million in direct added output as

well as another $11.9 million of indirect and $12.5 million induced new value added new economic output for other County businesses.

As shown previously in **Table 3.7-5**, Sacramento County's current labor force is approximately 683,100 of which approximately 13 percent (or 88,700 individuals) are unemployed. As a result, Alternative D's projected total construction related employment impact of 697 new jobs (i.e. conservatively including its indirect and induced jobs effects) would represent only a 0.1 percent increase in employment. Similarly, the total annual output increase of $63.3 million would represent less than a 0.1 percent increase to the County's current annual $66,454 million gross regional product. Consequently, future implementation of Alternative D would represent a beneficial impact to the Sacramento County economy.

Impact 7.2: Temporary Increase in Population and Housing Demand During Construction

As discussed for Alternative A, there is a significant unemployed labor force within the region which could be utilized for the construction jobs needed for Alternative D's future development. With the use of regional labor, Alternative D is not anticipated to create a temporary or permanent increase in population or housing demand and thus, its impact would be less than significant.

Impact 7.3: Increased Population Growth

Alternative D would develop approximately 827 dwelling units and generate approximately 2,150 new residents (**Table 4.7-2**). This new housing would represent less than 1 percent of Sacramento County housing units projected to be needed by 2035. Furthermore, this increased housing and its related population growth is consistent with planned growth assumptions, and consequently the impacts from population growth would be less than significant.

Impact 7.4: Increased Housing Demand

Alternative D does not include commercial or office uses which would create permanent jobs and potentially increase housing demands. Thus, Alternative D has no impact on housing demand.

Impact 7.5: Potential Effects on Minority and Low-Income Populations

As discussed for Alternative A, the project site and nearby area contains no minority or low-income populations that require environmental justice consideration. Consequently there would be no environmental justice impact from the proposed implementation of Alternative D.

4.7.6 References

California Department of Finance, 2010. State of California, Department of Finance, E-5 Population and Housing Estimates for Cities, Counties and the State, 2001-2010, with 2000 Benchmark. Sacramento, California, May 2010. Available online at: http://www.dof.ca.gov/research/demographic/reports/estimates/e-5/2001-10/documents/E-5_2010.xls>. Accessed October 10, 2010.

California Employment Development Department, 2010 Labor Market Information for Sacramento County. Available online at: http://www.labormarketinfo.edd.ca.gov/. Accessed October 10, 2010.

Sacramento Area Council of Governments (SACOG), 2008. Housing Estimates – Housing Growth and Distribution 2005-2035 by Jurisdiction. Available online at: http://www.sacog.org/about/advocacy/pdf/fact-sheets/HousingStats.pdf. Accessed March 1, 2011.

Sacramento Business Review, 2010. *Sacramento's Labor Market & Regional Economy: 2010 Outlook*. January 2010. Available online at: http://www.cba.csus.edu/SBR2010/PDF/SBR_Econ_Outlook_2010.pdf. Accessed September 30, 2010.

Sacramento County, 2008. Sacramento County Housing Element 2008-2013. Adopted December 2008. Available online at: http://www.msa2.saccounty.net/planning/Pages/SacramentoCountyHousingElement.aspx. Accessed October 10, 2010.

This Page is Intentionally Left Blank

4.8 Geology, Soils, and Mineral Resources

4.8.1 Alternatives A, B, C, D

Impact 8.1: Topography and Unique Features

Although implementation of the Specific Plan would result in changes to the topography of the site, this is considered a less than significant impact. There are no unique geologic features on the site so there is no potential for loss of significant physical features. This impact would be less than significant for all Alternatives.

Impact 8.2: Geologic Hazards and Seismic Safety

Soils with high percentages of clays expand and contract with wetting and drying of the soils. The pressure exerted by the expanding soils is sufficient to break foundations. Development in the area would expose people and property to mild geologic hazard in that the high shrink-swell potential of the soils could result in future damage to structures. This impact is considered less than significant because standard construction practices address this issue.

Groundshaking as a result of earthquakes in other areas being felt at this location could result in damage to buildings and potentially injury to occupants. This impact is considered less than significant because standard construction requirements, including the Uniform Building Code, address this concern.

The potential for anything more than minimal problems due to structural failure of the underlying materials is considered less than significant, because the potential for liquefaction is low due to the cohesive nature of the soils. This impact would be less than significant for all Alternatives.

Impact 8.3: Mineral Resources

Planned growth and development in the area will preclude the mining and recovery of potential mineral resources (such as aggregates) in the Plan area. This impact is considered less than significant because the Sacramento County General Plan does not identify the site as a high quality mineral resource area. This impact would be less than significant for all Alternatives.

Impact 8.4 Soil Erosion

Construction would remove vegetation and disturb the soil surface, thereby increasing the erosion rate and the availability of sediments for transport on- and off-site. Increased and concentrated runoff could also increase erosion rates along drainage channels. Increased quantities of sediment add to sedimentation in storm sewers and natural watercourses. Sediments reduce the capacity to carry storm waters and contribute to degraded aquatic habitats.

Because development projects are already subject to the County Land Grading and Erosion Control Ordinance and the State Water Resources Control Board stormwater permitting requirements, erosion control measures and sediment control measures will be required of each subsequent Specific Plan development project as a matter of course. No further mitigation is necessary. This impact would be less than significant for all Alternatives.

4.9 Hazards and Hazardous Materials

This analysis considers the range and nature of foreseeable hazardous materials use, storage, and disposal resulting from implementation of the project alternatives and identifies the primary ways that these hazardous materials could potentially expose individuals or the environment to health and safety risks. Information in this section is also based on the EIR for the Plan area prepared by the County of Sacramento Department of Environmental Review and Assessment (DERA, 2007); an Environmental Site Assessment of the Elverta Specific Plan Area by Wallace-Kuhl Associates (WKA, 1999); an updated 2011 Environmental Data Records (EDR) Radius Map™ Report with GeoCheck® (EDR, 2011), and digital files related to the Monroe Landfill obtained from the Sacramento County Environmental Management Department in 2011.

The information obtained from these sources was reviewed to evaluate the significance of potential environmental effects. In determining the level of significance, the analysis assumes that project development would comply with relevant federal, state, regional, and local ordinances and regulations.

4.9.1 Alternative A – Applicant's Preferred Alternative

Impact 9.1: Exposure to Asbestos and/or Lead-Based Paint during Construction

The age of on-site structures indicates the potential presence of asbestos-containing building materials and lead-containing materials (e.g., paint, and sealants, pipe solder), which could become friable or mobile during demolition activities and come into contact with construction workers, resulting in a health hazard. Potential project-related exposure of humans and the environment to asbestos containing materials (ACMs) and materials containing lead is considered a significant and adverse impact.

Mitigation Measure

> **Measure 9.1:** Conduct pre-demolition building surveys for hazardous materials and implement all applicable regulations.
>
> **Significance after Mitigation:** Less than significant

Impact 9.2: Construction Hazards

Construction of the Plan area is anticipated to occur for approximately twenty years. Construction would require substantial grading of the Plan area and development of new residences, commercial buildings, offices, parking lots, roadways, and other infrastructure. Construction could result in some disruption of the surrounding residential and commercial uses and occur in proximity to existing development, including residences. This impact is considered significant and adverse.

Mitigation Measure

> **Measure 9.2:** Establish fenced construction staging areas during each phase of Plan area development. These fenced staging areas would be used for storage of vehicles, equipment, materials, fuels, lubricants, and solvents. The stockpiling or vehicle staging areas would be identified in the improvement plans and would be located as far as practical from developed land uses.
>
> **Significance after Mitigation:** Less than significant

Impact 9.3: Storage, Use, and Transport of Hazardous Materials

Development of the Plan area would involve the storage, use, and transport of hazardous materials (e.g., asphalt, fuel, lubricants, and solvents) during construction and demolition activities. In addition, commercial uses associated with project operation could include facilities that use and routinely transport hazardous materials on and off the project site. Impacts include the typical use and transport of hazardous materials during construction activities or future commercial operations in the Plan area that use, store, or transport hazardous materials. Transportation of hazardous materials on area roadways is regulated by the California Highway Patrol and the California Department of Transportation, and use of these materials is regulated by DTSC, as outlined in Title 22 of the CCR. The project applicant(s), builders, contractors, business owners, and others would be required to use, store, and transport hazardous materials in compliance with federal, state, and local regulations during project construction and operation. Facilities that would use hazardous materials on-site after the project is constructed would be required to obtain permits and comply with appropriate regulatory agency standards designed to avoid releases of hazardous wastes. Because the project would implement and comply with existing hazardous-materials regulations, it is unlikely that impacts related to creation of significant hazards to the public through routine transport, use, disposal, and risk of upset would occur with project development. Therefore, this impact is considered less than significant.

Impact 9.4: Exposure to Hazards from the Monroe Landfill

The Monroe Landfill (APN 202-0070-024) is a non-participating parcel, and the history of the Monroe Landfill is described in **Section 3.9** (Hazards and Hazardous Materials) of this EIS. While the Monroe Landfill is a non-participating parcel, it does contain potentially hazardous materials that could have effects on participating parcels.

The landfill is 5 acres and located within a 20± acre parcel at 8784 Palladay Road. The Monroe Landfill was a municipal solid waste landfill that received wastes in the 1950's. Reports indicate that the landfill did not receive hazardous wastes. The landfill was operated as a burn dump but was later converted to a trench and fill landfill operation (JHC, 2004). The Monroe Landfill has

been inactive since the late 1950's. The landfill site has an estimated volume of 5,000 tons of domestic waste contained within a five-acre area on a 20-acre parcel. The landfill has a depth of 12 to 15 feet based on reviewed documents. Groundwater is known to be approximately 85 feet bgs (below ground surface).

The Monroe Landfill has not been required to achieve official closure status since it stopped receiving waste prior to 1976 (when closure regulations were adopted), and it is not known to pose a current threat to human health and safety or the environment. Potential impacts associated with historic landfilling activities include landfill gas generation, soil contamination, and groundwater contamination.

The Monroe Landfill has not been directly tested for hazards from on-site surveys (access has not been granted for testing), but the area around the Monroe Landfill have been tested for migrating gas (methane) and groundwater contamination (JHC, 2004). Only low levels of methane and groundwater contamination have been found in the monitoring wells developed on adjacent parcels.

JHC sampled nine gas monitoring probes near the landfill in March and May of 2004. Methane was observed in all nine gas probes, but all observed levels were below 1,100 ppm-v (or parts per million by volume), well below the 5% methane (50,000 ppm-v) regulatory limit for perimeter gas probes at closed landfills. The LEA recommended further monitoring for any proposed development within 1,000 feet of the landfill until shown to be not affected by landfill gas at all times, and/or provision of continuous protection from landfill gas accumulation such as passive gas collection and impervious membrane layers on all construction.

JHC sampled water quality in four new monitoring wells and one existing domestic water supply well in the landfill vicinity. The monitoring wells were installed in the uppermost portion of the regional groundwater system. JHC concluded that the risks associated with impacts to the water supply are low. The wells were analyzed for dissolved metals, inorganic parameters, and volatile organic compounds (VOCs). VOCs were found in only one well (MW-1), and at trace levels below reporting levels. The majority of inorganic and dissolved metal parameters in the samples appear to be within a natural range. Well MW-1 showed slightly elevated concentrations in total dissolved solids (TDS), chloride, and calcium when compared to the other wells. These detections are likely related to landfill gas impacts on groundwater and not leachate. All of the water quality levels observed are below primary MCLs (maximum contaminant levels), which are health-based water quality standards. The secondary (aesthetic, non-health based) standard for TDS was exceeded slightly for MW-1. The domestic water supply well samples were of excellent quality.

Monroe Landfill is considered by Sacramento County to be a "low priority" for further assessment. The 2007 EIR expected that the County will continue to annually inspect the facility for potential nuisance and/or accessibility concerns, such as checking for "midnight dumping" at the site or looking for potential breaches in the landfill cover and/or perimeter fencing around Monroe Landfill. CalRecycle and the LEA staff conducted the most recent annual site inspection on November 8, 2010, finding no violations (CalRecycle, 2010).

As indicated above, the Monroe Landfill parcel is not a participating parcel, and Alternative A would have minimal development in the vicinity of the Monroe Landfill. None of the parcels adjacent to the Monroe Landfill are participating parcels. However, consistent with the finding in the 2007 EIR, participating parcels within 1,000 feet of the boundaries of the Monroe Landfill property could be a risk from landfill gas (methane) migrating from the landfill. This is a significant and adverse impact.

Mitigation Measures

> **Measure 9.4:** Prior to any development (including construction of buildings or other improvements, installation of infrastructure/utilities, grading activities, etc.) on properties located within 1,000 feet of the boundaries of the 20± acre Monroe Landfill property (APN 202-0070-024) either: (a) conduct a landfill gas assessment to determine whether these surrounding properties have been affected by the migration of landfill gas from the Monroe Landfill and/or (b) provide continuous protection from landfill gas accumulation such as passive gas collection and impervious membrane layers on all construction, as deemed necessary by the Sacramento County Environmental Management Department, Environmental Health Division, Local Enforcement Agency (LEA) for the protection of public health and safety and the environment. [2007 EIR Mitigation Measure LA-5]
>
> **Significance after Mitigation:** Less than significant

Impact 9.5: Exposure to Contaminated Soils from Agricultural Activities

WKA conducted an extensive review of past agricultural practices as part of their site assessment for the entire Plan area (WKA, 1999). Based on review of past agricultural uses and practices, the site assessment found low potential for significant residual agricultural chemical concentrations to exist in the vast majority of surface soils. Two exceptions were be the possibility that DDT, lindane and/or other persistent pesticides may have been used around historic hog/poultry sites for fly control or applied to historic orchard uses. WKA recommended testing for potential soil contamination and implementation of soil remediation measures, if needed, for these areas prior to site development. This impact is significant and adverse.

Mitigation Measure

> **Measure 9.5:** All future development proposals on portions of the Elverta Specific Plan area that are known to have supported livestock (cattle, hogs, poultry, etc.) holding areas or orchard land uses prior to the 1970's, shall implement a soil sampling and analysis program for organochlorine pesticides (i.e. DDT and toxaphene). In addition, orchard areas shall also include tests for arsenic and lead.
>
> Specific Plan area parcels that are known to have historically supported livestock holding areas include the following APNs:
>
> - 202-0080-052

- 202-0170-004
- 202-0170-005
- 203-0010-013
- 203-0040-021

Parcels that are known to have historically supported orchard land uses include the following APNs:

- 202-0070-006
- 202-0080-020 (Participating Parcel)
- 202-0080-057
- 202-0080-058 (Participating Parcel)
- 202-0170-019 (Participating Parcel)
- 203-0040-003
- 203-0040-004
- 203-0040-050

Prior to implementation, the soil sampling and analysis program shall be approved by a toxicologist from the Cal-EPA, Office of Environmental Health Hazard Assessment (OEHHA) or other qualified professional (i.e., California Registered Environmental Assessor (REA II)). The soil sampling results shall be submitted to the Cal-EPA, Department of Toxic Substances Control (DTSC), for a determination of whether detected concentrations of the sampled substances fall within acceptable health risk guidelines and, if they do not, the remedial measures that must be implemented to ensure the protection of human health. Prior to grading or construction activities, individual project proponents shall implement any measures required for the remediation of contaminated soils to protect human health. [2007 EIR Mitigation Measure TX-2]

Significance after Mitigation: Less than significant

Impact 9.6: Contamination from Improperly Abandoned Wells and Septic Systems

Numerous water supply wells are located within the Plan area. The 2007 EIR did not attempt to compile an inventory of existing wells since not all sites were accessible during survey work. It was obvious, however, that at least several wells within the Plan area were improperly abandoned. All water supply wells within the Plan area should be properly destroyed when their use ceases. This procedure requires a well abandonment permit (issued on a per-well basis) from the Sacramento County Environmental Management Department, Environmental Health Division. Large-diameter (old hand-excavated) wells in the Plan area, in addition to requiring a permit for well abandonment, should be backfilled in accordance with the recommendations of a qualified geotechnical engineer. Additionally, existing septic tanks, leach lines and cisterns within the Plan area should be removed and/or their locations backfilled in accordance with the

recommendations of a geotechnical engineer, if their uses are discontinued. Without proper abandonment this impact is considered significant and adverse.

Mitigation Measure

> **Measure 9.6** All water supply wells, septic tanks, leach lines and cisterns within the project area should be properly destroyed when their use ceases; this procedure requires a well abandonment permit (issued on a per-well basis) from the Sacramento County Environmental Management Department, Environmental Health Division. Large-diameter (old hand-excavated) wells, in addition to requiring a permit for well abandonment, should be backfilled in accordance with the recommendations of a qualified geotechnical engineer. [2007 EIR Mitigation Measure TX-4]
>
> **Significance After Mitigation:** Less than significant.

4.9.2 Alternative B – Reduced Impact Alternative

The same mitigation measures for Alternative A would apply to implementation of Alternative B.

4.9.3 Alternative C – Approved Specific Plan with 25% Density Bonus

The same mitigation measures for Alternative A would apply to implementation of Alternative C.

4.9.3 Alternative D – No Permit Alternative

Potential future development under Alternative D could result in adverse impacts related to hazards and hazardous materials. However, any future development under this alternative would be subject to local land use approvals and those measures contained in the 2007 EIR, therefore potential impacts would be less than significant.

4.9.4 References:

CalRecycle, 2010. Closed Disposal Site Inspection Report, performed November 8, 2010.

DERA, 2007. Final Environmental Impact Report – Elverta Specific Plan and Associated Subdivision Map Known as Countryside Equestrian Estates. County of Sacramento Department of Environmental Review and Assessment Published May 2007.

Elverta Specific Plan Area Preliminary Site Assessment, Wallace-Kuhl Associates, August 1999.

Environmental Data Reports (EDR), 2011. Environmental Data Records (EDR) Radius Map™ Report with GeoCheck®, Elverta Road/16th Street, Elverta, CA 95626.

Jacobson Helgoth Consultants, Inc., 2004. Physical and Hydrogeological Investigation report for the Elverta Landfill prepared for Elverta Specific Plan Owners Group

State Water Resource Control Board (SWRCB), 2011a. Geotracker records search accessed on-line January 5, 2011 at: http://geotracker.swrcb.ca.gov/map/?CMD=runreport&myaddress=8784+palladay+road%2C+Sacramento%2C+ca

State Water Resource Control Board (SWRCB), 2011b. Geotracker records search accessed on-line January 5, 2011 at: http://geotracker.swrcb.ca.gov/map/?CMD=runreport&myaddress=8784+palladay+road%2C+Sacramento%2C+ca

Wallace-Kuhl Associates (WKA), 1999. Environmental Site Assessment Elverta Specific Plan Area, August 19, 1999.

This Page is Intentionally Left Blank

4.10 Hydrology, Flooding and Water Quality

The effects of the proposed alternatives relative to hydrology, flooding, and water quality are presented in this section. Specifically, these effects are described for surface water and water quality.

4.10.1 Alternative A – Applicant's Preferred Alternative

Impact 10.1: Impacts to Water Quality

Alternative A would result in the installation of housing, retail/commercial buildings, schools, parks, and various other facilities, consistent with single-use and mixed-use development. Alternative A would also include modifications to on-site hydrology, including removal of some vernal pools and realignment and consolidation of on-site drainages into centralized waterways meant to provide water conveyance and volume capacity during high flow periods, as well as enhanced drainage, ecosystem, and recreational function. As a result of these proposed changes, water quality could be affected in several different ways. These are reviewed below.

Construction-Related Water Quality Pollution

Construction of Alternative A would include the use of heavy equipment for grading, trenching, laying of pipe, construction of roads, installation of buildings, and installation of other proposed facilities. Equipment may include bulldozers, graders, earth movers, heavy trucks, trenchers, and various other machinery. Potential pollutants associated with the use of construction machinery could include, but would not be limited to, spilled fuels, oil, lubricants, antifreeze, or hydraulic fluid. Also, the use of heavy machinery would disturb surface sediments. During storm events, these potential pollutants, including sediment, could become entrained in stormwater runoff, and be transported into onsite waterways and transported downstream or offsite. As a result, water quality could be reduced along downstream waterways, including the Sacramento River.

As a condition of construction, the project proponent would be required to obtain a National Pollutant Discharge Elimination System (NPDES) General Construction Permit for Discharges of Stormwater Associated with Construction Activities (NPDES General Stormwater Permit), under the Central Valley Regional Water Quality Control Board (CVRWQCB). Conditions of this permit would include adherence to requirements of the revised NPDES General Permit, effective July 1, 2010. Permit requirements would include:

- Preparation of hazardous material spill control and countermeasure programs;
- Stormwater quality sampling, monitoring, and compliance reporting;
- Development and adherence to a Rain Event Action Plan;
- Adherence to numeric action levels and effluent limits for pH and turbidity; monitoring of soil characteristics on site;
- Mandatory training under a specific curriculum; and

- Mandatory implementation of BMPs, which may include, but would not be limited to:
    - Physical barriers to prevent erosion and sedimentation including setbacks and buffers, rooftop and impervious surface disconnection, rain gardens and cisterns, and other installations;
    - Construction and maintenance of sedimentation basins;
    - Limitations on construction work during storm events;
    - Use of swales, mechanical, or chemical means of stormwater treatment during construction, including vegetated swales, bioretention cells, chemical treatments, and mechanical stormwater filters; and
    - Implementation of spill control, sediment control, and pollution control plans and training.

The specific BMPs to be implemented would be determined prior to issuance of the NPDES General Permit, in coordination with the CVRWQCB. The revised permit requires preparation of a stormwater pollution prevention plan (SWPPP) that contains the Best Management Practices (BMPs) required for the project. Adherence to these BMPs would be required as a condition of the permit, and would substantially reduce or prevent waterborne pollutants from entering natural waters, per CVRWQCB standards. The updated permit also requires the implementation of habitation period stormwater quality control BMPs, such as permanent vegetated swales and other BMPs, that would be maintained and utilized during the habitation period. Additionally, all construction and project design criteria would be required to adhere to the Sacramento County Stormwater Management Program and the Sacramento County stormwater ordinances, as discussed in **Section 3.10, Hydrology, Flooding, and Water Quality**. Implementation of these mandatory measures would be adequate to ensure that stormwater quality is not degraded as a result of implementing Alternative A. Therefore, these impacts would be less than significant.

Stormwater Quality of Runoff from New Impervious Surfaces and Other Urban Uses

During dry periods, parking lots, roads, roofs, and other impervious surfaces and other urban areas collect sediment, dust/dirt, grease, oil, brake dust, trash, and other potential water quality pollutants. At the onset of wet weather, these pollutants can become entrained in stormwater, which is channeled into drainages and storm sewers, and ultimately discharged to natural waters downstream. Without proper stormwater control and stormwater quality management measures, these pollutants can reach downstream natural waters, and result in water quality degradation.

Landscape management practices under Alternative A could also affect water quality. For instance, maintenance of landscaping in park areas, residential areas, and other landscaped areas relevant to Alternative A would typically include the application of fertilizers, herbicides, and pesticides. Unless use and application of these chemicals is carefully managed, they could become entrained in stormwater or irrigation water discharges, causing significant downstream water pollution along downstream waterways.

The updated Drainage Management Plan (**Appendix A**) would include measures to minimize potential impacts to water quality via implementation of Low Impact Development (LID) measures, Best Management Practices (BMPs), point of discharge water quality treatment basins,

and vegetated swale discharges. Specific LID measures that would be implemented for individual projects under the specific plan have not yet been explicitly defined. LID techniques that would be employed may include, but would not be limited to, use of green infrastructure, conservation design, and sustainable stormwater management practices. These would be employed under the Phase 1 Sacramento Areawide NPDES Stormwater Permit (Phase 1 Stormwater NPDES Permit). The specific LID, BMPs, and other measures employed would be determined during the permitting process. However, the measures employed would be required to meet the minimum requirements of the Phase 1 Stormwater NPDES Permit, including deployment of measures to reduce urban runoff pollution from the proposed development to the maximum extent practicable (MEP), in accordance with federal, state, and local standards. Additionally, adherence to the conditions of the recently revised General NPDES Permit for Construction, which includes requirements for the installation and upkeep of habitation period BMPs, as discussed previously, would be required. Implementation of the proposed water quality control measures, including adherence to permitting conditions for the Phase 1 Stormwater NPDES Permit and the General Construction NPDES Permit would be adequate to ensure that stormwater quality is not degraded as a result of implementing Alternative A. Therefore, these impacts would be less than significant.

Wastewater Discharge

As discussed in **Chapter 2.0, Alternatives**, wastewater from Alternative A would be piped to the Sacramento Regional County Sanitation District (SRCSD) Wastewater Treatment Plant (WWTP), located west of Elk Grove. Potential impacts surrounding the availability of sufficient capacity at the WWTP, and other related infrastructure issues, are addressed in **Section 4.13**. The quality of effluent discharge from the SRCSD WWTP is carefully regulated, under NPDES number CA0077682. As such, any potential increase in wastewater treatment flows associated with Alternative A would be subject to treatment that meets, at a minimum, these existing regulatory levels for water quality. Also, as discussed in greater detail in **Section 4.13,** the SRCSD WWTP is projected to have available capacity to meet wastewater treatment requirements for Alternative A. Therefore, implementation of the Alternative A is not anticipated to result in a reduction in the quality of wastewater discharged from the SRCSD WWTP, and would not result in a reduction in water quality downstream, along the Sacramento River or Delta. Therefore, these impacts would be less than significant.

Impact 10.2: Changes in Drainage and Flooding Patterns

Alternative A would result in changes to existing on site drainage and flooding patterns as a result of three categories of proposed activities: (1) alteration of on-site waterways; (2) permanent changes due to proposed grading and earth moving during the construction process; and (3) an increase in the area of impervious surfaces on site. These are treated in the following text.

Alteration of Waterways

Installation and operation of the proposed facilities would result in removal and/or realignment of many of the existing drainages located on site, which are eventually tributary to the Sacramento

River. In lieu of these existing drainages, implementation of the updated Drainage Management Plan (Appendix A) would involve redesign of the larger on-site waterways to provide multi-function open space corridors. The multi-function corridors would provide stormwater drainage conveyance, flood control, and water quality treatment. Flood control measures would be integrated into corridor design, as would flow duration control for stormwater runoff during smaller events.

Conceptual layouts for the proposed drainage corridors include a centralized low flow channel flanked by seasonal freshwater marsh. Continuing outward from the marsh would be a seasonal wetland, followed by a bench formation area containing riparian habitat. Finally, a sloped drainage corridor bank would contain flood flows, with oak, grassland, and trail areas at the top of the bank. The proposed drainage corridors include a series of in-line cross channel berms that span the width of the corridors, with notches of varying dimensions. These allow flow to pass during storm events, but at a reduced rate. Additional runoff control features would be integrated into major road crossings. Additional detention basins have been included, in order to minimize the potential for altered hydrology to occur downstream as a result of smaller scale storms, under Alternative A. Implementation of these measures has included the widening of proposed channels, in comparison to previously completed (and now outdated) drainage plans in support of Alternative A.

These proposed stormwater management/hydromodification measures would be implemented instream. The proposed cross channel berms would attenuate frequently occurring storm events. The cross channel berms would discharge runoff into downstream drainages through the openings in the berms. Additionally, the width and gentle slope of the proposed drainage corridors would cause runoff to flow very slowly through the channels, further reducing erosion potential and increasing hydrologic concentration times within the affected section of the watershed.

Additional stormwater retention capacity would be provided by via installation of proposed LID features, which would be required pursuant to the Phase 1 Stormwater NPDES Permit requirements, as discussed previously. With respect to stormwater control, LID design measures seek to replace conventional engineered conveyances and detention ponds with the use of natural vegetation and small scale treatment systems. These systems mimic natural conditions by retarding, treating, and evaporating stormwater near its point of origination. Note that low permeability soils on site minimize the applicability of LID measures in support of infiltration. Still, incorporating LID design would reduce imperviousness in comparison to non-LID designs, and supports stormwater retention on site, prior to discharge into the proposed drainage corridors. These effects reduce volume and velocity of concentrated flows, thereby reducing potential for increases in erosion, sedimentation, and flooding.

Hydrologic modeling was completed in support of Alternative A, which evaluated the conceptual project design with respect to the proposed stormwater control measures discussed above (refer to Appendix A). The hydrologic modeling was completed in accordance with current Sacramento City/County Drainage Manual (Volume 2), Hydrology Standards. Runoff conditions for existing and developed conditions were calculated using the Sacramento Calculator (SacCalc) with what is commonly referred to as "the Sacramento Method", in combination with the HEC-

RAS hydrologic model. Design storms for the 2-, 10-, and 100-year recurrence interval were modeled.

Results from the model indicate that overall, implementation of Alternative A would result in an overall net decrease in flows emanating from the Action Area. As shown in **Table 4.10-1**, Alternative A would result in a net decrease in most drainage corridors, with the overall effect of reduced flows in comparison to existing conditions, during 2, 10, and 100-year events.

TABLE 4.10-1
EXISTING AND MODELED STORMWATER AND FLOOD FLOWS

	100-Year Flow (cfs)		10-Year Flow (cfs)		2-Year Flow (cfs)	
Location	**Existing**	**Developed**	**Existing**	**Developed**	**Existing**	**Developed**
Northern Sheds						
B-2	296	311	176	187	79	87
600 UP	27	39	16	23	7	10
702 UP	29	41	16	25	7	11
A	101	57	59	48	26	17
Corridor B						
Loop Road	185	102	76	73	44	42
Non-Participant	198	107	70	73	45	43
Palladay Road	177	92	75	68	49	8
Downstream Compliance	182	138	77	90	50	9
Corridor C						
Loop Road	197	205	118	152	59	47
16th Street	256	211	144	124	48	53
Downstream Berm	418	348	214	184	111	79
Downstream Compliance	397	322	215	188	112	77
Offsite Elverta Road	386	275	206	184	114	77
Corridor D						
Downstream Culvert	152	62	85	36	56	16

SOURCE: Appendix A

Project Phasing

It is anticipated that Alternative A would be implemented in phases, as discussed in Chapter 2, Alternatives. The issue of phasing is addressed in the Draft Storm Drainage Master Plan (Appendix A). The storm drainage improvements proposed in the Draft Storm Drainage Master Plan were designed in consideration of anticipated phasing. Therefore, drainage corridors were designed so as to function in perpetuity on a stand-alone basis, even if non-participating properties are never developed. The Draft Storm Drainage Master Plan applies several corridor-specific measures to ensure that drainage corridors would be functional even in consideration of phasing. These are detailed by corridor in Appendix A, and are summarized in the following list:

- Design and installation of temporary, project-specific detention and water quality treatment basins to mitigate development impacts from individual parcels or groups of parcels;
- Installation of temporary or permanent discharge structures that to enable discharge at existing grades downstream;
- Implementation of LID measures (as discussed previously);
- Sizing of culverts so as to handle anticipated peak flows;
- Select and temporary armoring of grade differentials near intersections;
- Realignment and/or removal of historic/existing drainage improvements;
- Avoidance of select existing vernal pools;
- Installation of cross-channel, notched berms; and
- Specific culvert and intersection improvements.

Implementation of each of these measures would require acquisition of approval from the Sacramento County Department of Water Resources. Prior to issuing grading permits, the County would review applicant plans and ensure that all proposed facilities and designs would meet applicable County regulatory standards with respect to stormwater and water quality management. Additionally, prior to the submittal of any tentative parcel maps, the Applicant will be required to submit a Conditional Letter of Map Revision (CLOMR) to FEMA. Prior to placement of any fill within the mapped 100-year floodplain, the Applicant will be required to process a CLOMR with FEMA for the proposed 100-year floodplain conditions. FEMA would thereby ensure that the proposed modifications would meet minimum federal requirements regarding flood control and flood management through its CLOMR process. Therefore, adherence to the conditions of County and federal permitting would ensure that all proposed drainage and flood control modifications, even under phasing, would meet all applicable laws and standards.

Grading and Construction

Construction of Alternative A would also involve operation of heavy equipment, stockpiling of spoils, grading, installation of pipelines, and other activities that would alter existing topographic and drainage features located on site. Alteration of topographic and drainage features would result in altered drainage patterns on site. Compaction of soils by heavy equipment could decrease the infiltration rates for surface sediments, causing increased runoff. This could in turn result in changes to drainage located on site. Unless properly managed, these changes could result in altered or increased flooding on site and downstream.

Impervious Surfaces

Finally, asphalt, roofs, sidewalks, concrete surfaces, and other surfaces prevent the natural drainage and infiltration of stormwater through soil. Surface water runoff has a greater volume and rate when the site is paved or otherwise covered by an impervious surface, because surface water infiltration rates are reduced or eliminated compared to undeveloped, unpaved areas. As a result, increases in impervious surfaces result in increased surface runoff volumes and peak flow rates. These can in turn produce considerable changes to downstream hydrology, as compared to

pre-development conditions, resulting in increased or exacerbated flooding on site or downstream, such as by exceeding existing or proposed drainage system capacities. The anticipated potential increases in impervious surfaces were considered within the hydrologic modeling scenarios, as described under ***Alteration of Waterways*** above.

The measures proposed in support of Alternative A, including measures to offset changes in flows and streambed modifications, construction related grading changes, and increases in anticipated impervious surface coverage, would be offset as described previously. However, the drainage plan completed in support of Alternative A provides a conceptual, design level analysis. In order to ensure that potential impacts to drainage and hydrology on site are minimized, an additional investigation would be required, in order to delineate specific locations and provide engineering level designs for the proposed facilities to be implemented. Without a coordinated detailed framework, potential drainage and hydrology related impacts could be significant and adverse.

Mitigation Measure

> **Measure 10.2: Comprehensive Drainage Plan.** In order to ensure that the proposed development would not result in detrimental increases in stormwater flow or flooding on site or downstream, prior to construction, the project proponent shall prepare and adhere to the recommendations of a Comprehensive Drainage Plan. The comprehensive drainage plan shall provide engineering design level plans and implementation procedures for all proposed facilities, including proposed channels, stormwater retention facilities, storm drainage facilities, and other features needed to ensure no net increase in stormwater discharge under 2-year, 10-year, and 100-year storm events, as a result of project implementation. Project related increases in stormwater flows shall be assessed based on proposed changes in impervious surface coverage within areas where proposed facilities would be implemented, as well as proposed grading and related changes in site topography.
>
> With respect to Alternative A only, adherence to the design features and drainage characteristics contained in the Storm Drainage Master Plan (Appendix A) would satisfy, in part, these mitigation requirements. However, engineering level design of the proposed drainage infrastructure would be required for compliance with this mitigation measure and also in support of County grading permits.
>
> **Significance after Mitigation:** Less than significant.

Impact 10.3: Development within Floodplains; Interference with Flood Flows

As discussed in **Section 3.10, Hydrology, Flooding, and Water Quality**, only an approximately 10-acre portion of Alternative A is located within a Federal Emergency Management Agency (FEMA)-defined floodplain. Comparison of **Figure 2-1a** to **Figure 3.10-1** indicates that Alternative A would result in the conversion of approximately 10 acres of FEMA-defined 100-year floodplain to residential development. However, under developed conditions, the existing on site waterways would be modified, and on site flooding would be reduced. Specifically, as shown on **Figure 4.10-1**, a 100-year flood event occurring within the Action Area would not flood any developable areas,

but would instead be limited to the proposed multi-use channel boundaries. In support of the proposed construction, the project proponent would acquire a Letter of Map Revision from FEMA, showing the updated 100-year flood zones within the Action Area, that would result from the proposed developed condition. The updated extent of flooding is shown on Figure 4.10-1, and would not interfere with proposed housing on site. Therefore, no impact would occur, and Alternative A would not result in the construction of housing or other facilities within a 100-year flood zone.

4.10.2 Alternative B – Reduced Impact Alternative

Impact 10.1: Impacts to Water Quality

Alternative B would result in installation of similar facilities and similar construction activities, as compared to Alternative A, except at a reduced intensity. Therefore, potential impacts relevant to water quality degradation, including potential construction related water quality pollution, stormwater quality of runoff from new impervious surfaces and other urban uses, and wastewater discharge, would be similar to those impacts discussed for Alternative A, except reduced in intensity. Implementation of proposed water quality control features, combined with adherence to permitting conditions for the Phase 1 Stormwater NPDES Permit and an NPDES General Stormwater Permit would ensure that potential water quality degradation would be minimized. Therefore, this impact is considered less than significant.

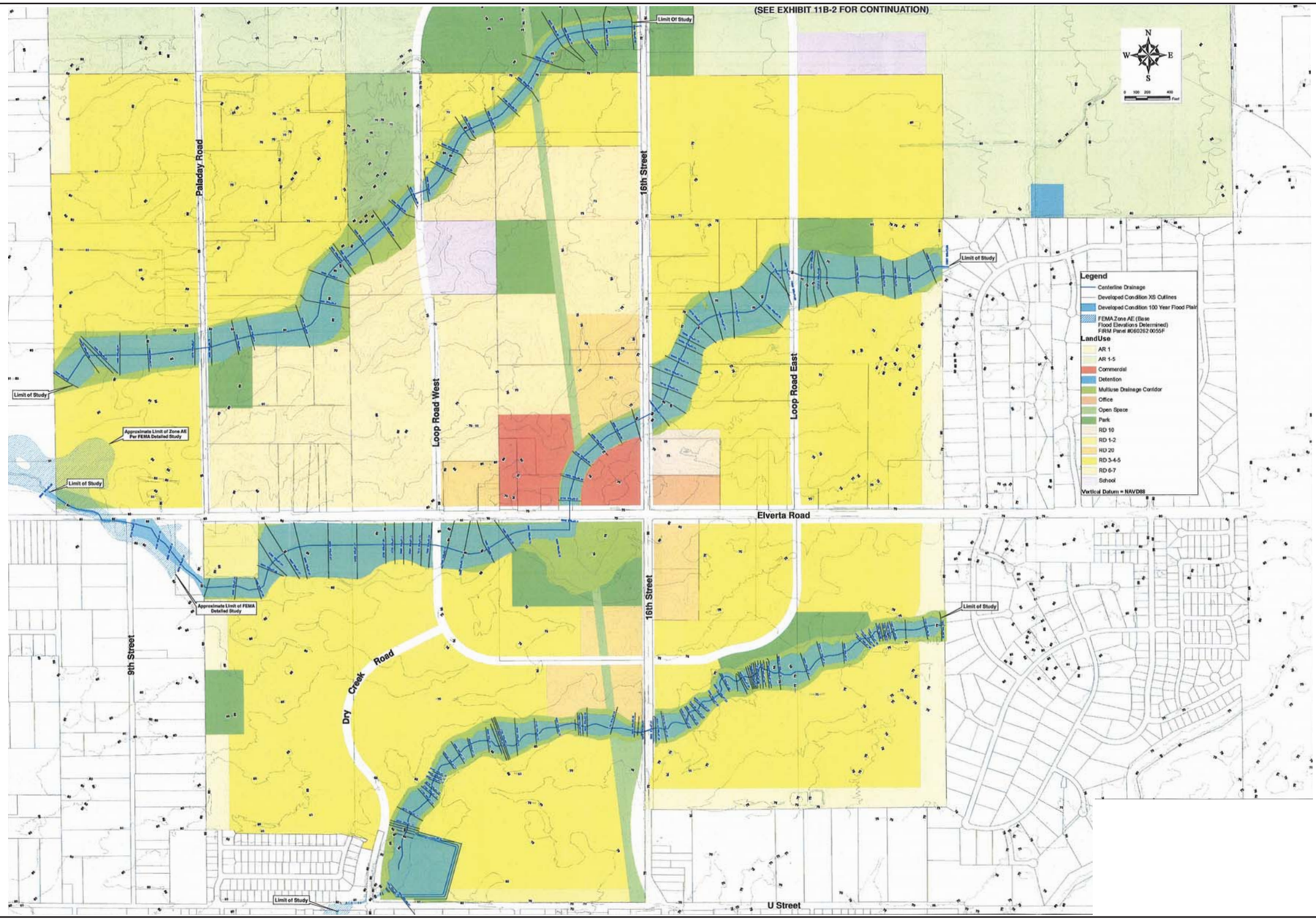
Impact 10.2: Changes in Drainage and Flooding Patterns

Alternative B would result in the installation of similar facilities as compared to Alternative A, except at a reduced intensity. Therefore, Alternative B would result in similar changes to existing on site drainage and flooding patterns as a result of: (1) alterations to on-site waterways; (2) permanent changes due to proposed grading and earth moving; and (3) an increase in the area of impervious surfaces on site, as compared to Alternative A, except that the intensity of potential impacts would be reduced, in comparison to Alternative A. This is considered a significant and adverse impact. For additional detail regarding potential impacts, please refer to Alternative A.

Mitigation Measure

Implement Mitigation Measure 10.2: Comprehensive Drainage Plan.

Significance after Mitigation: Less than significant.



SOURCE: Mackay & Somps, 2011; and ESA, 2011

Figure 4.10-1
Proposed 100-Year Flood Zone

This Page is Intentionally Left Blank

Impact 10.3: Development within Floodplains; Interference with Flood Flows

Alternative B would result in the installation of similar facilities as compared to Alternative A, except at a reduced intensity. Comparison of **Figure 3.10-1** to **Figure 2-1b** indicates that Alternative B would avoid conversion of existing 100-year floodplain areas to residential uses. Instead, existing floodplain areas would be maintained as floodplain areas under Alternative B, and development would be limited to areas outside of the existing 100-year floodplain area. Therefore, no impact would occur.

4.10.3 Alternative C – Approved Specific Plan with 25% Density Bonus

Impact 10.1: Impacts to Water Quality

Alternative C would result in installation of similar facilities and similar construction activities, as compared to Alternative A, except that proposed facilities would be installed in different areas. Additionally the drainages would be channelized but sized to fully contain anticipated flood and stormwater flows. Therefore, potential impacts relevant to water quality degradation, including potential construction related water quality pollution, stormwater quality of runoff from new impervious surfaces and other urban uses, and wastewater discharge, would be similar to those impacts discussed for Alternative A, except for the increase in density. However, implementation of the proposed water quality measures, including adherence to permitting conditions for the Phase 1 Stormwater NPDES Permit and an NPDES General Stormwater Permit would ensure that potential water quality degradation would be minimized, even considering the increase in density, and other potential impacts would remain similar to those discussed for Alternative A. Therefore, this impact is considered less than significant.

Impact 10.2: Changes in Drainage and Flooding Patterns

Alternative C would result in installation of similar facilities and similar construction activities, as compared to Alternative A, except that proposed facilities would be installed in different areas. Additionally the drainages would be channelized but sized to fully contain anticipated flood and stormwater flows. Additionally, Alternative C would result in additional channelization of existing waterways, as compared to Alternative A. Potential changes under Alternative C would result in changes to existing on site drainage and flooding patterns as a result of: (1) removal and realignment of most on-site waterways including loss of floodplain storage area on site; (2) permanent changes due to proposed grading and earth moving; and (3) an increase in the area of impervious surfaces on site. This is considered a significant and adverse impact. Although the intensity of impacts under Alternative C would be increased as compared to Alternative A, implementation of **Mitigation Measure 10.2** would still be sufficient to minimize potential impacts. However, note that the intensity of required stormwater control infrastructure that would be required under **Mitigation Measure 10.2**, for Alternative C, would be more extensive than

that required for Alternative A, because more of the existing floodplain storage capacity would be removed.

Mitigation Measure

Implement a modified Mitigation Measure 10.2: Comprehensive Drainage Plan, that accounts for an increased removal of existing floodplain capacity.

Significance after Mitigation: Less than significant.

Impact 10.3: Development within Floodplains; Interference with Flood Flows

Alternative C would result in installation of similar facilities and similar construction activities, as compared to Alternative A, except that proposed facilities would be installed in different areas. Additionally the drainages would be channelized but sized to fully contain anticipated flood and stormwater flows. Comparison of **Figure 3.10-1** to **Figure 2-1c** indicates that Alternative C would result in the conversion of a similar area of existing 100-year floodplain areas to residential uses, as compared to Alternative A – around 10 acres, in the same location as Alternative A. However, similar to Alternative A, proposed hydromodification and flood control facilities would result in a reduction in the total area subject to 100-year flooding under Alternative C, and the project proponent would file a Letter of Map Revision (LOMR) to FEMA requesting redelineation of 100-year flood maps, such that proposed facilities would not be located within the 100-year flood zone. Therefore, no impact would occur.

4.10.4 Alternative D – No Permit Alternative

Impact 10.1: Impacts to Water Quality

Potential impacts relevant to water quality degradation, including potential construction related water quality pollution, stormwater quality of runoff from new impervious surfaces and other urban uses, and wastewater discharge, would be similar to those impacts discussed for Alternative A, except substantially reduced in density. Similar to Alternative A, development of on-site stormwater quality facilities, combined with adherence to conditions of required NPDES General Stormwater Permits, would ensure that potential water quality degradation would be minimized. Therefore, this impact is considered less than significant.

Impact 10.2: Changes in Drainage and Flooding Patterns

Alternative D would result in the installation of substantially reduced facilities as compared to Alternative A, but would still result in changes to existing grading, drainage, and impervious surfaces. Development would be required to adhere to applicable federal, state and local

regulations regarding drainage and flooding. The submittal of a drainage details is required by Sacramento County prior to approval of development plans. Therefore, a less than significant impact is anticipated for Alternative D.

Impact 10.3: Development within Floodplains; Interference with Flood Flows

Alternative D would entirely avoid disturbance to floodplains and 100-year flood zones. Therefore, no impact would occur.

4.10.5 References

Central Valley Regional Water Quality Control Board, 2010. 2010 CWA Section 303(d) list of Impaired Water Bodies. Available at: http://www.waterboards.ca.gov/water_issues/programs/tmdl/integrated2010.shtml Accessed on February 21, 2011.

California Environmental Protection Agency (California EPA), 2006. Climate Action Team Report to Governor Schwarzenegger and the Legislature. March, 2006. Available at: http://www.climatechange.ca.gov/climate_action_team/reports/#2006 Accessed on October 7, 2011.

FEMA, 2009. Federal Emergency Management Agency, Flood Insurance Rate Maps.

This Page is Intentionally Left Blank

4.11 Land Use and Agriculture

This section discusses the potential impacts of the alternatives on land use and agriculture.

4.11.1 Alternatives A, B and C

Impact 11.1: Physically Divide an Existing Community

Land uses adjacent to the project site include residential development, mixed uses (schools, commercial buildings, a temporary fire station, etc.), open space, and some grazing lands. Development under Alternatives A, B and C would be an extension of similar types of development in surrounding areas, primarily residential in nature. Additionally, these alternatives do not propose long, linear features (such as a highway, railroad corridor, etc.) that would create a physical impediment to pedestrian or bicycle travel in the area. As such, Alternatives A, B and C would not physically divide an existing community and this impact would be less than significant.

Impact 11.2: Consistency with Existing Land Use Plans and Policies

The applicable land use plans for the project site include the Sacramento County General Plan and the Rio Linda/Elverta Community Plan (RLECP). The McClellan Airport Comprehensive Land Use Plan (CLUP) is addressed in Impact 11.4. Alternatives A, B and C have been designed to incorporate elements of the local land use plans and policies into the design of the respective developments. As the land uses proposed for the participating parcels were developed with the full buildout of the project site in mind, this consistency discussion is framed in terms of full buildout of the project site. The following discussion is focused on consistency with the overall objectives for the project site (e.g. a mix of residential and commercial uses) and is not focused on required local approvals (e.g. approval by the Board of Supervisors of an infrastructure financing plan).

The Sacramento County General Plan and RLECP have goals which relate to the orderly development of land uses. The relevant policies for Specific Plan areas and new development are included within **Table 4.11-1** along with a brief consistency discussion for the alternatives.

Alternatives A, B and C are generally consistent with the Sacramento County General Plan and RLECP and thus impacts from these alternatives would be less than significant.

TABLE 4.11-1
LAND USE PLAN CONSISTENCY

General Plan Land Use Policy	Alternatives A, B and C	Alternative D
Sacramento County General Plan		
GP LU-22: Specific Plans and Community Plans should provide a balance of employment, neighborhood services, and different housing types wherever feasible.	**Consistent**: These alternatives would establish employment opportunities through commercial and office development. These alternatives would also include a range of housing densities, parks and schools.	**Inconsistent**: Alternative D does not provide for employment opportunities and the range of housing density would be limited.
GP LU-38: Community Plans, Specific Plans, and development projects shall be designed to promote pedestrian movement through direct, safe, and pleasant routes that connect destinations inside and outside the plan or project area.	**Consistent**: These alternatives are designed with pedestrian and bicycle improvements for the project site which connect to off-site pedestrian and bicycle routes.	**Consistent**: Development of the project site would be required to conform with local standards regarding sidewalks and roadways.
GP LU-102: Ensure that the structural design, aesthetics and site layout of new developments is compatible and interconnected with existing development.	**Consistent**: The land use types and densities for these alternatives have been selected with consideration of off-site land uses. Lower residential densities are planned along the perimeter of the project site to buffer surrounding uses. The land use plan designates agricultural-residential uses on the northern portion of the project site adjacent to agricultural uses within Placer County.	**Consistent**: Agricultural residential uses proposed under Alternative D are consistent with surrounding residential and agricultural development.
GP LU-57: Future Agricultural-Residential development shall be limited to existing developed and infill Agricultural-Residential lands designated on the Land Use Diagram and such additional areas adjacent to existing developed lands to act as a buffer to new urban areas or as a buffer at the Urban Service Boundary as are consistent with LU-58.	**Consistent**: These alternatives propose development of agricultural-residential uses adjacent to the Placer County line. Agricultural residential uses are integrated with compatible urban uses to the south as part of the development plan.	**Inconsistent:** While agricultural residential uses would occur on the north side of the project site, the development of agricultural residential uses on the southern portion would be inconsistent with the Urban Development Area designation.
GP LU-58: Community and Specific Plans prepared for urbanizing areas may provide for additional Agricultural-Residential areas provided they are functionally integrated with other urban uses in the context of the Plan.	**Consistent**: See LU-42 discussion above.	**Inconsistent**: Alternative D does not integrate urban uses for proposed agricultural residential development.
GP LU-63: All new AR/A-1 and AR/A-2 lots created within the USB shall either connect to or provide for ultimate connection to the public sewer and water system to the satisfaction of the local utility service provider.	**Consistent:** Connection to the public water and sewer system is planned for both the participating parcels and the full project site under buildout conditions.	**Consistent:** It is anticipated that proposed development under Alternative D would be required to be consistent with this policy.

TABLE 4.11-1 (Continued)
LAND USE PLAN CONSISTENCY

General Plan Land Use Policy	Alternatives A, B and C	Alternative D
Rio Linda/Elverta Community Plan		
RLECP LU-6: …Within the "urban" area, the maximum residential holding capacity shall be 4,500 dwelling units. Within the "agricultural-residential" area, the land may be designated AR-1 or AR-2 as part of the Specific Plan. The urban area land plan shall include areas of varying residential densities with one RD-20 site, and low density residential areas in all of the following density ranges: RD 1-2; RD 3-4; RD-5; RD 6-7…	**Consistent**: These alternatives are designed to be consistent with the 4,500 units holding capacity of the designated urban area. The alternatives would have greater than 4,500 units due to the Housing Element Policy HE-59c allowing for a 25% density increase for energy efficient projects. The northerly portion of the project site contains agricultural residential uses while the designated urban area includes the residential densities discussed in this policy.	**Inconsistent**: The development of agricultural residential development within the designated urban area is not consistent with this policy and does not include the range of residential densities stated in the policy.
RLECP LU-9: The location and design of "buffers" shall be addressed during the specific planning process for the new growth area in eastern Elverta … Locations to be considered include: • between existing agricultural-residential uses and new urban uses • along drainage corridors to mitigate environmental impacts and provide trail access to equestrian properties.	**Consistent**: Agricultural residential uses would be buffered by natural drainage areas, low-density residential development and parks. Drainage corridors incorporate buffers from urban uses. The corridors are located primarily adjacent to parks, open space and residential areas, avoiding commercial and office space areas to the extent feasible.	**Consistent**: No urban uses are planned and thus there would be no compatibility issue with planned agricultural residential uses. Residential development would be required to adhere to any local-setback requirements for natural drainages.
RLECP LU-21: Within the Urban Growth Area, residential development projects should include a variety of lot sizes and housing types …	**Consistent**: See LU-6 discussion above.	**Inconsistent**: See LU-6 discussion above.
RLECP LU-32: Provide a neighborhood commercial center within the new growth area in eastern Elverta…	**Consistent**: Commercial and office uses are focused at the intersection of Elverta and 16th Street.	**Inconsistent**: No commercial uses are proposed.

Impact 11.3: Consistency with the McClellan Airport Comprehensive Land Use Plan

A portion of the project site lies within the overflight safety zone for McClellan Airport. The proposed uses within participating parcels under Alternatives A, B and C include residential, commercial and office uses which are compatible with the uses permitted in the overflight zone, according to the Comprehensive Land Use Plan (CLUP; SACOG, 1992). Uses which could generate a substantial number of people such as a regional shopping center, hospital or stadium are generally prohibited; however, no such uses are proposed under Alternatives A, B and C. As development under these alternatives would be consistent with the CLUP, impacts would be less than significant.

Impact 11.4: Result in the Conversion of Farmland or Land under Williamson Act Contract to Non-Agricultural Use

As summarized in **Section 3.11**, none of the participating parcels are under Williamson Act contracts and none of the participating parcels contain prime farmland or farmland of statewide importance. The participating parcels contain farmland of local importance, grazing land and developed land. The Sacramento County General Plan Agricultural Element (2011) contains protection policies for prime, statewide importance, unique, and local importance farmlands located inside the USB. The participating parcels contain less than 50 acres of farmland of local importance, and no lands of higher agricultural quality. No Williamson Act contracts for agricultural lands would be affected by the alternatives. The impacts to agriculture would be less than significant.

4.11.2 Alternative D – No Permit Alternative

Impact 11.1: Physically Divide an Existing Community

Under Alternative D, it is possible for low-density residential development to occur on the project site. Low-density residential is consistent with existing development on and surrounding the project site and would not be anticipated to physically divide an existing community. This impact would be less than significant.

Impact 11.2 Consistency with Existing Land Use Plans and Policies

The Sacramento County General Plan and RLECP have goals which relate to the orderly development of land uses. The relevant policies for Specific Plan areas and new development are included within **Table 4.11-1** along with a brief consistency discussion for the alternatives.

Alternative D has several major inconsistencies with the Sacramento County General Plan and RLECP and thus impacts from Alternative D would be significant and adverse.

Impact 11.3: Consistency with the McClellan Airport Comprehensive Land Use Plan

A portion of the project site lies within the overflight safety zone for McClellan Airport. Alternative D proposes only residential uses which are consistent with the allowed uses in the overflight safety zone (SACOG, 1992). As Alternative D would be consistent with the CLUP, impacts would be less than significant.

Impact 11.4: Result in the Conversion of Farmland or Land under Williamson Act Contract to Non-Agricultural Use

As the project site does not contain substantial amounts of important nor Williamson Act contracts, impacts to agriculture would be less than significant.

4.11.3 References

Sacramento County. 2011. *General Plan of 2005 – 2030.* Amended November 9, 2011.

Sacramento County Planning and Community Development Department, 1998. Rio Linda and Elverta Community Plan, adopted June 3, 1998.

SACOG, 1992. McClellan Air Force Base Comprehensive Land Use Plan. January 1987, amended December 1992.

This Page is Intentionally Left Blank

4.12 Noise

4.12.1 Methodology

The project has the potential to affect the existing ambient noise environment in the immediate project vicinity and along the roadway network to the Plan area due to the following noise sources: construction, operations, and traffic.

While most of the environmental consequences analyses in **Chapter 4** of this EIS focus on the impacts of developing the initial phase (participating parcels) of the Plan, the analyses of Transportation and Traffic (**Section 4.14**), Air Quality and Global Climate Change (**Section 4.3**), and Noise (**Section 4.12**) are considered more regional and not driven by the specific footprints of the participating parcels. This is because the 404 permit applications for the participating parcels in the Plan area includes an application for the development of the roadway infrastructure that would serve not only the participating parcels, but the entire Plan area. Because the proposed roadway infrastructure would allow for the full buildout of the Plan area, the impact analysis for these more regional resource areas (Air, Noise, and Traffic) evaluate the potential impacts of the full buildout of the Plan area in their specific impact discussions. Thus, Noise (Section 4.12) evaluates the potential impacts of the full buildout of the Plan area.

Stationary noise impacts are assessed based on the Sacramento General Plan Noise Element and the Sacramento County Code and a comparative analysis of the noise levels resulting from the Alternatives versus the noise levels under baseline or existing conditions. Analysis of temporary construction noise effects is based on typical construction phases and equipment noise levels and attenuation of those noise levels due to distances between sensitive receptors in the vicinity and the construction activity. The County requires construction activity to be limited to the daytime hours between 6:00 a.m. to 8:00 p.m. Monday through Friday, and 7 a.m. to 8 p.m. on weekends. Non-transportation-related noise impacts were assessed by examining the proposed uses on-site.

Traffic noise impacts were estimated using spreadsheets based on the Federal Highway Administration's (FHWA) TNM Lookup 2.5 model for calculating traffic noise levels. A common practice has been to assume that minimally perceptible to clearly noticeable increases of 3–5 dB represent a significant increase in ambient noise levels. Also, the Sacramento County General Plan Noise Element provides specified limits for transportation and non-transportation noise.

4.12.2 Alternative A – Applicant's Preferred Alternative

Impact 12.1 Construction Noise

The Plan proposes a mix of land uses including Residential, Commercial/Office, Schools, Parks, drainage/Riparian Corridor, Detention, and Open Space areas. In addition, construction of on-site public services, utilities, and other infrastructure improvements such as roadways, bicycle paths, trails and parking areas would be needed to support these land uses. Buildout would occur over time.

There also remains the potential that, depending on the phasing and overall schedule, new sensitive receptors may be constructed in the Plan area, which could affect the proximity of construction noise sources to sensitive receptors.

Construction activity noise levels at and near the Plan area would fluctuate depending on the particular type, number, and duration of uses of various pieces of construction equipment. Construction activities associated with the Plan area would involve clearing, grading, excavation, and structural building. Construction-related material haul trips would raise ambient noise levels along haul routes. The level of increase would depend on the number of haul trips made and types of vehicles used. **Table 4.12-1** shows typical noise levels during different construction stages. **Table 4.12-2** shows typical noise levels produced by various types of construction equipment.

TABLE 4.12-1
TYPICAL CONSTRUCTION NOISE LEVELS

Construction Phase	Noise Level (dBA, Leq) a
Ground Clearing	84
Excavation	89
Foundations	78
Erection	85
Finishing	89

a Average noise levels correspond to a distance of 50 feet from the noisiest piece of equipment associated with a given phase of construction and 200 feet from the rest of the equipment associated with that phase.

SOURCE: U.S. Environmental Protection Agency, Noise from Construction Equipment and Operations, Building Equipment, and Home Appliances, 1971.

TABLE 4.12-2
TYPICAL NOISE LEVELS FROM CONSTRUCTION EQUIPMENT

Construction Phase	Noise Level (dBA, Leq) a
Dump Truck	88
Portable Air Compressor	81
Concrete Mixer (Truck)	85
Scraper	88
Jack Hammer	88
Dozer	87
Paver	89
Generator	76
Backhoe Finishing	85

SOURCE: Cunniff, Environmental Noise Pollution, 1977.

The nearest sensitive receptors to the proposed action include residences within and adjacent to the Project Area as well as the Elverta Honey Bears Preschool. Noise from construction activities generally attenuates at a rate of 6 to 7.5 dBA per doubling of distance and thus other sensitive receptors in the vicinity would be exposed to construction noise at incrementally lower levels. Relative to the different proximities to construction activities, sensitive receptors may be affected by construction noise.

Construction-related material haul trips and vehicle traffic to and from construction sites could raise ambient noise levels along construction haul routes, thus affecting sensitive receptors along these routes. In particular, trucks generate noise levels of approximately 85 dBA at 50 feet. At the same time, these trips and their associated noise would be short-term in duration and intermittent over the course of any day where there is construction activity, as opposed to occurring in a constant stream throughout the day. The loudest activities would be excavation or finishing, producing levels up to 89 dBA at 50 feet.

Lastly, ground-borne vibration from activities that involve the use of heavy equipment for project construction could produce substantial vibration at nearby sensitive receptors. Vibration levels for large bulldozers are typically 0.089 inches/second peak particle velocity (PPV, defined as the maximum instantaneous peak of the vibration signal) and 87 root mean square (RMS, defined as the average of the squared amplitude of the signal at 25 feet (FTA, 2006). Under normal propagation conditions, vibration levels at residences are usually well below the FTA threshold of 0.20 in/sec and the annoyance threshold of 80 RMS. Construction noise and vibration would be considered significant and adverse impacts. Construction must comply with the County's Noise Ordinance which limits construction activities to daytime hours from 6 a.m. to 8 p.m., Monday through Friday, and 7 a.m. to 8 p.m. on Saturday and Sunday. This Noise Ordinance in combination with the recommended mitigation below would reduce impacts to a less-than-significant level.

Mitigation Measures

Measure 12.1: Alert Public of Construction. To further address potential nuisance impacts of construction, construction contractors shall implement the following:

- Signs shall be posted at all construction site entrances to the Plan area upon commencement of proposed construction, for the purposes of informing all contractors/subcontractors, their employees, agents, material haulers, and all other persons at the applicable construction sites, of the basic requirements of the County's Noise Control Ordinance.
- Signs shall be posted at the construction sites that include permitted construction days and hours, a day and evening contact number for the job site, and a contact number in the event of problems.
- An onsite complaint and enforcement manager shall respond to and track complaints and questions related to noise.

Significance after Mitigation: Less than significant.

Impact 12.2: Operational Noise

Future noise levels associated with Plan area operations would likely increase to levels above the existing levels. However, some areas such as the Open Space areas would not change or would result in noise levels similar to existing conditions. Proposed development would be required by the Sacramento County Code to meet the standards of 55 dBA L_{50} daytime/50 dBA L_{50}

nighttime as well as 35 dBA L_{50} interior noise levels. Noise sources associated with maintenance of residential area property are to comply with the Sacramento County Code between the hours of 6 a.m. and 8 p.m. on weekdays and 7 a.m. to 8 p.m. on weekends. A summary of the operational noise of each area follows:

Residential

The only sources of residential noise come from yard maintenance and HVAC systems. Operational noise impacts would not be expected to exceed the Sacramento County Code standards and thus are considered less than significant.

Commercial/Office

Like the Residential areas, the Commercial/Office area would produce HVAC, maintenance, and some traffic. Operational noise impacts would not be expected to exceed the Sacramento County Code standards and thus are considered less than significant.

Schools

The two elementary schools would be built along the loop in the center and northeast areas of the project site. They would generate noise from traffic, HVAC units, playgrounds, and typical maintenance noise such as lawn care. Operational noise impacts would not be expected to exceed the Sacramento County Code standards and thus are less than significant.

Parks

Parks areas are not expected to create noise levels above the Sacramento County Code standards and thus are less than significant.

Open Space

Open space lands include a network of on- and off-street trails planned for pedestrians, bicycles and equestrian use. Primary trails follow the loop road, Elverta Road, 16th Street, the multi-purpose drainage system and the power line easement. Secondary trails occur between neighborhoods. Open Space areas would not produce excessive levels of noise and would be considered less than significant.

Impact 12.3: Airport Noise Impacts on Proposed Development

The southeast corner of the Project area lies approximately 1/3 mile from the 60-65 dBA community noise equivalent level (CNEL) contour line of McClellan Airport. Airport contour lines can be seen in Figure 3.12-3. Impacts from McClellan Airport would not adversely affect the project site and would be considered less than significant.

Impact 12.4: Traffic Generated Noise

Alternative A would contribute to an increase in local traffic volumes, resulting in higher noise levels along local roadways. To assess the impact of project traffic on roadside noise levels, noise level projections were made using the FHWA TNM Lookup model and the Project traffic studies provided by Fehr and Peers. Traffic noise levels were analyzed for 10 roadway segments. The segments analyzed and results of the modeling for Alternative A are shown in **Table 4.12-3.**

Reference noise levels were calculated at 50 feet, and attenuated to the distance from the centerline of the road to the nearest residence façade. Traffic speed limits range from 35 – 45 miles per hour. The distance from the centerline of each road segment to the closest residence façade was the same as in the DERA 2007 EIR, when the same roads were analyzed (DERA, 2007).

Traffic noise levels were analyzed for the cumulative in 2035 without the project and for the cumulative in 2035 with the project. Weekday peak-hour trips were calculated by taking 10 percent of Average Daily Traffic levels as modeled in the traffic chapter. As shown in Table 4.12-4, traffic noise levels exceed 65 dB Ldn on most segments. Elverta Road is most affected by projected traffic noise levels. Most road segments would be exposed to noise levels exceeding the General Plan guidelines. This impact would be significant and adverse.

Relative to the FHWA NAC criteria, most of the segments would approach or exceed 67 dBA. U St., 9th St., and 16th St. from Q to Elverta are the exceptions. The only road segment that would exceed the existing traffic noise levels by 12 dBA is 16th Street from Elverta to County Line. Interior noise levels would not exceed 52 dB Ldn as a typical unmodified dwelling might provide 20 – 25 dB of noise reduction (Wyle, 1994). For all segments except U Street, the 45 Ldn interior County Standard could be exceeded assuming the minimum 20 dB of attenuation provided by standard building techniques. This impact would be significant and adverse.

TABLE 4.12-3
ATTENUATION DISTANCE TO 60 AND 65 DBA CONTOURS, ALTERNATIVE A

Segment Description	Reference Noise Level (dBA Ldn)[1]	Distance (feet) from centerline of road to property façade	Noise Level at property façade (dBA) [2]	Distance (feet) to the 65 dBA Ldn Noise Contour[3]
Elverta from SR 99 to E. Levee Road (2035 No Project)	70.8	83	**67.5**	**122**
(2035 + Alternative A)	71.4	83	**68.1**	**134**
Elverta from E. Levee Road to Palladay Road (2035 No Project)	70.2	83	**66.9**	**111**
(2035 + Alternative A)	71	83	**67.7**	**126**
Elverta from Palladay Road to 16th St.(2035 No Project)	70.7	83	**67.4**	**120**
(2035 + Alternative A)	72.4	83	**69.1**	**156**
Elverta from 16th St. to 28th St.(2035 No Project)	72.2	83	**68.9**	**151**
(2035 + Alternative A)	73.7	83	**70.4**	**190**
Elverta from 28th St. to Watt Avenue (2035 No Project)	73.1	83	**69.8**	**173**
(2035 + Alternative A)	74.2	83	**70.9**	**205**
U St. from Dry Creek Road to 16th St. (2035 No Project)	62.8	40	64.3	36
(2035 + Alternative A)	60.1	40	61.6	24
9th St. from Elverta Road to U St. (2035 No Project)	62.2	40	63.7	33
(2035 + Alternative A)	64.3	40	65.8	**45**
Dry Creek Road from Q St. to U St. (2035 No Project)	66.4	39	**68.0**	**62**
(2035 + Alternative A)	68.8	39	**70.4**	**90**
16th St. from Q St. to Elverta Road (2035 No Project)	66.5	56	65.8	**63**
(2035 + Alternative A)	66.5	56	65.8	**63**
16th St. from Elverta to County Line (2035 No Project)	68.8	56	**68.1**	**90**
(2035 + Alternative A)	70.0	56	**69.3**	**108**

1. Road center to receptor distance is 15 meters (approximately 50 feet) for values shown in this table. Noise levels were calculated using the FHWA Traffic Noise Prediction Model (FHWA TNM) LookUp Program Software Version 2.1, 2007. Look-Up data (02/08/2007) generated by TNM Version 2.5. Prepared by US Department of Transportation, Research and Innovative Technology Administration, Volpe National Transportation Systems Center, Environmental Measurement and Modeling Division. Vehicle mix on based on actual percentages taken during site visits: 98% cars, 1% medium trucks, 1% heavy trucks. The speed for these segments was assumed to be 45 miles per hour for all segments except U St. assumed to be 35 miles per hour.
2. To calculate peak-hour traffic, average daily traffic (from Chapter 3.14) was multiplied by 10 percent. Numbers exceeding NAC criteria are bolded.
3. Attenuation rate assumed at 4.5 dBA per doubling of distance. Distance is bolded if additional attenuation is needed to reach the contour level.

SOURCE: ESA, 2010

Mitigation Measure

Measure 12.4: Traffic noise impacts should be reduced to within the General Plan Noise Element standard levels. In order for residential facades to be compliant with the General Plan, the following mitigation measures have been provided by the 2007 EIR:

- Building noise barriers or soundwalls;
- Requiring increased setbacks;
- Adding more streets to disperse traffic;
- Use rubberized asphalt for road construction.

Acoustical paving (i.e., rubberized asphalt) provides approximately 3 to 5 dB noise level reduction over standard asphalt and typical property line noise barriers of 6 to 8 feet high provides approximately 6 to 8 dB insertion loss for receivers within approximately 25 feet of the barrier. Using some or all of these options, relative to extent of impact at each segment, would reduce the impacts of traffic noise to a less than significant impact.

Significance after Mitigation: Less than significant.

4.12.3 Alternative B: Reduced Impact Alternative

As with Alternative A, this alternative includes the development of a large-scale mixed-use development on the project site. As with Alternative A, Alternative B includes residential uses (various densities); commercial uses; parks and open space; as well as areas allocated for drainage/riparian corridors, detention, and major roads. The geographic locations of planned land uses for Alternative B are similar to those of Alternative A, however, Alternative B would avoid developing some areas of the project site to reduce impacts to waters of the U.S.

The differences between Alternative A and Alternative B would be negligible with regard to potential noise impacts for Impacts 12.1, 12.2, 12.3 and 12.4 and the respective Mitigation Measures.

4.12.3 Alternative C – Approved Specific Plan with 25% Density Bonus

As with Alternative A, this alternative includes the development of a large-scale mixed-use development on the project site. As with Alternative A, Alternative C includes residential uses (various densities); commercial uses; parks and open space; as well as areas allocated for drainage/riparian corridors, detention, and major roads. The geographic location of planned land use types are similar to Alternatives A and B. However, the drainage/riparian corridors are substantially different than for those two alternatives.

The differences between Alternative A and Alternative C would be negligible with regard to potential noise impacts for Impacts 12.1, 12.2, 12.3 and 12.4 and the respective Mitigation Measures.

4.12.4 Alternative D – No Permit Alternative

Potential future development under Alternative D could result in adverse impacts related to noise. However, any future development under this alternative would be subject to local land use approvals and those measures contained in the 2007 EIR. Therefore, potential impacts would be less than significant.

4.12.4 References

County of Sacramento, 2011. *Noise Element. General Plan of 2005 – 2030.* Amended November 9, 2011.

Cunniff, Environmental Noise Pollution, 1977.

DERA, 2007. Final Environmental Impact Report – Elverta Specific Plan and Associated Subdivision Map Known as Countryside Equestrian Estates. County of Sacramento Department of Environmental Review and Assessment Published May 2007.

Federal Transit Administration (FTA), 2006. Traffic Noise and Vibration Impact Assessment. May, 2006.

FHWA Traffic Noise Prediction Model (FHWA TNM) LookUp Program Software Version 2.1, 2007. Look-Up data generated by TNM Version 2.5 Prepared by US Department of Transportation, Research and Innovative Technology Administration, Volpe National Transportation Systems Center, Environmental Measurement and Modeling Division.

U.S. Environmental Protection Agency, Noise from Construction Equipment and Operations, Building Equipment, and Home Appliances, 1971.

Wyle Research Report, 1994. WR 94-23, Raleigh-Durham International Airport New Construction Acoustical Design Guide, Prepared by Melissa Burn, Wyle Laboratories, 30 September 1994.

4.13 Public Services, Utilities and Recreation

4.13.1 Alternative A – Applicant's Preferred Alternative

Impact 13.1: Increased Demand for Municipal Water Service and Facilities

Public water service will be provided to the Specific Plan area by both the Rio Linda/ Elverta Community Water District (RL/ECWD) and the California American Water Company (Cal-AM) through a total of six new groundwater supply wells and appurtenant facilities, subject to the groundwater management requirements for protecting the sustainable yield of the North Area groundwater basin as set forth in the Water Forum Agreement and Rio Linda/ Elverta Community Plan Policy PF-8 (see Section 3.13 for applicable policies).

The total water demand was estimated using the demand factors from the Sacramento County Water Agency (SCWA) Water System Infrastructure Plan (2006) which was used to estimate water demands at build-out of Zone 40. Although the project site is not in Zone 40; Zone 40 is the closest geographic area with established unit demand factors. Near term water demand associated with the issuing of project related permits is estimated to be 1,431 acre feet per year or an average of 1.3 million gallons per day (MGD) (**Table 4.13-1**). The total water demand for Alternative A is estimated to be 4,762 acre feet per year at full build out or on average 4.3 MGD (**Table 4.13-2**). The maximum daily demand at full build out is estimated to be 8.6 MGD (twice the average daily demand).

TABLE 4.13-1
ALTERNATIVE A - NEAR TERM ANNUAL AVERAGE WATER DEMAND ESTIMATES

Area	Acreage	Demand Category	Unit Demand Factor (AFA/Year)	Water Demand (AF/Year)
Proposed Development				
Single Family Residential	392.4	Single Family	2.89	1,134.04
Multi-Family (10/20 units/acre)	14.9	Multi-Family Low Density	3.70	55.13
Commercial	11.3	Commercial	2.75	31.08
Park	14.8	Public Recreation	3.46	51.21
Drainage/Riparian Corridor	90.6	Right-of-Way	0.21	19.03
Open Space	7.9	Public Recreation	3.46	27.33
Major Roads/Other	63.9	Right-of-Way	0.21	13.42
Subtotal				1,331.24
Water System Losses (7.5%)				100
Proposed Development Total	**595.8**			**1,431**

1. Assumes 80,000 gallons per day with 5 hour operating weeks in wet season and 6 hour operating weeks in dry season for dust suppression based on similar projects.

SOURCE: SCWA, 2006; ESA, 2011.

TABLE 4.13-2
ALTERNATIVE A - ANNUAL AVERAGE WATER DEMAND ESTIMATES AT FULL BUILDOUT

Area	Acreage	Demand Category	Unit Demand Factor (AFA/Year)	Water Demand (AF/Year)
Proposed Development				
Single Family Residential	1,313.4	Single Family	2.89	3,795.73
Multi-Family (10/20 units/acre)	39.9	Multi-Family Low Density	3.70	147.63
Commercial	20.8	Commercial	2.75	57.2
School	19.5	Public	1.04	20.28
Park	72	Public Recreation	3.46	249.12
Drainage/Riparian Corridor	166.9	Right-of-Way	0.21	35.05
Detention	2.1	Right-of-Way	0.21	0.44
Open Space	31.1	Public Recreation	3.46	107.61
Major Roads/Other	78.9	Right-of-Way	0.21	16.57
Subtotal				4,429.63
Water System Losses (7.5%)				332
Proposed Development Total	**1,744.6**			**4,762**

1. Assumes 80,000 gallons per day with 5 hour operating weeks in wet season and 6 hour operating weeks in dry season for dust suppression based on similar projects.

SOURCE: SCWA, 2006; ESA, 2011.

According to the Sacramento County Division of Environmental Review and Assessment Environmental Impact Report (DERA EIR), water studies prepared for the Rio Linda/Elverta Community Plan (RLECP) Update Final EIR, which includes the specific plan site, found that annual water demands associated with development of the entire Community Plan area would range between 23,420 acre-feet per year (AF/yr) and 25,960 AF/yr, depending on the Community Plan land use alternative ultimately selected. The EIR concluded that even with sole reliance on a groundwater supply for the Community Plan area: (1) growth under any of the Community Plan land use scenarios will have no significant effect on groundwater supplies in the area; and (2) adequate groundwater supplies exist in the area to serve Community Plan growth. The EIR further concluded that new development in the Community Plan area under any of the land use scenarios would contribute cumulatively to an incremental decline in groundwater levels; but this incremental decline and the dewatering of private wells was determined to be a regional issue, beyond the scope the Community Plan Update project. Because the currently proposed land uses fall within the range of land use densities/intensities analyzed in the groundwater modeling studies for the RLECP Update EIR, the conclusions of those groundwater modeling studies as set forth in the Final EIR would apply to the currently proposed Specific Plan project as well.

Furthermore, approval of the RLECP Update project included the adoption of Community Plan Policy PF-8, which is intended to protect and regulate the use of groundwater in this area. Policy PF-8 indicates that the granting of entitlements for new growth within the Specific Plan and other comprehensively planned areas will require either: (1) supplemental water supplies within the boundaries of Sacramento North Area Groundwater Management Authority (SNAGMA) in sufficient quantities to prevent a long-term net increase in pumping from the proposed

development; or (2) adoption of an appropriate groundwater management program by SNAGMA to protect the long-term sustainable yield of the groundwater basin underlying the area, and assurance that water use of the new development is consistent with said groundwater program.

As described in Section 3.13, the CA Water Supply Planning Act (SB 610) requires coordination between land use lead agencies and public water systems for certain large development projects, including but not limited to: residential developments of more than 500 dwelling units; shopping or business developments with more than 1,000 employees or more than 500,000 square feet of floor space; commercial office building developments with more than 1,000 employees or more than 250,000 square feet of floor space; and projects with a water demand equivalent to or greater than the water demand of a 500 dwelling unit project. The purpose of this coordination is to determine whether projected water supplies will be sufficient to satisfy the demands of the proposed project, in addition to existing and planned future uses. The proposed Specific Plan project, with a holding capacity of up to 6,190 dwelling units and supporting commercial uses, is subject to the SB 610 requirements.

Both RL/ECWD and Cal-Am have prepared Water Supply Assessments for the proposed project pursuant to SB 610, which are included in their entirety as Appendix WS-2 and WS-3 in the DERA EIR. Both Water Supply Assessments conclude that sufficient and reliable water supplies will be available to serve the water demands of the project in addition to the public water systems' existing and planned future uses during normal, single-dry, and multiple-dry water years through 2030, assuming compliance with the long-term regional groundwater and surface water resource management efforts associated with the Water Forum Agreement, the Sacramento Groundwater Authority, and Community Plan Policy PF-8. In addition, the project will be subject to future compliance with SB 221, which would not allow development to outpace available water supplies. For the reasons listed above, this impact is considered less than significant.

Impact 13.2: Increased Demand for Municipal Wastewater Service and Facilities

Total wastewater demand for Alternative A was estimated using the demand factors from the Sacramento County General Plan Update Final EIR. These demand factors are based on the CSD-1 Sewerage Facilities Expansion Master Plan 2006 Update and Sacramento Area Sewer District (SASD) Design Standards from 2008 (Sacramento County, 2010). Most uses have a demand factor of six Equivalent Single-Family Dwelling Units (ESDs) per day including special planning areas, mixed-use developments, commercial uses, public uses, industrial uses, open space and recreation uses. Using this demand factor, the project would have an equivalent of 3,575 ESDs in the near-term (595.8 acres) and would have an equivalent of 10,464 ESDs under full buildout (1,744.6 acres). The Sacramento Regional County Sanitation District (SRCSD) estimates a rate of 310 gallons per ESD within the Master Plan (2000) for an estimated total average dry weather flow (ADWF) of 3.2 MGD.

The Sacramento Regional Wastewater Treatment Plant (SRWTP) currently receives 141 MGD and has a permitted dry weather capacity of 181 MGD. Thus the SRWTP currently has capacity for the project; however, build-out of the General Plan is anticipated to exceed the capacity of the SRWTP. The proposed 2020 master plan for the SRWTP anticipates an expanded capacity of 218 MGD which could serve development in the long-term; however, the Master Plan has not yet been approved due to litigation (Sacramento County, 2010).

Regarding conveyance, limited portions of the Rio Linda/Elverta Community Plan area are presently served by the CSD-1 sewer system. Wastewater generated by the Gibson Ranch/Antelope areas outside of the Rio Linda/Elverta Community Plan area combine with wastewater generated by the Gibson Ranch area within the Rio Linda/Elverta Community area and is conveyed by the 27-inch diameter Dry Creek Interceptor-3 (DCI-3) and wastewater generated by the sewered areas of Rio Linda is conveyed by the 27-inch diameter Rio Linda-4 (RL-4) trunk sewer. Wastewater from DCI-3 combines with wastewater from RL-4 at a junction structure (at the intersection of Elkhorn Boulevard and Sacramento Northern Railroad Company tracks just west of Cherry Lane) and is conveyed southward in the 42-inch diameter Dry Creek Interceptor-2 (DCI-2) for eventual conveyance by Dry Creek Interceptor-1 (DCI-1) in North Sacramento to the Arden Pump Station. Wastewater pumped by the Arden Pump Station is transported by the Arden force main southward to the Central-3 gravity interceptor. From the Central-3 gravity interceptor, the wastewater is conveyed through the Central-2 and Central-1 gravity interceptors to the Sacramento Regional Wastewater Treatment Plant (SRWTP) in Elk Grove for treatment and disposal.

The Sacramento Sewerage Expansion Study (SSES) recommended projects to correct capacity deficiencies in the existing CSD-1 trunk and SRCSD interceptor systems and to provide sewer service to all portions of the Urban Service Area with flows equal to or greater than 1 MGD. The SSES Master Plan included recommended trunk sewer and interceptor projects for the Rio Linda and Gibson Ranch/Antelope ("Gibson Ranch") area. However, for all proposed development areas, further coordination with SASD and SRCSD would be required to ensure that adequate capacity is available in existing conveyance facilities and ensure that new infrastructure is developed as needed for proposed development. Additionally, uncertainty associated with the development of future trunk and interceptors in the Rio Linda and Elverta Community Plan area, as well as expansion of the SWRTP would contribute to a significant and adverse impact.

Mitigation Measure

> **Measure 13.2: Wastewater Service.** Prior to construction, each land use developer(s) shall prepare a design-level sewer study for review and approval by SASD and SRCSD to document that existing and/or proposed conveyance facilities have adequate capacity for the project.

Significance after Mitigation: Less than significant.

Impact 13-3: Increased Generation of Solid Waste

Implementation of Alternative A would result in increased demands for solid waste services, however, planned solid waste facilities are sufficient to serve development of the Specific Plan area. The capacity of the recently expanded Kiefer Landfill is sufficient to accommodate projected disposal needs in Sacramento County through approximately 2035, however, at current usage rates the landfill is anticipated to last until 2064 (CalRecycle, 2010). Therefore, environmental effects associated with the provision of solid waste services are considered less than significant.

Impact 13.4: Increased Demand for Energy and Infrastructure

Implementation of Alternative A would generate increased demand for electrical and natural gas service and would require the installation of new facilities. Electricity and natural gas are supplied in accordance with approved tariffs with the California Public Utilities Commission, typically on a first-come, first-serve basis. Development resulting from implementation of Alternative A would be subject to project specific review by SMUD and PG&E to identify the specific energy facilities required in order to serve the development and the most appropriate siting for such facilities. Furthermore, development associated with the implementation of Alternative A would submit service applications with design-level demands to SMUD and PG&E to ensure adequate energy services are provided for each land use; therefore this impact is considered less than significant.

Impact 13.5: Increased Demand for Law Enforcement Services

The Sacramento County Sheriff's Department would provide primary law enforcement services to the project site. Using the County's goal of one officer to 1,000 residents (Sacramento County, 2010), the estimated number of police officers that would be needed to accommodate project development in the near-term is approximately 7; this number is based on 2,457 residential units with 2.64 persons per household (U.S. Census, 2010). At full buildout, the estimated number of police officers which would be needed is approximately 16 (based on an estimated residential population of 6,190 with 2.64 persons per household). It should be noted that the County is currently operating below their goal, with roughly 0.5 officers per 1,000 residents (Sacramento County, 2010). To maintain adequate levels of service, additional officers, facilities, and equipment would be required to serve project development. The Sheriff's Department is funded through Sacramento County's General Fund and sometimes supplemented by grant money. The proposed development would contribute to the General Fund and the funding of law enforcement services through increased property tax and sales tax collection. Thus, the impacts to law enforcement services would be less than significant.

Impact 13.6: Increased Demand for Fire Protection Services

The Sacramento Metropolitan Fire District (SMFD) would provide fire protection and emergency medical services to the project site. Implementation of Alternative A would result in a need for additional fire protection staff and/or facilities to maintain the SMFD response time goal of five minutes or less, 80 percent of the time. Multiple stations would serve the project site based on where and what service is needed. The closest existing fire station (No. 117) is located immediately east of the Plan area at Elverta Road and Cherry Brook Drive. Another fire station (No. 116) is located one mile west of the Plan area at Elverta Road and Elwyn Avenue. A third fire station (No. 111) is located southwest of the Specific Plan area on Front Street, but is planned to be replaced by a new station at a site on Rio Linda Boulevard just north of Elkhorn Boulevard. The Fire District has indicated that these three facilities will provide sufficient service for the proposed Specific Plan area at buildout.

SMFD receives revenue from multiple sources, primarily property taxes, and State/local government agency funds. In addition, the Board of Supervisors can establish mitigation fees for the purpose of funding adequate fire protection and emergency medical response facilities, provided they find that such fees are critical and necessary to meet the facility funding needs of the fire district. Any new proposed development would, under discretion of the Board of Supervisors, be required to pay mitigation fees to fund adequate fire protection and emergency medical response if existing methods of financing are inadequate. The proposed development would contribute to the funding of fire protection services through property taxes and impact/mitigation fees if required; thus, the impacts to fire protection services would be less than significant.

Impact 13.7: Increased Demands on Public School Facilities

As discussed in Section 3.13, the project site is located within three school districts. The portion of the Specific Plan located northwest of the Elverta Road/16th Street intersection is served by the Elverta Joint Elementary School District and the Twin Rivers Unified School District, overlapping districts that serve elementary and high school students respectively. The remainder of the Specific Plan area is located within the Center Unified School District that serves students from elementary through high school. The student-yield generation rates that were used to estimate number of students generated by Alternative A are listed in **Table 4.13-3 and 4.13-4** below. Near term estimates are based on 2,457 single-family dwelling units (10 units per acre or less) and zero multi-family units (10/20 units per acre). Long term full buildout estimates are based on 5,247 single-family dwelling units (10 units per acre or less) and 943 multi-family units (10/20 units per acre).

TABLE 4.13-3
NEAR TERM STUDENT YIELD GENERATION RATES FOR ALTERNATIVE A

Grade	Single-Family (Students per Dwelling Unit)[1]	Student Yield	Multi-family (Students per Dwelling Unit)[1]	Student Yield	Total Student Yield[2]
Elementary (K-5)	0.4154	1,021.0	0.1562	0	1,021
Middle (6-8)	0.1215	298.5	0.0498	0	299
High (9-12)	0.2295	563.9	0.0946	0	564

1. Generation rates derived from Elk Grove Unified School District's student yield generation rates as it is the nearest geographic school district with defined generation rates.
2. Rounded

SOURCE: ESA, 2012.

TABLE 4.13-4
FULL BUILDOUT STUDENT YIELD GENERATION RATES FOR ALTERNATIVE A

Grade	Single-Family (Students per Dwelling Unit)[1]	Student Yield	Multi-family (Students per Dwelling Unit)[1]	Student Yield	Total Student Yield[2]
Elementary (K-5)	0.4154	2,179.6	0.1562	147.3	2,327
Middle (6-8)	0.1215	637.5	0.0498	50.0	688
High (9-12)	0.2295	1,204.2	0.0946	89.2	1,293

1. Generation rates derived from Elk Grove Unified School District's student yield generation rates as it is the nearest geographic school district with defined generation rates.
2. Rounded

SOURCE: ESA, 2011.

As shown in **Tables 4.13-3** and **4.13-4**, implementation of Alternative A would generate approximately 1,021 new elementary school students (grades K-5) in the near term and 2,327 new elementary school students at full project buildout. Full buildout of the specific plan area includes two (2) 10-acre neighborhood elementary schools to serve students associated with both the Elverta and Center School Districts. School sites are located along the Loop Road in the center and northeast areas of the project site. Neighborhood trails tie each site into an overall system to allow for non-vehicular access from individual neighborhoods. It is intended that the Elverta District school site adjacent to the neighborhood park (center of the site) share both facilities and parking to maximize use.

Implementation of Alternative A would generate approximately 299 new middle school students (grades 6-8) and 564 new high school students (grades 9-12) in the near term and approximately 688 new middle school students and 1,293 new high school students (grades 9–12) at full specific plan buildout. Alternative A does not propose to dedicate a middle or high school site.

Public schools are funded through a number of mechanisms, primarily voter-approved State bonds, State-mandated developer fees, and taxes within Community Facilities Districts. With the planned school facilities on the project site and in the immediate vicinity, and the contribution of the project to developer fees and taxes, this impact would be less than significant.

Impact 13.8: Increased Demand for Libraries

As discussed on Section 3.13, library services are provided by the Sacramento Public Library (Public Library). Typical Public Library standards require one library to serve 50,000 residents. Based on this standard, the Specific Plan would not justify a new library, but would be required to contribute toward library facilities created to serve a larger community area. According to the Sacramento Public Library Facility Master Plan 2007-2025, the current 4,000 square foot Rio Linda Library located in the MarVal Shopping Center at the southeast end of town is too small to meet community needs. The Public Library is currently undergoing a needs assessment process and conceptual design for a new, enlarged library at a new, more centrally located site. This process will result in more detailed study of the community needs, service inadequacies of the existing library, and a conceptual design for a new library. Funding for the new library is also an ongoing part of this process. Development associated with Alternative A will be required to contribute its fair-share toward construction of the library; therefore impacts to libraries are considered less than significant.

Impact 13.9: Increased Demand for Recreation

Alternative A includes development of residential uses which are associated with increased demands on recreation facilities such as parks and open space with passive recreation opportunities. The project includes development of new recreation opportunities. In the near-term Alternative A includes over 14 acres of parkland and over 7 acres of open space. At full buildout Alternative A includes over 70 acres of active-use park lands and approximately 30 acres of open space land. In addition, proposed park and recreation areas far exceed the California's Quimby Act requirement to dedicate three to five acres of parkland per 1,000 residents. Due to the incorporation of recreational uses within the project, impacts to recreation would be less than significant.

4.13.2 Alternative B – Reduced Impact Alternative

Impact 13.1: Increased Demand for Municipal Water Service and Facilities

The total water demand was estimated using the demand factors from the SCWA Water System Infrastructure Plan (2006) which was used to estimate water demands at build-out of Zone 40. Although the project site is not in Zone 40; Zone 40 is the closest geographic area with established unit demand factors. Near term water demand associated with the issuing of project related permits is estimated to be 1,022 acre feet per year or an average of approximately 1 MGD (**Table 4.13-5**). The total water demand for Alternative B at full buildout is estimated to be 3,994 acre feet per year or on average 3.6 MGD (**Table 4.13-6**). The maximum daily demand is estimated to be approximately 7 MGD (twice the average daily demand).

TABLE 4.13-5
ALTERNATIVE B - NEAR TERM ANNUAL AVERAGE WATER DEMAND ESTIMATES

Area	Acreage	Demand Category	Unit Demand Factor (AFA/Year)	Water Demand (AF/Year)
Proposed Development				
Single Family Residential	264.2	Single Family	2.89	763.54
Multi-Family (10/20/30 units/acre)	11.7	Multi-Family Low Density	3.70	43.29
Commercial	3.9	Commercial	2.75	10.73
Park	15.5	Public Recreation	3.46	53.63
Drainage/Riparian Corridor	163.6	Right-of-Way	0.21	34.36
Open Space	6.3	Public Recreation	3.46	21.80
Major Roads/Other	65.5	Right-of-Way	0.21	13.76
Wetlands/Habitat Avoidance Area	44.5	Right-of-Way	0.21	9.35
Subtotal				950.46
Water System Losses (7.5%)				71
Proposed Development Total	**575.2**			**1,022**

1. Assumes 80,000 gallons per day with 5 hour operating weeks in wet season and 6 hour operating weeks in dry season for dust suppression based on similar projects.

SOURCE: SCWA, 2006; ESA, 2011.

TABLE 4.13-6
ALTERNATIVE B - ANNUAL AVERAGE WATER DEMAND ESTIMATES AT FULL BUILDOUT

Area	Acreage	Demand Category	Unit Demand Factor (AFA/Year)	Water Demand (AF/Year)
Proposed Development				
Single Family Residential	962.8	Single Family	2.89	2,782.5
Multi-Family (10/20/30 units/acre)	107.1	Multi-Family Low Density	3.70	396.27
Commercial	18.5	Commercial	2.75	50.88
School	9.9	Public	1.04	10.30
Park	79.1	Public Recreation	3.46	273.69
Drainage/Riparian Corridor	317.2	Right-of-Way	0.21	66.61
Detention	2.1	Right-of-Way	0.21	0.44
Open Space	25.3	Public Recreation	3.46	87.54
Major Roads/Other	78.9	Right-of-Way	0.21	16.57
Wetlands/Habitat Avoidance Area	143.7	Right-of-Way	0.21	30.18
Subtotal				3,714.98
Water System Losses (7.5%)				279
Proposed Development Total	**1,744.6**			**3,994**

1. Assumes 80,000 gallons per day with 5 hour operating weeks in wet season and 6 hour operating weeks in dry season for dust suppression based on similar projects.

SOURCE: SCWA, 2006; ESA, 2011.

As discussed above, there are sufficient and reliable water supplies available to serve the water demands of the project in addition to the public water systems' existing and planned future uses during normal, single-dry, and multiple-dry water years through 2030, assuming

compliance with the long-term regional groundwater and surface water resource management efforts associated with the Water Forum Agreement, the Sacramento Groundwater Authority, and Community Plan Policy PF-8. For the reasons listed above, this impact is considered less than significant.

Impact 13.2: Increased Demand for Municipal Wastewater Service and Facilities

Total wastewater demand for Alternative B would be similar to that required under Alternative A. As discussed above, the SSES recommended projects to correct capacity deficiencies in the existing CSD-1 trunk and SRCSD interceptor systems and to provide sewer service to all portions of the Urban Service Area with flows equal to or greater than 1 MGD. The SSES Master Plan included recommended trunk sewer and interceptor projects for the Rio Linda and Gibson Ranch/Antelope area. However, for all proposed development areas, further coordination with SASD and SRCSD would be required to ensure that adequate capacity is available in existing conveyance facilities and ensure that new infrastructure is developed as needed for proposed development. Additionally, uncertainty associated with the development of future trunk and interceptors in the Rio Linda and Elverta Community Plan area, as well as expansion of the SWRTP contribute to a potentially significant impact. However, with implementation of **Mitigation Measure 13.2** this impact is considered less than significant.

Impacts 13.3 through 13.6: Increased Demand for Solid Waste Disposal, Energy, Law Enforcement and Fire Protection Services

Increased demand for solid water disposal, energy, law enforcement and fire protection services resulting from implementation of Alternative B would be similar in nature to that of Alternative A and is therefore considered less than significant.

Impact 13.7: Increased Demands on Public School Facilities

As discussed in Section 3.13, the project site is located within three school districts. The portion of the Specific Plan located northwest of the Elverta Road/16th Street intersection is served by the Elverta Joint Elementary School District and the Twin Rivers Unified School District, overlapping districts that serve elementary and high school students respectively. The remainder of the Specific Plan area is located within the Center Unified School District that serves students from elementary through high school. The student-yield generation rates that were used to estimate number of students generated by Alternative B are listed in **Table 4.13-7** and **Table 4.13-8** below. Near term estimates are based on 1,725 single-family dwelling units (10 units per acre or less) and 730 multi-family units (10/20/30 units per acre). Long term full buildout estimates are based

on 3,768 single-family dwelling units (10 units per acre or less) and 2,421 multi-family units (10/20/30 units per acre).

TABLE 4.13-7
NEAR TERM STUDENT YIELD GENERATION RATES FOR ALTERNATIVE B

Grade	Single-Family (Students per Dwelling Unit)[1]	Student Yield	Multi-family (Students per Dwelling Unit)[1]	Student Yield	Total Student Yield[2]
Elementary (K-5)	0.4154	716.6	0.1562	114.0	831
Middle (6-8)	0.1215	209.6	0.0498	36.4	246
High (9-12)	0.2295	395.9	0.0946	69.1	465

1. Generation rates derived from Elk Grove Unified School District's student yield generation rates as it is the nearest geographic school district with defined generation rates.
2. Rounded

SOURCE: ESA, 2011.

TABLE 4.13-8
FULL BUILDOUT STUDENT YIELD GENERATION RATES FOR ALTERNATIVE B

Grade	Single-Family (Students per Dwelling Unit)[1]	Student Yield	Multi-family (Students per Dwelling Unit)[1]	Student Yield	Total Student Yield[2]
Elementary (K-5)	0.4154	1,565.2	0.1562	378.2	1,943
Middle (6-8)	0.1215	457.8	0.0498	120.6	578
High (9-12)	0.2295	864.8	0.0946	229.0	1,094

1. Generation rates derived from Elk Grove Unified School District's student yield generation rates as it is the nearest geographic school district with defined generation rates.
2. Rounded

SOURCE: ESA, 2011.

As shown in **Table 4.13-7**, near-term project implementation would generate approximately 831 new elementary school students (grades K-5), 246 middle school students (grades 6-8), and 465 new high school students (grades 9-12). No new schools are proposed in the near-term.

As shown in **Table 4.13-8**, implementation of Alternative B would generate approximately 1,943 new elementary school students (grades K–5) at project buildout. Alternative B includes one (1) 10-acre neighborhood elementary schools to serve students associated with both the Elverta and Center School Districts.

Also shown in **Table 4.13-8**, implementation of Alternative B would generate approximately 578 new middle school students (grades 6–8) and approximately 1,094 new high school students (grades 9–12) at buildout. Alternative B does not propose to dedicate a middle or high school site.

Public schools are funded through a number of mechanisms, primarily voter-approved State bonds, State-mandated developer fees, and taxes within Community Facilities Districts. With the planned school facilities and the contribution of the project to developer fees and taxes, this impact would be less than significant.

Impact 13.8: Increased Demand for Libraries

Increased demand on libraries resulting from implementation of Alternative B would be similar in nature to that of Alternative A and is therefore considered less than significant.

Impact 13.9: Increased Demand for Recreation

Alternative B includes development of residential uses which are associated with increased demands on recreation facilities such as parks and open space with passive recreation opportunities. The project includes development of new recreation opportunities. In the near-term, the project includes over 15 acres of parkland and over 6 acres of open space. At full buildout, Alternative B includes nearly 80 acres of active-use park lands and approximately 25 acres of open space land. In addition, proposed park and recreation areas far exceed the California's Quimby Act requirement to dedicate three to five acres of parkland per 1,000 residents. Due to the incorporation of recreational uses within the project, impacts to recreation would be less than significant.

4.13.3 Alternative C – Approved Specific Plan with 25% Density Bonus

Impacts 13.1 through 13.9: Increased Demand for Public Services

Increased demand on public services, utilities, and recreation resulting from implementation of Alternative C would be the same of those to that of Alternative A, and is therefore considered less than significant. Any new development would be required to pay a fair share of the cost of providing service to the project site and thus impacts to public services would be less than significant. These fees may be paid through property taxes (including improvements) or through fee programs developed by the County.

4.13.4 Alternative D – No Permit Alternative

Impacts 13.1 through 13.9: Increased Demand for Public Services

Similar to the previous alternatives, total water demand was estimated using the demand factors from the SCWA Water System Infrastructure Plan (2006) which was used to estimate water demands at build-out of Zone 40. Although the project site is not in Zone 40; Zone 40 is the closest geographic area with established unit demand factors. Near term water demand associated with Alternative D is estimated to be 1,702 acre feet per year or an average of 1.5 million gallons per day (MGD) (**Table 4.13-9**). The total water demand for Alternative D is estimated to be 4,312

acre feet per year at full build out or on average 3.8 MGD (**Table 4.13-10**). The maximum daily demand at full build out is estimated to be 7.7 MGD (twice the average daily demand).

TABLE 4.13-9
ALTERNATIVE D - NEAR TERM ANNUAL AVERAGE WATER DEMAND ESTIMATES

Area	Acreage	Demand Category	Unit Demand Factor (AFA/Year)	Water Demand (AF/Year)
Proposed Development				
Single Family Residential	547.7	Single Family	2.89	1,582.85
Subtotal				1,582.85
Water System Losses (7.5%)				119
Proposed Development Total	**547.7**			**1,702**

1. Assumes 80,000 gallons per day with 5 hour operating weeks in wet season and 6 hour operating weeks in dry season for dust suppression based on similar projects.
SOURCE: SCWA, 2006; ESA, 2011.

TABLE 4.13-10
ALTERNATIVE D - ANNUAL AVERAGE WATER DEMAND ESTIMATES AT FULL BUILDOUT

Area	Acreage	Demand Category	Unit Demand Factor (AFA/Year)	Water Demand (AF/Year)
Proposed Development				
Single Family Residential	1,388.0	Single Family	2.89	4,011.32
Subtotal				4,011.32
Water System Losses (7.5%)				301
Proposed Development Total	**1,388.0**			**4,312**

1. Assumes 80,000 gallons per day with 5 hour operating weeks in wet season and 6 hour operating weeks in dry season for dust suppression based on similar projects.
SOURCE: SCWA, 2006; ESA, 2011.

As previously discussed, the project site is located within three school districts. The portion of the Specific Plan located northwest of the Elverta Road/16th Street intersection is served by the Elverta Joint Elementary School District and the Twin Rivers Unified School District, overlapping districts that serve elementary and high school students respectively. The remainder of the Specific Plan area is located within the Center Unified School District that serves students from elementary through high school. The student-yield generation rates that were used to estimate number of students generated by Alternative D are listed in **Table 4.13-11** below. Near term estimates are based on 530 single-family dwelling units (10 units per acre or less). Long term full buildout estimates are based on 827 single-family dwelling units (10 units per acre or less).

TABLE 4.13-11
STUDENT YIELD GENERATION RATES FOR ALTERNATIVE D

Grade	Single-Family (Students per Dwelling Unit)[1]	Student Yield (Near Term)	Student Yield (Full Buildout)
Elementary (K-5)	0.4154	220.2	343.5
Middle (6-8)	0.1215	64.40	100.5
High (9-12)	0.2295	121.6	189.8

1. Generation rates derived from Elk Grove Unified School District's student yield generation rates as it is the nearest geographic school district with defined generation rates.
2. Rounded

SOURCE: ESA, 2011.

As shown in **Table 4.13-11**, implementation of Alternative D would generate approximately 220 new elementary school students (grades K-5), approximately 64 new middle school students (grades 6-8) and 122 new high school students (grades 9-12) in the near term. At full buildout, Alternative D generate approximately 344 new elementary school students, 100 new middle school students and 190 new high school students. Alternative D does not include the dedication of any new schools.

Similar to the previous alternatives, potential future development under Alternative D would have a less-than-significant impact to public services, utilities, or recreation. Any new development would be required to pay a fair share of the cost of providing service to the project site and thus impacts to public services would be less than significant. These fees may be paid through property taxes (including improvements) or through fee programs developed by the County.

4.13.5 References

CalRecycle, 2010. Solid Waste Information System (SWIS) Facility/Site Summary Details for the Sacramento County Landfill (Kiefer). Available online at: http://www.calrecycle.ca.gov/SWFacilities/Directory/34-AA-0001/Detail/.

DERA, 2007. Final Environmental Impact Report – Elverta Specific Plan and Associated Subdivision Map Known as Countryside Equestrian Estates. County of Sacramento Department of Environmental Review and Assessment Published May 2007.

Sacramento County, 2010. Sacramento County General Plan Update Final EIR. April 2010. Available online at: http://www.dera.saccounty.net/PublicNotices/SQLView/ProjectDetails/tabid/71/Default.aspx?ProjectID=31418. Accessed October 18, 2010

Sacramento Public Library Authority Board, 2007. Sacramento Public Library Authority Board Facility Master Plan 2007-2025. March 2007.

Sacramento Regional County Sanitation District (SRCSD), 2000. Interceptor System Master Plan. Available online at: http://www.srcsd.com/masterplanning.php#IMP2000. Accessed November 10, 2010.

SCWA, 2006. Zone 40 Water System Infrastructure Plan. April 2006 Available online at: http://www.msa2.saccounty.net/dwr/Pages/Reports-WSIP.aspx . Accessed November 10, 2010.

U.S. Census Bureau, 2010. State and County QuickFacts: Sacramento County, California. Available at: http://quickfacts.census.gov/qfd/states/06/06067.html; accessed February

This Page is Intentionally Left Blank

4.14 Transportation and Traffic

This section describes the environmental consequences of the analyzed alternatives on the study intersections, roadway segments, and freeway facilities.

Thresholds of Significance

Because the project alternatives under consideration would cause traffic impacts on roadways that are under State, County, and City jurisdictions, this analysis was conducted using a combination of policies and guidelines.

Signalized Intersections

Based on the applicable planning documents for each jurisdiction within the study area, a signalized intersection impact is considered significant if the addition of project-generated traffic under the alternatives would cause any of the following:

- A signalized intersection in Sacramento County within the Urban Service Area operating at an acceptable Level of Service (LOS) E or better to degrade to an unacceptable LOS F
- A signalized ramp terminal intersection within Caltrans' jurisdiction operating at an acceptable LOS E or better to degrade to an unacceptable LOS F
- A signalized intersection in Sacramento County outside the Urban Service Area, the City of Sacramento, Sutter County, or Placer County adjacent to Placer Vineyards frontage operating at an acceptable LOS D or better to degrade to an unacceptable LOS E or LOS F
- A signalized intersection in Placer County or the City of Roseville operating at an acceptable LOS C or better to degrade to an unacceptable LOS D, LOS E, or LOS F
- An increase in the average intersection delay of five seconds or more at a signalized intersection operating (or projected to operate) at an unacceptable level

Note that the average delay threshold of significance is consistent with thresholds used in various jurisdictions within California, including but not limited to Sacramento County.

Unsignalized Intersections

Based on the applicable planning documents for each jurisdiction within the study area, an unsignalized intersection impact is considered significant if the addition of project-generated traffic under alternatives would cause any of the following:

- An unsignalized intersection in Sacramento County within the Urban Service Area operating at an acceptable LOS E or better to degrade to an unacceptable LOS F
- An unsignalized ramp terminal intersection within Caltrans' jurisdiction operating at an acceptable LOS E or better to degrade to an unacceptable LOS F
- An unsignalized intersection in Sacramento County outside the Urban Service Area, the City of Sacramento, Sutter County, or Placer County adjacent to Placer Vineyards

frontage operating at an acceptable LOS D or better to degrade to an unacceptable LOS E or LOS F

- An unsignalized intersection in Placer County or the City of Roseville operating at an acceptable LOS C or better to degrade to an unacceptable LOS D, LOS E, or LOS F
- An increase of five seconds or more of control delay at an unsignalized intersection operating (or projected to operate) at an unacceptable level

Note that the control delay threshold of significance is consistent with thresholds used in various jurisdictions within California, including but not limited to Sacramento County.

Roadway Segments

Based on the LOS policy in each jurisdiction's General Plan, a roadway segment impact is considered significant if the addition of project-generated traffic under the alternatives would cause any of the following:

- A roadway segment in Sacramento County within the Urban Service Area operating at an acceptable LOS E or better to degrade to an unacceptable LOS F
- A roadway segment in Sacramento County outside the Urban Service Area, the City of Sacramento, Sutter County, or Placer County adjacent to Placer Vineyards frontage operating at an acceptable LOS D or better to degrade to an unacceptable LOS E or LOS F
- A roadway segment in Placer County or the City of Roseville operating at an acceptable LOS C or better to degrade to an unacceptable LOS D, LOS E, or LOS F
- An increase in the volume-to-capacity (V/C) ratio of 0.05 or more on a roadway segment operating (or projected to operate) at an unacceptable level

Note that the V/C ratio threshold of significance is consistent with thresholds used in various jurisdictions within California, including but not limited to Sacramento County.

Freeway Segments

Based on the Caltrans 2010 SR 99 Transportation Corridor Concept Report (TCCR), a freeway-segment impact is considered significant if the addition of project-generated traffic under the alternatives would cause either of the following:

- A freeway mainline segment operating at an acceptable LOS E to deteriorate to an unacceptable LOS F
- An increase of 10 trips or more to a freeway segment that is operating (or projected to operate) at an unacceptable level (volume projections for future conditions are rounded to the nearest 10. Therefore, using this threshold is consistent with the rounding of future forecasts. This threshold is consistent with other studies conducted in the Sacramento region.)

Freeway Ramp Junctions (Merge and Diverge)

Freeway ramp junctions consist of on-ramps (merge point) and off-ramps (diverge point). Based on the SR 99 TCCR (Caltrans, 2010), a freeway ramp merge or diverge impact is considered significant if the addition of project-generated traffic under the alternatives would cause either of the following:

- A freeway ramp merge or diverge junction operating at an acceptable LOS E to deteriorate to an unacceptable LOS F
- An increase of 10 trips or more to a freeway ramp that is operating (or projected to operate) at an unacceptable LOS F (volume projections for future conditions are rounded to the nearest 10; see "Freeway Segments" above.)

Bicycle, Pedestrian, and Transit Facilities

Based on the applicable planning documents for each jurisdiction within the study area, a bicycle, pedestrian, or transit facility impact is considered significant if the alternatives would do any of the following:

- Eliminate or adversely affect an existing bikeway, pedestrian facility, or transit facility in a way that would discourage its use
- Interfere with the implementation of a planned bikeway as shown in the *2010 City/County Bikeway Master Plan* (City of Sacramento and County of Sacramento, 1995), conflict with the *Pedestrian Master Plan* (Sacramento County, 2007), or conflict with any future transit facility
- Result in unsafe conditions for bicyclists or pedestrians.
- Result in demands to transit facilities greater than there is adequate capacity to accommodate

Analysis Methodology

This section describes the methodology used to calculate the LOS for each intersection, roadway segment, and freeway facility.

Intersections

Intersections were analyzed using the methodologies in the *Highway Capacity Manual* (HCM), for signalized and unsignalized intersections (Transportation Research Board, 2000). The HCM methodology estimates the delay experienced by vehicles traveling through the intersection and determines LOS for varying ranges of delay. Signalized intersection delay is calculated using the Synchro 6.0 software. In addition to delay, Synchro provides queue length estimates for each turning movement. For closely spaced intersections or congested locations, the queue length estimates are used to better understand traffic operating conditions and whether queuing extends between intersections. If this occurs, traffic operations may be worse than reported by conventional analysis techniques that don't consider queuing.

LOS for unsignalized intersections is based on control delay similar to the HCM methodology for signalized intersections. At all-way stop-controlled intersections, LOS is based on the average delay experienced on all approaches. At side-street stop-controlled intersections, LOS is calculated for each movement, not for the intersection as a whole. Specific delay ranges and corresponding LOS thresholds for signalized and unsignalized intersections are presented in **Appendix F.**

To determine whether traffic signals should be installed at an unsignalized intersection, signal warrants are typically reviewed. This consists of reviewing traffic volumes, proximity of the intersection to other signals and to schools, accident frequency, and other factors against a set of warrants identified in the California Manual on Uniform Traffic Control Devices (MUTCD) to identify whether installing a traffic signal would be appropriate (Caltrans, 2012).[1]

Roadway Segments

Roadway segments were analyzed by comparing the average daily traffic volume to daily volume thresholds specific to each jurisdiction in the study area. The use of daily traffic volumes for the analysis of roadway segments is the preferred methodology for the analysis of roadway segment operations. These thresholds are used as guidelines to identify the need for new or upgraded facilities based on daily traffic volumes. The daily volume thresholds for various roadway facility types in Sacramento County, Sutter County, Placer County, and the City of Sacramento are presented in **Appendix F.**

All study roadways are assumed to be arterials with moderate access control. The City of Roseville does not specify daily volume thresholds; therefore, the Placer County thresholds were used to analyze the segments of Baseline Road that run along the Placer County/City of Roseville boarder.

Freeway Facilities

Freeway mainline segments and ramp junctions (merges from on-ramps, and diverges onto off-ramps) were analyzed using HCM procedures. The HCM defines LOS for mainline segments and ramp junctions based on the density of freeway traffic in the ramp junction influence area. Detailed description freeway mainline and ramp junction LOS criteria is presented in **Appendix F.**

Project Descriptions and Alternatives

In general, all project alternatives except for the No Permit Alternative (Alternative D) have about the same number of dwellings (at different residential densities), with varying amounts of non-residential land use. The No Permit Alternative would entail a much lower level of development,

[1] Warrants for traffic signal installation at unsignalized intersections were evaluated based on the peak-hour volume warrant, which is a subset of eight traffic-signal warrants recommended in the MUTCD and associated Caltrans guidelines. The peak hour signal warrant analysis should not serve as the only basis for deciding whether and when to install a signal. To reach such a decision, the full set of warrants should be investigated based on field-measured traffic data, and a thorough study of traffic and roadway conditions.

with many fewer dwelling units than the other three alternatives, and no retail space, office space, or schools. See **Appendix F** for comparison of trip-generating land uses for each alternative.

Alternatives A, B and C all propose an internal loop road, which would help to distribute project traffic onto the surrounding facilities. This two-lane roadway would intersect 16th Street, Dry Creek Road, and Elverta Road. Under these alternatives, Dry Creek Road would extend north of U Street to intersect the loop road.

Trip Generation Estimates

The trip generation estimates were developed for each land use type. The estimates were developed by applying the trip rates from *Trip Generation*, 8th Edition (Institute of Transportation Engineers, 2008), then adjusted for internal and pass-by trips. An *internal trip* is one that begins and ends within the project site. A *pass-by trip* occurs when a motorist stops en route to their primary destination (typically occurring at retail-based land uses, like gas stations or grocery stores). Detailed descriptions of internal trips and pass-by trips are presented in **Appendix F**.

For Alternative A, 23 percent of all project trips would be internal to the project site. Approximately 50 percent of retail trip ends, 40 percent of office trip ends, and 80 percent of school trip ends are expected to be internalized. These rates are based on the alternative's land uses, the proximity of comparable land use, and trip purpose. The pass-by reduction is 15 percent in the AM peak hour and 25 percent for Daily and the PM peak hour. The pass-by reduction was applied after the internalization reduction. The net trip generation is developed by subtracting the internal and pass-by trips from the gross trip generation. Trip generation for Alternative A and other alternatives are presented in **Appendix F**.

As shown in **Table 4.14-1**, Alternative A would generate about 54,444 net new vehicle trips per day, with about 4,110 trips during the AM peak hour and about 5,690 trips during the PM peak hour. The estimated trip generation for the other alternatives was developed in the same manner, and is shown in **Table 4.14-2**.

Existing Plus Project Traffic Volumes

The existing plus project traffic volumes were developed by adding the trips generated by each alternative to the existing traffic volumes, based on the expected trip distribution of the alternatives. Each alternative is expected to have the same or similar trip distribution patterns. A figure showing existing plus project trip distribution is presented in **Appendix F**. The trip distribution was developed using a version of the Sacramento Regional Travel Demand Model (SACMET) base year travel demand forecasting (TDF) model that was validated to the existing conditions of this project. The validation process includes evaluating the TDF model based on the criteria in the *Travel Forecasting Guidelines* (Caltrans, 1992). Refer to **Appendix F** for the validation results.

Regional Impacts

While most of the environmental consequences analyses in **Chapter 4** of this EIS focus on the impacts of developing the initial phase (participating parcels) of the Plan, the analyses of Transportation and Traffic (**Section 4.14**), Air Quality and Global Climate Change (**Section 4.3**), and Noise (**Section 4.12**) are considered more regional and not driven by the specific footprints of the participating parcels. This is because the 404 permit application package for the participating parcels in the Plan area includes an application for the development of the roadway infrastructure that would serve not only the participating parcels, but the entire Plan area. Because the proposed roadway infrastructure would allow for the full buildout of the Plan area, the impact analysis for these more regional resource areas (Air, Noise, and Traffic) evaluate the potential impacts of the full buildout of the Plan area in their specific impact discussions. Thus, Transportation and Traffic (Section 4.14) evaluates the potential impacts of the full buildout of the Plan area.

Cumulative Travel Demand Forecasts

The cumulative no project and cumulative plus alternative traffic volume forecasts were developed using the most recent version of the SACMET regional TDF model, which is based on the Sacramento Area Council of Governments 2035 Metropolitan Transportation Plan (MTP). A complete description of the SACMET model, land use assumptions, and future roadway improvement assumptions used for project-level application is presented in **Appendix F**.

Analysis Results

This section presents the analysis results for the Alternative A scenario. Because the other alternatives, with the exception of the No Permit Alternative, would maintain the same land use totals and vary only by density and location, analysis for the other alternatives are limited to the five intersections and ten roadway segments where variation in traffic flows between alternatives would be most substantial. Because the No Permit Alternative would develop a much lower number of residential dwelling units than the other three alternatives, and no retail space, office space, or schools, analysis for the No Permit Alternative focuses on roadway segments (with a qualitative assessment of intersections). See **Appendix F** for figures and tables showing LOS results at study intersections, roadway segments, and freeway mainline segments under the Existing Plus Project, and Cumulative, scenarios.

TABLE 4.14-1
PROJECT TRIP GENERATION – ALTERNATIVE A

Land Use (ITE Code)	Amount	Daily		AM Peak Hour				PM Peak Hour			
					Trips				Trips		
		Trip Rate [a]	Trips	Trip Rate [a]	Total	In	Out	Trip Rate [a]	Total	In	Out
Single-Family Homes (210)	5,317 units	9.57	50,884	0.75	3,988	997	2,991	1.01	5,370	3,383	1,987
Apartments (220)	873 units	6.65	5,805	0.51	445	89	356	0.62	541	352	189
Retail (820)	233,000 sq. ft.	50.54	11,755	1.09	253	155	99	4.81	1,120	549	571
Office (710)	48,000 sq. ft.	15.79	758	2.17	104	92	13	2.76	133	23	110
School (520)	1,200 students	1.29	1,548	0.45	540	297	243	0.15	180	88	92
	Gross Trip Generation		70,751		5,331	1,629	3,701		7,344	4,395	2,949
	Internalized Trip End Reduction		-14,838		-1,202	-704	-496		-1,514	-708	-806
	Pass-by Trip Reduction		-1,469		-19	-12	-7		-140	-69	-71
	Net Trip Generation		54,444		4,110	914	3,198		5,690	3,618	2,072
	Total Trip Reduction		23%		23%	44%	14%		23%	18%	30%

a Residential and school trips are based on average rates (per dwelling unit and per student), while retail and office trips are based on the best-fit equations (per 1,000 square feet of floor area). Retail and Office land use assumes a floor-to-area ratio (FAR) of 0.30.

SOURCES: RCH Group, February 2010 and Fehr & Peers, 2010, using trip rates published by the Institute of Transportation Engineers, *Trip Generation*. 8th Edition. 2008.

TABLE 4.14-2
COMPARISON OF TRIP GENERATION BY PROJECT ALTERNATIVE

Time Period		Alternative A	Alternative B	Alternative C	Alternative D [a]
AM Peak Hour	In	914	910	918	n/a
	Out	3,198	3,102	3,197	n/a
PM Peak Hour	In	3,618	3,399	3,624	n/a
	Out	2,072	1,937	2,081	n/a
Daily	Total	54,444	51,890	54,621	7,914

a. Because the No Permit Alternative's trip generation is minimal related to the other Project Alternatives, peak-hour trip generation was not deemed necessary for impact determinations at intersections.

SOURCE: Fehr & Peers, 2010.

4.14.1 Alternatives A, B and C

Impact 14.1: Deterioration or Worsening of Existing Roadway Segment LOS

Implementation of these alternatives would increase daily traffic volumes on roadway segments within the study area. Specific locations and LOS results are presented in Appendix F. This impact is considered significant and adverse.

Mitigation Measures

For the following mitigation, measures within Sacramento County are subject to County approval. It should be noted that widening to County Improvement Standards may require the addition of a median, and/or additional turn lanes as part of the mitigation.

Measure 14.1a: Widen Baseline Road from Walerga Road to Cook-Riolo Road from two to four lanes.

Implementation of this improvement would restore operations to LOS A.

Measure 14.1b: Widen Elverta Road from SR 99 to Watt Avenue from two to four lanes.

Implementation of this improvement would restore operations to LOS A between SR 99 and Palladay Road and LOS E from 16th Street to Watt Avenue. The project site frontage is already assumed to be widened.

Measure 14.1c: Widen Watt Avenue from Elverta Road to Don Julio Boulevard from four to six lanes.

Implementation of this improvement would restore operations to LOS D or better.

Measure 14.1d: Widen Dry Creek Road from Ascot Avenue to Elkhorn Boulevard from two to four lanes.

Implementation of this improvement would restore operations to LOS A.

Measure 14.1e: Widen Raley Boulevard from I-80 to Ascot Avenue from two to four lanes.

Implementation of this improvement would restore operations to LOS A.

Significance after Mitigation: Significant and adverse.

If implemented, these improvements would reduce effects to less-than-significant for all but one roadway segment (Watt Avenue from Roseville Road to I-80, see **Appendix F**). However, the feasibility of these improvements is uncertain for the following reasons:

- Potential adverse effects associated with acquiring and using necessary right-of-way. These effects could include disruption, displacement, or destruction of businesses, sensitive plants or animal species, as well as increases in impervious surfaces.
- Lack of authority to implement mitigation improvements. The County of Sacramento does not have jurisdiction to make roadway improvements outside its area of governance.
- Inconsistency with the General Plan, requiring a General Plan Amendment (Measures 14.1a and 14.1e).
- Lack of secure funding for improvements beyond the 2035 MTP project list. Funding mechanisms do not currently exist to generate funding beyond the levels projected for the 2035 MTP project list.

The significant effects on Watt Avenue from Roseville Road to I-80 under existing plus project conditions could be mitigated by increasing the roadway capacity. However, these mitigations would be inconsistent with the General Plan, lack a funding source, and may cause further operational deficiencies along the Watt Avenue corridor.

Impact 14.2: Deterioration or Worsening of Existing Intersection LOS

Implementation of these alternatives would increase AM and PM peak hour intersection traffic volumes at intersections within the study area. Specific locations, mitigation measures, and LOS results are presented in **Appendix F**. This impact is considered significant and adverse.

Mitigation Measures

For the following mitigation, measures within Sacramento County are subject to County approval. It should be noted that widening to County Improvement Standards may require the addition of a median, and/or additional turn lanes as part of the mitigation. **Measure 14.2a:** The project proponent shall pay their fair share toward the planned construction of a grade-separated SR 99 / Elverta Road interchange.

Measure 14.2b: Install a traffic signal at SR 99 Northbound Off-Ramp / Elkhorn Boulevard.

Implementation of this improvement would restore operations to LOS D or better in the AM and PM peak hours.

Measure 14.2c: Install a traffic signal; install northbound and southbound left-turn lanes; and widen the eastbound and westbound approaches to include one left-turn lane, one through lane; and a shared through/right-turn lane on each approach at Elverta Road / East Levee Road.

Implementation of this improvement would restore operations to LOS B or better in the AM and PM peak hours.

Measure 14.2d: Install a traffic signal; install northbound and southbound left-turn lanes; and widen the eastbound and westbound approaches to include one left-turn lane, one through lane, and a shared through/right-turn lane on each approach at Elverta Road / Sorento Road.

Implementation of this improvement would restore operations to LOS B in the AM and PM peak hours.

Measure 14.2e: Install a traffic signal; install northbound and southbound left-turn lanes; and widen the eastbound and westbound approaches to include one left-turn lane, one through lane, and a shared through/right-turn lane on each approach at Elverta Road / Elwyn Road.

Implementation of this improvement would restore operations to LOS B or better in the AM and PM peak hours.

Measure 14.2f: Install a traffic signal; widen eastbound approach to include one through lane, and a shared through/right-turn lane; and widen the westbound approach to include one left-turn lane and two through lanes at Elverta Road / Rio Linda Boulevard.

Implementation of this improvement would restore operations to LOS B or better in the AM and PM peak hours.

Measure 14.2g: Install a traffic signal and install northbound and southbound left-turn lanes at U Street / Dry Creek Road.

Implementation of this improvement would restore operations to LOS B or better in the AM and PM peak hours.

Measure 14.2h: Install a traffic signal and install exclusive left-turn lanes on each approach at Q Street / Dry Creek Road.

Implementation of this improvement would restore operations to LOS D or better in the AM and PM peak hours.

Measure 14.2i: Install a traffic signal; widen the northbound approach to include one left-turn lane, one through lane, and one right-turn lane; widen eastbound approach to include one left-turn lane, two through lanes, and one right-turn lane; widen southbound approach to include two left-turn lanes and one shared through/right-turn lane; and widen westbound approach to include one left-turn lane, one through lane, and one shared through/right-turn lane at Elverta Road / 16th Street.

Implementation of this improvement would restore operations to LOS E or better in the AM and PM peak hours.[2]

Measure 14.2j: Widen the northbound approach to include one left-turn lane and one right-turn lane; widen the eastbound approach to include two through lanes and one right-turn lane; and widen the westbound approach to include one left-turn lane and two through lanes at Elverta Road / 28th Street.

Implementation of this improvement would restore operations to LOS C or better in the AM and PM peak hours.

Measure 14.2k: Optimize the traffic signal (reallocate the green time by approach) at Baseline Road / Watt Avenue.

Implementation of this improvement would restore operations to LOS D or better in the AM and PM peak hours.

Measure 14.2l: Install one additional eastbound right-turn lane at Elverta Road / Watt Avenue.

Implementation of this improvement would restore operations to LOS E or better in the AM and PM peak hours.

Significance after Mitigation: Significant and adverse.

If implemented, these improvements would reduce effects to less-than-significant for all intersections; LOS results are presented in **Appendix F**. However, the feasibility of these improvements is uncertain for the following reasons:

- Potential adverse effects associated with acquiring and using necessary right-of-way. These effects could include disruption, displacement, or destruction of businesses, sensitive plants or animal species, as well as increases in impervious surfaces.
- Lack of authority to implement mitigation improvements. The County of Sacramento does not have jurisdiction to make roadway improvements outside its area of governance.
- Lack of secure funding for improvements beyond the 2035 MTP project list. Funding mechanisms do not currently exist to generate funding beyond the levels projected for the 2035 MTP project list.

Impact 14.3: Deterioration or Worsening of Existing Freeway Mainline, Merge, and Diverge LOS

Implementation of these alternatives would increase AM and PM peak hour traffic volumes on the freeway mainline and ramp merge and diverge junctions within the study area. Specific locations and LOS results are presented in **Appendix F**.

---

[2] Note: some of these improvements are assumed to be installed as part of the project (see Figure 3.14-9 in **Appendix F**).

Mitigation Measures

Measure 14.3: Widen SR 99 between I-5 and Elkhorn Boulevard to provide one additional lane in each direction.

Implementation of this improvement would restore freeway mainline and ramp merge/diverge operations to LOS D or better in the AM and PM peak hours.

Significance after Mitigation: Significant and adverse.

If implemented, these improvements would reduce effects to less-than-significant for all freeway facilities; LOS results are presented in **Appendix F**. However, the feasibility of these improvements is uncertain for the following reasons:

- Potential adverse effects associated with acquiring and using necessary right-of-way. These effects could include disruption, displacement, or destruction of businesses, sensitive plants or animal species, as well as increases in impervious surfaces.
- Lack of authority to implement mitigation improvements. The County of Sacramento does not have jurisdiction to make roadway improvements outside its area of governance.
- Lack of secure funding for improvements beyond the 2035 MTP project list. Funding mechanisms do not currently exist to generate funding beyond the levels projected for the 2035 MTP project list.

Impact 14.4: Deterioration or Worsening of Cumulative Roadway Segment LOS

Implementation of these alternatives would increase daily traffic volumes on roadway segments within the study area. Specific locations and LOS results are presented in **Appendix F**. This impact is considered significant and adverse.

Mitigation Measures

For the following mitigation, measures within Sacramento County are subject to County approval. It should be noted that widening to County Improvement Standards may require the addition of a median, and/or additional turn lanes as part of the mitigation.

Mitigation Measure 14.4a: Widen Elverta Road from 16th Street to 28th Street from four to six lanes.

Implementation of this improvement would restore operations to LOS B.

Mitigation Measure 14.4b: Widen Watt Avenue from Elverta Road to Antelope Road from four to six lanes.

The roadway would continue to operate at LOS F with implementation of this improvement; however, the V/C ratio would be restored to better than cumulative "no project" levels.

Mitigation Measure 14.4c: Implement Mitigation Measures 14.1d (Widen Dry Creek Road from Ascot Avenue to Elkhorn Boulevard from two to four lanes).

Implementation of this improvement would restore operations to LOS A.

Significance after Mitigation: Significant and adverse.

If implemented, these improvements would reduce the effects to less-than-significant for all but one roadway segment (see **Appendix F**). However, the feasibility of these improvements is uncertain for the following reasons:

- Potential adverse effects associated with acquiring and using necessary right-of-way. These effects could include disruption, displacement, or destruction of businesses, sensitive plants or animal species, as well as increases in impervious surfaces.
- Lack of authority to implement mitigation improvements. The County of Sacramento does not have jurisdiction to make roadway improvements outside its area of governance.
- Inconsistency with the General Plan, requiring a General Plan Amendment (Measure 14.1c).
- Lack of secure funding for improvements beyond the 2035 MTP project list. Funding mechanisms do not currently exist to generate funding beyond the levels projected for the 2035 MTP project list.

The significant effects on Watt Avenue from Elkhorn Boulevard to Don Julio Boulevard under cumulative plus project conditions could be mitigated by increasing the roadway capacity. However, these mitigations would be inconsistent with the General Plan, lack a funding source, and may cause further operational deficiencies along the Watt Avenue corridor.

Impact 14.5: Deterioration or Worsening of Cumulative Intersection LOS

Implementation of these alternatives would increase AM and PM peak hour intersection traffic volumes at intersections within the study area. Specific locations, mitigation measures, and LOS results are presented in **Appendix F**. This impact is considered significant and adverse.

Mitigation Measures

Measure 14.5a: Implement Mitigation measure 14.2b (Install traffic signal at SR 99 Northbound Off-Ramp / Elkhorn Boulevard) and restripe the northbound approach to include one shared left/right-turn lane and an exclusive right-turn lane at SR 99 Northbound Off-Ramp / Elkhorn Boulevard.

Implementation of this improvement would restore operations to LOS C or better in the AM and PM peak hours.

Measure 14.5b: Implement Mitigation Measure 14.2c (Install a traffic signal and implement lane reconfiguration at Elverta Road / East Levee Road).

Implementation of this improvement would restore operations to LOS C or better in the AM and PM peak hours.

Measure 14.5c: Install a traffic signal at Elkhorn Boulevard / East Levee Road.

Implementation of this improvement would restore operations to LOS B or better in the AM and PM peak hours.

Measure 14.5d: Implement Mitigation Measure 14.2d (Install a traffic signal and implement lane reconfiguration at Elverta Road / Sorento Road).

Implementation of this improvement would restore operations to LOS B in the AM and PM peak hours.

Measure 14.5e: Implement Mitigation Measure 14.2e (Install a traffic signal and implement lane reconfiguration at Elverta Road / Elwyn Road).

Implementation of this improvement would restore operations to LOS E or better in the AM and PM peak hours.

Measure 14.5f: Implement Mitigation Measure 14.2f (Install a traffic signal and implement lane reconfiguration at Elverta Road / Rio Linda Boulevard).

Implementation of this improvement would restore operations to LOS B or better in the AM and PM peak hours.

Measure 14.5g: Install a traffic signal at Elverta Road/9th Street.

Implementation of this improvement would restore operations to LOS B or better in the AM and PM peak hours.

Measure 14.5h: Implement Mitigation Measure 14.2h (Install a traffic signal and install exclusive left-turn lanes on each approach at Q Street / Dry Creek Road).

Implementation of this improvement would restore operations to LOS C or better in the AM and PM peak hours.

Measure 14.5i: Optimize the traffic signal (reallocate the green time by approach) at Elverta Road / 28th Street.

Implementation of this improvement would restore operations to LOS E or better in the AM and PM peak hours.

Measure 14.5j: Subject to County approval, install right-turn overlap traffic signal phase for eastbound and westbound approaches at Elverta Road / Watt Avenue.

Implementation of this improvement would restore operations to better than "no project" conditions in the AM and PM peak hours.

Significance after Mitigation: Significant and adverse.

If implemented, these improvements would reduce effects to less-than-significant for all intersections; LOS results are presented in **Appendix F**. However, the feasibility of these improvements is uncertain for the following reasons:

- Potential adverse effects associated with acquiring and using necessary right-of-way. These effects could include disruption, displacement, or destruction of businesses, sensitive plants or animal species, as well as increases in impervious surfaces.
- Lack of authority to implement mitigation improvements. The County of Sacramento does not have jurisdiction to make roadway improvements outside its area of governance.
- Lack of secure funding for improvements beyond the 2035 MTP project list. Funding mechanisms do not currently exist to generate funding beyond the levels projected for the 2035 MTP project list.

Impact 14.6: Deterioration or Worsening of Cumulative Freeway Mainline, Merge, and Diverge LOS

Implementation of these alternatives would increase AM and PM peak hour traffic volumes on the freeway mainline and ramp merge and diverge junctions within the study area. Specific locations and LOS results are presented in **Appendix F**. This impact is considered significant and adverse.

Mitigation Measures

Measure 14.6a: Implement Mitigation Measure 14.3 (widen SR 99 between I-5 and Elkhorn Boulevard to provide one additional lane in each direction).

Implementation of this improvement would restore freeway mainline and ramp merge/diverge operations to LOS D or better in the AM and PM peak hours.

Measure 14.6b: Widen SR 99 between Elkhorn Boulevard and Elverta Road to provide one additional lane in each direction.

Implementation of this improvement would restore freeway mainline and ramp merge/diverge operations to LOS D or better in the AM and PM peak hours.

Measure 14.6c: Widen SR 99 mainline between Elverta Road and Riego Road to provide one additional lane in each direction.

Implementation of this improvement would restore freeway mainline and ramp merge/diverge operations to LOS D or better in the AM and PM peak hours.

Significance after Mitigation: Significant and adverse.

If implemented, these improvements would reduce effects to less-than-significant for all freeway facilities; LOS results are presented in **Appendix F**. However, the feasibility of these improvements is uncertain for the following reasons:

- Potential adverse effects associated with acquiring and using necessary right-of-way. These effects could include disruption, displacement, or destruction of businesses, sensitive plants or animal species, as well as increases in impervious surfaces.
- Lack of authority to implement mitigation improvements. The County of Sacramento does not have jurisdiction to make roadway improvements outside its area of governance.
- Lack of secure funding for improvements beyond the 2035 MTP project list. Funding mechanisms do not currently exist to generate funding beyond the levels projected for the 2035 MTP project list.

Impact 14.7: Increased Demand for Public Transit

These alternatives would increase demand for public transit under existing and cumulative conditions. As development occurs, the alternatives would generate demand for transit service, especially commuter service to/from the project site and employment centers like downtown Sacramento, McClellan Park, and Roseville. A portion of the fees collected through the Sacramento *County Transportation Development Fee Program* (Sacramento County, 2010) are used for expanding service to new developments. Therefore, payment of the impact fee would address the increase in transit demand. However, there are no planned transit facilities or amenities within the project site. Currently, one route (Route 19) serves the project site, with a stop on Elverta Road. This impact is considered significant and adverse.

Mitigation Measures

Measure 14.7: The project proponent shall work with Sacramento County and Regional Transit (RT) to upgrade the existing transit stop and provide additional facilities, if warranted. Transit facilities would be developed by RT through coordination with Sacramento County.

Significance after Mitigation: Less than significant.

Impact 14.8: Increased Demand for Non-Motorized Travel

These alternatives would increase demand for bicycle and pedestrian facilities under existing and cumulative conditions. As discussed in **Chapter 2**, these alternatives would include Class II (striped) and Class III (designate routes) bicycle facilities along major roadways. The impact would be less than significant.

4.14.2 Alternative D – No Permit Alternative

Implementation of the No Permit Alternative would cause the following significant adverse effects on the transportation system. Refer to **Appendix F** for technical calculations.

Impact 14.1: Deterioration or Worsening of Existing Roadway Segment LOS

Implementation of Alternative D would increase daily traffic volumes on roadway segments within the study area. LOS would be unacceptable in comparison to existing conditions along several roadways. See **Appendix F** for LOS results. This impact is considered significant and adverse.

Development of the project site would help to fund future traffic improvements through development fees and property tax revenues. Needed improvements under Alternative D would include the following (numbered measures are the same as Alternatives A, B and C):

- **Measure 14.1a:** Widen Baseline Road from Walerga Road to Cook-Riolo Road from two to four lanes.
- **Measure 14.1c:** Widen Watt Avenue from Elverta Road to Don Julio Boulevard from four to six lanes.
- **Measure 14.1e:** Widen Raley Boulevard from I-80 to Ascot Avenue from two to four lanes.
- Widen Elverta Road from E. Levee Road to Watt Avenue from two to four lanes.
- Widen 16th Street from Elverta Road to the County line from two to six lanes.

These improvements would reduce impacts to less than significant; however, the feasibility of is uncertain as discussed for Alternatives A through C. These effects could remain significant and adverse if mitigation is found infeasible.

Impact 14.2: Deterioration or Worsening of Existing Intersection LOS

Implementation of Alternative D would increase AM and PM peak hour intersection traffic volumes at intersections within the study area. The LOS would be unacceptable in comparison to existing conditions at several intersections. See **Appendix F** for LOS results. This impact is considered significant and adverse.

Development of the project site would help to fund future traffic improvements through development fees and property tax revenues. Needed improvements under Alternative D would include the following (numbered measures are the same as Alternatives A, B and C):

- **Measure 14.2a:** The project proponent shall pay their fair share toward the planned construction of a grade-separated SR 99 / Elverta Road interchange.

- **Measure 14.2b:** Install a traffic signal at SR 99 Northbound Off-Ramp / Elkhorn Boulevard.

- **Measure 14.2c:** Install a traffic signal; install northbound and southbound left-turn lanes; and widen the eastbound and westbound approaches to include one left-turn lane, one through lane; and a shared through/right-turn lane on each approach at Elverta Road / East Levee Road.

- **Measure 14.2d:** Install a traffic signal; install northbound and southbound left-turn lanes; and widen the eastbound and westbound approaches to include one left-turn lane, one through lane, and a shared through/right-turn lane on each approach at Elverta Road / Sorento Road.

- **Measure 14.2e:** Install a traffic signal; install northbound and southbound left-turn lanes; and widen the eastbound and westbound approaches to include one left-turn lane, one through lane, and a shared through/right-turn lane on each approach at Elverta Road / Elwyn Road.

- **Measure 14.2f:** Install a traffic signal; widen eastbound approach to include one through lane, and a shared through/right-turn lane; and widen the westbound approach to include one left-turn lane and two through lanes at Elverta Road / Rio Linda Boulevard.

- **Measure 14.2h:** Install a traffic signal and install exclusive left-turn lanes on each approach at Q Street / Dry Creek Road.

- **Measure 14.2j:** Widen the northbound approach to include one left-turn lane and one right-turn lane; widen the eastbound approach to include two through lanes and one right-turn lane; and widen the westbound approach to include one left-turn lane and two through lanes at Elverta Road / 28th Street.

- **Measure 14.2k:** Optimize the traffic signal (reallocate the green time by approach) at Baseline Road / Watt Avenue.

- **Measure 14.2l:** Install one additional eastbound right-turn lane at Elverta Road / Watt Avenue.

- At the Elverta Road / 16th Street intersection, widen the eastbound approach to include two additional left-turn lanes (three total). Widen the southbound approach to include one additional left-turn lane (two total) and an exclusive right-turn lane with overlap phasing. Widen the westbound approach to include two exclusive right-turn lanes with overlap phasing.

- At the U Street / 16th Street intersection, install a traffic signal with exclusive left-turn lanes on each approach and an exclusive right-turn lane on the southbound approach.

If implemented, these improvements would reduce impact to less than significant; however, the feasibility of these improvements is uncertain as discussed for Alternatives A through C. These effects could remain significant and adverse if mitigation is found infeasible.

Impact 14.3: Deterioration or Worsening of Existing Freeway Mainline, Merge, and Diverge LOS

Implementation of Alternative D would increase AM and PM peak hour traffic volumes on the freeway mainline and ramp merge and diverge junctions within the study area. See **Appendix F** for specific locations and LOS results. This impact is considered significant and adverse.

Development of the project site would help to fund future traffic improvements through development fees and property tax revenues. Needed improvements under Alternative D would include the following (numbered measures are the same as Alternatives A, B and C):

- **Measure 14.3:** Widen SR 99 between I-5 and Elkhorn Boulevard to provide one additional lane in each direction.

This improvement would reduce freeway facility impacts to less than significant; however, the feasibility of this improvement is uncertain as discussed for Alternatives A through C. These effects could remain significant and adverse if mitigation is found infeasible.

Impact 14.4: Deterioration or Worsening of Cumulative Roadway Segment LOS

Implementation of Alternative D would increase daily traffic volumes on roadway segments within the study area. Specific locations and LOS results are presented in **Appendix F**.

Development of the project site would help to fund future traffic improvements through development fees and property tax revenues. Needed improvements under Alternative D would include the following (numbered measures are the same as Alternatives A, B and C):

- **Mitigation Measure 14.4b:** Widen Watt Avenue from Elverta Road to Antelope Road from four to six lanes.
- **Mitigation Measure 14.4c:** Widen Dry Creek Road from Ascot Avenue to Elkhorn Boulevard from two to four lanes.
- Widen Watt Avenue from PFE Road to Black Eagle Drive from two to four lanes
- Widen 16th Street from Elverta Road to the County Line from two to four lanes.

Implementation of the identified improvements would reduce impacts to less than significant; however, the feasibility of this improvement is uncertain as discussed for Alternatives A through C. These effects could remain significant and adverse if mitigation is found infeasible.

Impact 14.5: Deterioration or Worsening of Cumulative Intersection LOS

Implementation of Alternative D would cause an increase in AM and PM peak hour intersection traffic volumes at intersections within the study area. Specific locations and LOS results are presented in **Appendix F**. This impact is considered significant and adverse.

Development of the project site would help to fund future traffic improvements through development fees and property tax revenues. Needed improvements under Alternative D would include the following (numbered measures are the same as Alternatives A, B and C):

- **Measure 14.5a:** Implement Mitigation measure 14.2b (Install traffic signal at SR 99 Northbound Off-Ramp / Elkhorn Boulevard) and restripe the northbound approach to include one shared left/right-turn lane and an exclusive right-turn lane at SR 99 Northbound Off-Ramp / Elkhorn Boulevard.
- **Measure 14.5b:** Implement Mitigation Measure 14.2c (Install a traffic signal and implement lane reconfiguration at Elverta Road / East Levee Road).
- **Measure 14.5c:** Install a traffic signal at Elkhorn Boulevard / East Levee Road.
- **Measure 14.5d:** Implement Mitigation Measure 14.2d (Install a traffic signal and implement lane reconfiguration at Elverta Road / Sorento Road).
- **Measure 14.5e:** Implement Mitigation Measure 14.2e (Install a traffic signal and implement lane reconfiguration at Elverta Road / Elwyn Road).
- **Measure 14.5f:** Implement Mitigation Measure 14.2f (Install a traffic signal and implement lane reconfiguration at Elverta Road / Rio Linda Boulevard).
- **Measure 14.5g:** Install a traffic signal at Elverta Road/9th Street.
- **Measure 14.5h:** Implement Mitigation Measure 14.2h (Install a traffic signal and install exclusive left-turn lanes on each approach at Q Street / Dry Creek Road).
- **Measure 14.5i:** Optimize the traffic signal (reallocate the green time by approach) at Elverta Road / 28th Street.
- **Measure 14.5j:** Subject to County approval, install right-turn overlap traffic signal phase for eastbound and westbound approaches at Elverta Road / Watt Avenue.
- At the Elverta Road / 16th Street intersection, install an exclusive westbound right-turn lane.
- At the U Street / 16th Street intersection, install an exclusive southbound right-turn lane.

If implemented, these improvements would reduce impact to less than significant for all intersections; however, the feasibility of these improvements is uncertain as discussed for Alternatives A through C. These effects could remain significant and adverse if mitigation is found infeasible.

Impact 14.6: Deterioration or Worsening of Cumulative Freeway Mainline, Merge, and Diverge LOS

Implementation of Alternative D would increase AM and PM peak hour traffic volumes on the freeway mainline and ramp merge and diverge junctions within the study area. Specific locations and LOS results are presented in Appendix F. This impact is considered significant and adverse.

Development of the project site would help to fund future traffic improvements through development fees and property tax revenues. Widening of SR 99 between I-5 and Riego Road, to provide one additional lane in each direction, would reduce impacts to less than significant for all freeway facilities; however, the feasibility of this improvement is uncertain as discussed for Alternatives A through C. These effects could remain significant and adverse if mitigation is found infeasible.

Impact 14.7: Increased Demand for Public Transit

Alternative D would increase demand for public transit under existing and cumulative conditions. As development occurs, Alternative D would generate demand for transit service, especially commuter service to/from the project site and employment centers like downtown Sacramento, McClellan Park, and Roseville. A portion of the fees collected through the *Sacramento County Transportation Development Fee Program* (Sacramento County, 2010) are used for expanding service to new developments, like Alternative D. Therefore, payment of the impact fee would address the alternative's increase in transit demand. Due to the reduced intensity under this alternative, the existing Route 19 stop on Elverta Road would likely be sufficient for residential demand and impacts to transit would be less than significant.

Impact 14.8: Increased Demand for Non-Motorized Travel

Alternative D would increase demand for bicycle and pedestrian facilities under existing and cumulative conditions. The impact would be less than significant.

4.14.3 References

California Department of Transportation (Caltrans), 1992. *Travel Forecasting Guidelines*, 1992.

California Department of Transportation (Caltrans), 2010. *State Route 99 Transportation Corridor Concept Report*, August 2010.

California Department of Transportation (Caltrans), 2012. *California Manual on Uniform Traffic Control Devices* (MUTCD), Part 4 (Traffic Signals), January 2012.

Institute of Transportation Engineers (ITE). 2008. *Trip Generation,* 8th Edition, 2008.

Sacramento Area Council of Governments (SACOG). 2008. *Metropolitan Transportation Plan 2035*, 2008.

Sacramento City/County, 1995. 2010 Sacramento City/County Bikeway Master Plan, April 11, 1995.

Sacramento County, 2007. Sacramento County Pedestrian Master Plan Draft Environmental Impact Report. Sacramento County Department of Environmental Review and Assessment, July 2007.

Sacramento County, 2010. Sacramento County Transportation Development Fee Program, March 2010.

Transportation Research Board, 2000. *Highway Capacity Manual (HCM)*. United States National Research Council, Transportation Research Board, 2000.

4.15 Indirect Effects

The Council on Environmental Quality Regulations for Implementing NEPA define indirect effects as effects "which are caused by the action and are later in time or farther removed in the distance, but are still reasonably foreseeable. Indirect effects may include growth inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems" (40 CFR 1508.8(b)). **Section 4.15.1** assesses the potential for growth-inducing effects caused by the alternatives. **Section 4.15.2** assesses effects caused by off-site utility and traffic improvements. Many indirect and off-site effects are also analyzed in **Sections 4.2** through **4.14**, such as indirect effects related to off-site pollutant discharges and downstream resources, and other effects that may occur further from the project site or later in time.

4.15.1 Growth-Inducing Effects

Alternatives A, B and C

Growth-inducing effects are a subset of indirect effects. A growth-inducing effect is an effect which fosters (or removes a barrier to) economic or population growth. An example of direct growth inducement would be the construction of new housing. Examples of indirect growth inducement include establishing substantial new permanent employment opportunities and removing obstacles to population growth (e.g., the expansion or improvement of utilities which allows for more growth within the service area, such as a new water supply or additional wastewater conveyance and treatment capacity). Growth inducement itself is not an environmental effect, but it could lead to physical environmental effects such as increased demand on public services and infrastructure, increased traffic and noise, degradation of air or water quality, or degradation or loss of special-status species habitat over time.

Direct Growth

Alternatives A, B and C include the development of new residential and commercial uses. These uses are included within the project description for Alternatives A, B and C and thus the environmental effects are evaluated in **Sections 4.2** through **4.14**. For example, the traffic generated from development of new residential and commercial uses is directly evaluated in **Section 4.14**.

Indirect Growth from New Employment Opportunities

Alternatives A, B and C would create new employment opportunities which could result in additional commercial demand, but not additional housing demand. As discussed for Alternative A, B and C in **Section 4.7**, the following factors would reduce housing demands from these new jobs: employment of the local labor force; development of approximately 6,190 dwelling units under Alternatives A, B or C; development of proposed housing elsewhere in Sacramento County; and available vacant housing in Sacramento County and neighboring counties. Given these factors, Alternatives A, B or C is not anticipated to increase jobs to the extent that would create significant new housing demand within Sacramento County. Indirect growth from new employment opportunities is discussed in **Section 4.7**.

Alternative D

Direct Growth

Direct environmental effects of Alternative D are discussed in **Sections 4.2** through **4.14**. As identified in **Section 4.7**, Alternative D would generate fewer direct, indirect and induced jobs than Alternatives A, B and C. Alternative D does not provide new employment opportunities which could indirectly induce growth.

4.15.2 Other Indirect Effects

Alternatives A, B and C

Under Alternatives A, B and C modifications, extensions and expansions of roadway and utility infrastructure would occur both within and outside of the Plan area. **Chapter 2.0** describes those that would occur on-site. Traffic mitigation, which includes the proposed widening of some off-site roadways, is discussed in **Sections 4.14** and **4.16**. Proposed off-site traffic mitigation is summarized in **Table 4.15-1**. These off-site roadway improvements may lead to indirect effects.

Geology, Soils and Mineral Resources

The construction of off-site roadway and utility improvements would require grading and the introduction of fill material to extend existing shoulders and roadbed. Earthwork could result in erosion of soils. Sacramento County Code 16.44 requires private construction sites disturbing one or more acres or moving 350 cubic yards or more of earthen material to obtain a grading permit; the grading permit requires preparation and approval of an Erosion and Sediment Control Plan. In accordance with the Clean Water Act, construction of roadway and utility projects over one acre in area would be required to comply with the National Pollutant Discharge Elimination System (NPDES) Construction General Permit program including preparation of a Stormwater Pollution Prevention Plan (SWPPP) that would include soil erosion and sediment control practices to reduce the extent of exposed soil, prevent runoff from flowing across disturbed areas, slow runoff from the site, and remove sediment from any runoff. With standard construction practices and specifications required by the NPDES Construction General Permit program, construction of roads and utility lines are not expected to result in significant, adverse impacts to these resources.

Hydrology, Flooding and Water Quality

The development of off-site roadway and utility improvements could affect water resources due to grading and construction activities and an increase in impervious surfaces. Potential effects include an increase in surface runoff and increased erosion that could adversely affect surface water quality due to increases in sediment and roadway pollutants such as grease and oil. As discussed above, a SWPPP would be developed to comply with the NPDES General Construction Permit Program, which includes soil erosion and sediment control practices. Drainage features along the modified roadways would be sized to accommodate increased runoff. With the incorporation of best management practices (BMPs) identified in the SWPPP, for construction projects resulting in over one acre of disturbance, effects to water resources would be less than significant.

TABLE 4.15-1
PROPOSED TRAFFIC MITIGATION – ALTERNATIVES A, B AND C

Traffic Mitigation Measures (Section 4.14)
Measure 14.1a: Widen Baseline Road from Walerga Road to Cook-Riolo Road from two to four lanes.
Measure 14.1b: Widen Elverta Road from SR 99 to Watt Avenue from two to four lanes.
Measure 14.1c: Widen Watt Avenue from Elverta Road to Don Julio Road from four to six lanes.
Measure 14.1d: Widen Dry Creek Road from Ascot Avenue to Elkhorn Boulevard from two to four lanes.
Measure 14.1e: Widen Raley Boulevard from I-80 to Ascot Avenue from two to four lanes.
Measure 14.2a: The project proponent shall pay their fair share toward the planned construction of a grade-separated SR 99 / Elverta Road interchange.
Measure 14.2b: Install a traffic signal at SR 99 Northbound Off-Ramp / Elkhorn Boulevard.
Measure 14.2c: Install a traffic signal; install northbound and southbound left-turn lanes; and widen the eastbound and westbound approaches to include one left-turn lane, one through lane; and a shared through/right-turn lane on each approach at Elverta Road / East Levee Road.
Measure 14.2d: Install a traffic signal; install northbound and southbound left-turn lanes; and widen the eastbound and westbound approaches to include one left-turn lane, one through lane, and a shared through/right-turn lane on each approach at Elverta Road / Sorento Road.
Measure 14.2e: Install a traffic signal; install northbound and southbound left-turn lanes; and widen the eastbound and westbound approaches to include one left-turn lane, one through lane, and a shared through/right-turn lane on each approach at Elverta Road / Elwyn Road.
Measure 14.2f: Install a traffic signal; widen eastbound approach to include one through lane, and a shared through/right-turn lane; and widen the westbound approach to include one left-turn lane and two through lanes at Elverta Road / Rio Linda Boulevard.
Measure 14.2g: Install a traffic signal and install northbound and southbound left-turn lanes at U Street / Dry Creek Road.
Measure 14.2h: Install a traffic signal and install exclusive left-turn lanes on each approach at Q Street / Dry Creek Road.
Measure 14.2i: Install a traffic signal; widen the northbound approach to include one left-turn lane, one through lane, and one right-turn lane; widen eastbound approach to include one left-turn lane, two through lanes, and one right-turn lane; widen southbound approach to include one left-turn lane and one shared through/right-turn lane; and widen westbound approach to include one left-turn lane, one through lane, and one shared through/right-turn lane at Elverta Road / 16th Street.
Measure 14.2j: Widen the northbound approach to include one left-turn lane and one right-turn lane; widen the eastbound approach to include two through lanes and one right-turn lane; and widen the westbound approach to include one left-turn lane and two through lanes at Elverta Road / 28th Street.
Measure 14.2k: Optimize the traffic signal (reallocate the green time by approach) at Baseline Road / Watt Avenue.
Measure 14.2l: Install one additional eastbound right-turn lane at Elverta Road / Watt Avenue.
Measure 14.3: Widen SR 99 between I-5 and Elkhorn Boulevard to provide one additional lane in each direction.
Measure 14.4a: Widen Elverta Road from 16th Street to 28th Street from four to six lanes.
Measure 14.4b: Widen Watt Avenue from Elverta Road to Antelope Road from four to six lanes.
Measure 14.5a: Restripe the northbound approach to include one shared left/right-turn lane and an exclusive right-turn lane at SR 99 Northbound Off-Ramp / Elkhorn Boulevard.
Measure 14.5c: Install a traffic signal at Elkhorn Boulevard / East Levee Road.
Measure 14.5g: Install a traffic signal at Elverta Road/9th Street.
Measure 14.5i: Optimize the traffic signal (reallocate the green time by approach) at Elverta Road / 28th Street.
Measure 14.5j: Install right-turn overlap traffic signal phase for eastbound and westbound approaches at Elverta Road / Watt Avenue.
Measure 14.6b: Widen SR 99 between Elkhorn Boulevard and Elverta Road to provide one additional lane in each direction.
Measure 14.6c: Widen SR 99 mainline between Elverta Road and Riego Road to provide one additional lane in each direction.

Air Quality and Global Climate Change

Development and modification of off-site roadway and utility infrastructure would result in similar temporary, construction impacts as discussed in **Section 4.3**. Similar BMPs would be utilized to reduce construction impacts. Proposed roadway development and modifications would reduce congestion and improve traffic flow. This would reduce emissions from the idling vehicles at these intersections and roadway segments resulting in improved conditions. These impacts are therefore considered to be less than significant.

Biological Resources and Aquatic Resources

As discussed in **Section 4.4**, biological resources may be indirectly affected by development activities through the introduction of non-native invasive plant species, decreases in water quality due to erosion or sedimentation, changes in surface or subsurface hydrology, and an increase in human disturbance. Potential indirect effects to vernal pool habitats under Alternatives A, B and C are summarized in **Tables 4.4-1** and **4.4-3**. Potential indirect effects to other special-status species, including raptors, valley elderberry longhorn beetle, western spadefoot, western pond turtle, and protected tree species are also evaluated in **Section 4.4**.

Construction of Alternatives A, B and C would include the establishment of riparian and wetland habitats within the proposed Drainage Corridors. Habitats within the proposed Drainage Corridors may be indirectly affected by surrounding land uses if not carefully managed. This includes the need for a Wetland Management Plan to include measures to actively manage for the control of noxious weeds, feral animals, storm water quality, and unauthorized access.

To address potential indirect effects to sensitive habitats and species, **Section 4.4** includes a number of mitigation measures that would result in the avoidance or reduction of the magnitude of the above effects. With the implementation of these mitigation measures, indirect effects associated with onsite activities implementing Alternative A, B or C would be less than significant.

Off-site roadway and infrastructure modifications may affect habitats similar to those found on site, including vernal pools and other wetlands. These improvements would be subject to environmental review under local ordinances, including the California Environmental Quality Act (CEQA), or additional permitting actions by the USACE and other resource agencies.

Cultural Resources

Development and modification of off-site roadways and utility infrastructure has the potential to disturb previously undiscovered cultural resources. Impacts within the project site are discussed in **Section 4.6**. Similar impacts could occur off-site. Due to prior grading of existing roadways and disturbance within right-of-ways it is likely that resources remaining in these areas are highly disturbed and lack integrity, thus diminishing the significance of the remaining resources. The lead agency under any CEQA review for off-site projects would be required to mitigate potential impacts to a less than significant level or to issue a finding of fact and statement of overriding considerations of significant and adverse impacts could not be mitigated. Mitigation may include the avoidance of resources, the preservation of a key historical feature, or the removal, documentation, and curation of cultural resources.

Land Use and Agriculture

Off-site roadway and infrastructure development and modifications would typically occur within the existing right-of-ways; however small additional land acquisitions may be required adjacent to existing right-of-way. As existing uses are setback from the road, the acquisition of peripheral pieces of property is not anticipated to change existing land uses or substantially affect agricultural land or operations and thus is less than significant.

Public Services, Utilities and Recreation

Development and modification of off-site roadways and utility infrastructure could create temporary service disruptions to existing utility customers. These effects are common when upgrading and maintaining utility services, and would be temporary. Emergency access for police and fire services on roadways would be maintained throughout the construction period, and impacts would be less than significant.

Noise

Noise from development and modification of off-site roadways and utility infrastructure would be temporary and consistent with the Sacramento County Code (Chapter 6.68 Noise Control). Therefore, impacts would be less than significant.

Hazards and Hazardous Materials

Development and modification of off-site roadway and utility infrastructure could include potential hazards similar to other constructions sites. Transport of fuels would be minimized with adherence to standard operating procedures, such as refueling in designated areas, storing hazardous materials in approved containers, and clearing dried vegetation. Such procedures are commonly required by local agencies as part of a permit review and/or CEQA review for roadway and utility improvements; thus significant, adverse impacts are not anticipated.

No indirect effects related to offsite roadway and utilities improvements are expected for socioeconomic conditions, environmental justice or aesthetics.

Alternative D

Under Alternative D it is not anticipated that there would be any indirect impacts from the development or modification of offsite roadway and utility infrastructure, as existing infrastructure would be used for serving the project site.

This Page is Intentionally Left Blank

4.16 Cumulative Effects

4.16.1 Methodology

The cumulative effects analysis broadens the scope of analysis to include effects beyond those directly attributable to the implementation of the Applicant's Preferred Alternative and other alternatives. Cumulative effects are defined as the effects "…on the environment which result from the incremental effect of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative effects can result from individually minor but collectively significant actions taking place over a period of time" (40 CFR § 1508.7). The purpose of cumulative effects analysis, as stated by the Council on Environmental Quality "is to ensure that federal decisions consider the full range of consequences" (1997).

The cumulative analysis begins with defining the geographic border(s) and time frame(s) of the analysis. Secondly, the cumulative environment is described in terms of expected growth as well as past, present and future actions and projects that may affect the status of the resources, ecosystems, and human communities within the defined geographic border and time frame.

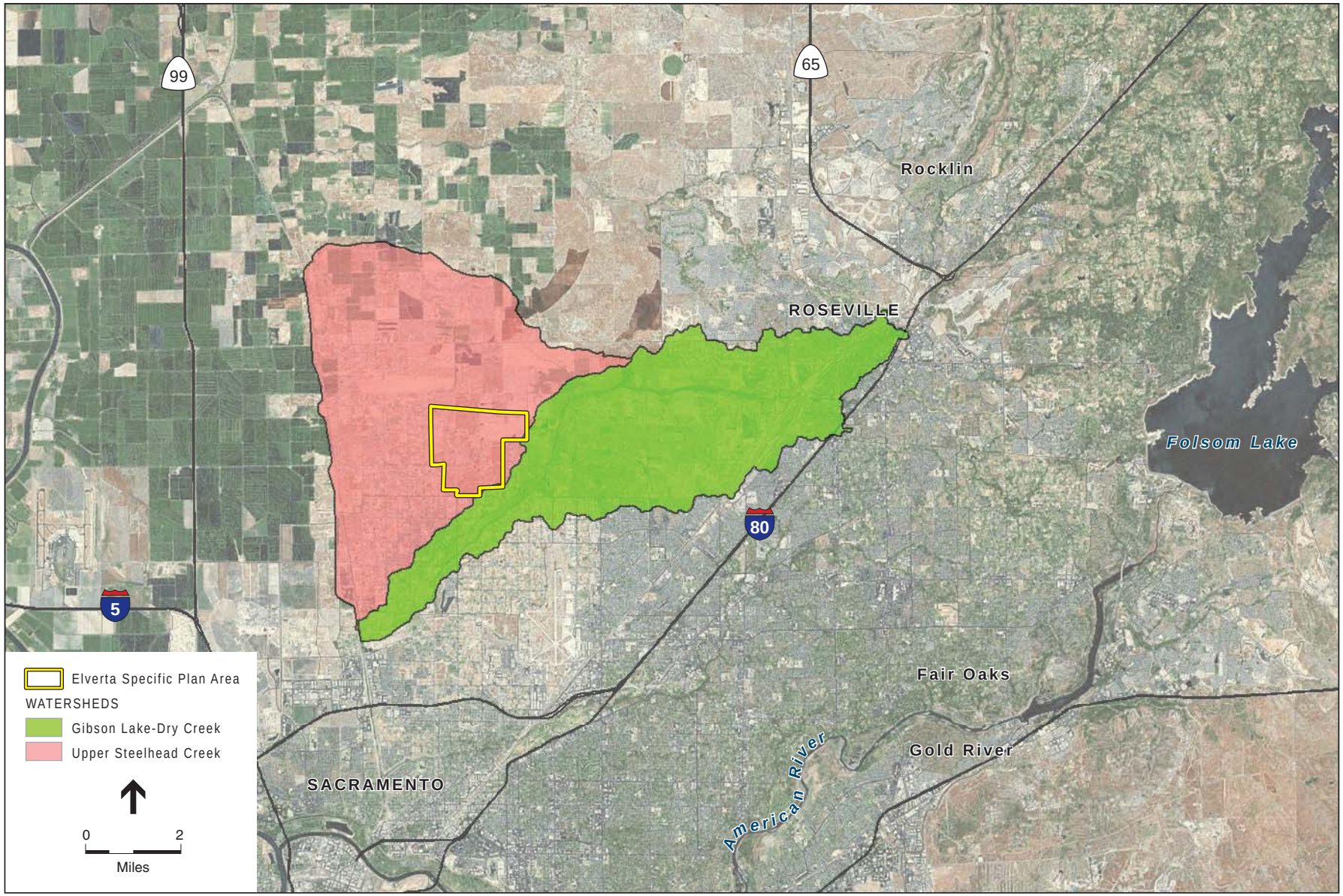
As described in Chapter 1, full buildout of the Plan Area is evaluated as a cumulative impact (i.e., future projects) for most resources, except for those evaluations that are dependent on the proposed regional roadway system for the Plan Area, including evaluations for Transportation and Traffic (Section 4.14), Air Quality and Global Climate Change (Section 4.3), and Noise (Section 4.12). For these resource areas, the potential impacts of the full buildout under each alternative are described in their corresponding resource discussions, and any additional, regional projects that would cumulatively contribute towards these effects are evaluated here. In addition, it is assumed that any future buildout in the plan area that requires a Section 404 permit would be potentially subject to the same mitigation measures described for each resource section.

Geographic Boundary

The geographic area for the cumulative analysis varies depending upon the environmental issue and the geographic extent of the potential impact. For example, the geographic area associated with construction noise impacts would be limited to areas directly affected by construction noise, whereas the geographic area that could be affected by construction-related air emissions would include a larger area. The general geographic scope for the cumulative analysis is north-central Sacramento County. Areas of southern Placer County and Sutter County were also considered as discussed under "Cumulative Projects", below. The scope of biological, aquatic and hydrologic issues is the multi-watershed area shown in **Figure 4.16-1**.

Time Frame

In addition to the geographic scope, cumulative impacts are determined by the timing of other related projects. The time frame of the cumulative effects analysis extends to 2035. Long-range planning data from the Sacramento Area Council of Governments (SACOG) is available within this time frame. Beyond this planning horizon, information on growth patterns and future



SOURCE: NHD, 2009; Bing Maps, 2009; and ESA, 2011

Elverta Specific Plan EIS . 207431

Figure 4.16-1

Watersheds in the Vicinity of the Project Area

activities becomes scarce and uncertainties increase, limiting the usefulness of a more extended analysis. The projects described below may fluctuate due to schedule changes of other unknown factors.

Cumulative Projects

The cumulative scenario includes buildout assumptions within the SACOG Metropolitan Plan 2035 and Sacramento County General Plan. Planning assumptions in the Sutter County Plan and Placer County Plan were also considered as the project site is located along the northern boundary of Sacramento County. Placer County is located adjacent to the northern boundary of the project site and Sutter County is located approximately 2 miles northwest of the project site.

For the purposes of this discussion, projects that may contribute to cumulative effects are referred as the "cumulative projects." A large number of past projects have been developed within the cumulative study area. These include a landfill, single-family homes, and agricultural land uses.

Current and future projects which are relevant to the cumulative discussion are identified in **Table 4.16-1**.

TABLE 4.16-1
PROPOSED AND LOCALLY APPROVED PROJECTS

Project Name	Description	Acreage Total	Residential Units	Jurisdiction/Status
Rio Linda/Elverta Community Plan	Community Plan	1,820±	4,500	Sacramento County
East Antelope Specific Plan	Community Plan	673±	1,655	Sacramento County
Placer Vineyard Specific Plan	Specific Plan	5,230±	14,132	Placer County
Dry Creek-West Placer Community Plan	Community Plan	9,200±	4,215 to 5,479	Placer County
Sutter Pointe Specific Plan	Specific Plan	7,525±	17,500	Sutter County

SOURCE: Sacramento County, 2010.

The Natomas Joint Vision area includes over 18,000 acres west of the project site is in the initial planning stages for future development. The Natomas Joint Vision area does not have an adopted plan for development and thus it is assumed that this area would not be built out within the cumulative time frame.

4.16.2 Cumulative Analysis - Alternatives A, B and C

Aesthetics

Alternatives A, B and C would result in a change of the project site from primarily rural, undeveloped, and agricultural land to built-out urban land uses. With the development of nearby areas, including the Placer Vineyard Specific Plan area, conversion of rural land uses would

occur. When considered along with previous, current and planned urban development in Sacramento County and Placer County, Alternatives A, B and C would result in a cumulatively considerable contribution to degradation of visual character and new light and glare effects.

Air Quality and Global Climate Change

Any project that would individually have a significant, adverse impact on air quality would also be considered to have a cumulatively significant, adverse impact. The geographic scope for air quality impacts would be the Sacramento Valley Air Basin. Activities associated with development of the Elverta Specific Plan would result in increased air emissions of ROG, NO_x, and PM10, PM2.5 and CO. Emissions of ROG and NO_x would exceed the SMAQMD thresholds for these pollutants. Alternative A, B and C, in conjunction with other planned development, would result in a cumulatively considerable contribution to long-term increases in emissions. Incorporation of Mitigation Measure 3.3 would reduce operational emissions, but impacts would remain cumulatively considerable. Although overall GHG impacts are global in scope, as discussed in **Section 4.3**, impacts associated with GHG emissions from Alternatives A, B and C are considered to be cumulatively significant and adverse. Incorporation of Mitigation Measures 3.3, 3.7a, and 3.7b would reduce GHG emissions, but emissions would remain cumulatively significant and adverse after mitigation.

Biological Resources

Areas considered within the cumulative environment for biological resources include those watersheds discussed previously (**Figure 4.16-1**). As described in **Section 4.5**, Alternatives A, B and C would directly affect federally-listed species, including vernal pool fairy shrimp and vernal pool tadpole shrimp, through the loss of suitable habitat. These species would also be indirectly affected by Alternatives A, B and C through potential adverse effects to surface water quality, introduction of exotic species, and an increase in human presence and activities within the project site.

Full build out of the Plan Area under Alternatives A, B, and C would result in additional losses of vernal pool crustacean habitat as well as habitat for Swainson's hawk, western spadefoot, western pond turtle, and special status plant species. It is conservatively assumed based on the buildout land use plan for Alternatives A and C, that these alternatives would impact all annual grassland and aquatic resources within the Elverta Specific Plan area; this includes approximately 1,358 acres of grasslands, 21 acres of vernal pools, 39 acres of wetland swales, 13 acres of seasonal wetlands, and 14 acres of ponds, ditches, and streams. Alternative B would impact less annual grassland and wetland habitats (including approximately 6 fewer acres of vernal pool habitat) due to the inclusion of habitat "avoidance areas" within the Plan area.

Of the all the habitats found on the project site, the cumulative loss of vernal pool habitat is considered the most significant, followed by the other wetland habitat types (swales, seasonal wetlands, and channels). The cumulative loss of vernal pool habitat in the region has been well documented (AECOM, 2009; USFWS, 2005). It is estimated that 75% to 90% of the historic California vernal pool habitat has been lost. Losses are primarily due to land development and agricultural practices; other factors contributing to their decline include invasive species, degradation of storm water quality, and unauthorized dumping and off-road vehicle use. All of these threats are present within the region,

and cumulatively have had an adverse impact on these species and habitats, contributing towards their decline.

To address this cumulative loss, most of the current and planned projects in the region (as listed in **Table 4.16-1**) include varying levels of compensatory mitigation for impacts to vernal pool habitats. Mitigation typically includes a mix of on-site preservation and on- and off-site creation and/or restoration. While there is mitigation planned to compensate for the loss of vernal pool acreage with constructed vernal pools, two major concerns remain: that off-site constructed pools may not fully replace the habitat functions of the original vernal pools, and that, even if the habitat functions were being replaced, the vernal pool complexes may still become degraded. Thus, even with mitigation, the cumulative loss of habitat for vernal pool species that would occur under Alternative A, B or C is cumulatively considerable.

Alternatives A, B and C include the development of Drainage Corridors that would contain a variety of wetland types. The amount of wetland habitat that would be developed under full buildout of the Plan area under Alternative A is summarized in **Table 4.16-2.**

TABLE 4.16-2
WETLAND CREATION AND ENHANCEMENT UNDER ALTERNATIVE A

Habitat Type	Acres[1]
Open Water (Riverine)	9.94
Seasonal Freshwater Marsh	9.99
Seasonal Wetland	20.04
Total	**39.97**

1. Totals are approximate and subject to rounding.
SOURCE: Barnett Environmental, 2011.

In addition to the above jurisdictional waters that would be created or enhanced, an additional 100.78 acres of non-jurisdictional seasonal wetland, riparian, grassland, and oak woodland habitat would be created in the Plan area under Alternative A. Seasonal wetlands and riparian habitat created areas may also be classified as jurisdictional post-construction, but were not classified so in this plan due to the uncertainty of post construction soils and hydrologic parameters. When totaled, this habitat creation would offset some of the impacts related to losses of potential nesting habitat for birds and aquatic habitat for amphibians and reptiles.

While specific acreages of wetland creation have not been calculated for Alternatives B or C, each would also include some level of wetland creation combined with riparian and upland habitat creation. Alternative B would include up to 300 acres of wetland and upland habitat creation and enhancement, while Alternative C would include approximately 100 acres of habitat creation and enhancement. Neither of these alternatives proposes the enhancement, restoration, or creation of vernal pool habitats; rather, created and enhanced habitats would be similar to that described for Alternative A.

As noted above, no vernal pool habitat would be created within the proposed Drainage Corridors. Therefore Alternatives A, B and C would result in a cumulatively considerable contribution towards the loss of vernal pool habitat in the region. Implementation of the mitigation measures listed in

Section 4.4, including providing for the off-site compensation of vernal pool habitat, would reduce these cumulative effects. However, there are a lack of approved mitigation banks and lack of available land for restoration/creation/preservation opportunities. Additionally, it will take time to improve habitat conditions within conservation areas through enhancement activities. For example, there are no available vernal pool creation credits within Sacramento County. There are potential opportunities on 646 acres at the proposed Apple Road Mitigation Bank; however this bank has not been approved by U.S. Fish and Wildlife Service and the number of credits that would be available is unknown (Hemmen, pers. comm., 2012).

Loss of vernal pool habitat from implementation of the project alternatives in combination with projected losses from past, present and reasonably foreseeable future projects constitute a cumulatively substantial reduction in vernal pool habitat in the region. In addition, cumulative development would result in the conversion of large, open habitat landscapes to smaller patches of habitat surrounded by urban development, which would make vernal pool habitat more vulnerable to the effect of habitat fragmentation and other indirect impacts (degradation of water quality, hydrologic alterations, and reduction of habitat functions of on-site wetlands and downstream wetlands). Therefore, the cumulative loss of vernal pool habitat that would occur under Alternatives A, B or C would remain cumulatively significant and adverse.

Aquatic Resources

Areas considered within the cumulative environment for aquatic resources include those watersheds discussed previously (Figure 4.16-1). Full buildout of Alternatives A, B and C would result in the direct loss of wetlands and other waters of the U.S. as summarized in **Table 4.16-3**. Alternative D would not contribute towards the cumulative loss of aquatic resources.

TABLE 4.16-3
EFFECTS TO WATERS OF THE U.S. UNDER FULL BUILDOUT- ALTERNATIVES A, B AND C

Alternative	Type of Jurisdictional Feature	Acres Affected
A and C	Channel	0.61
	Ditch	1.37
	Pond	14.00
	Seasonal Wetland	13.07
	Vernal Pool	20.50
	Wetland Swale	38.6
	Total	**88.21**
B	Channel	0.61
	Ditch	1.27
	Pond	14.00
	Seasonal Wetland	12.67
	Vernal Pool	14.40
	Wetland Swale	26.70
	Total	**69.04**

SOURCE: SOURCE: ESA, 2011; Barnett Environmental, 2011.

As described for biological resources, the cumulative loss of vernal pools and other wetland types in the region has been well documented. Most of the past, present, and planned projects in the region (as listed in **Table 4.16-1**) include varying levels of compensatory mitigation for wetland loss. Mitigation typically includes a mix of on-site preservation and on- and off-site creation. Typical compensation ratios approximate 2:1 preservation and 1:1 creation, but some include only preservation or creation, while others propose lesser preservation and more creation (or vice versa). While individual projects are required to mitigate for losses it is anticipated that there would be a net loss of wetland function within the project site watersheds due to lack of mitigation opportunities and available mitigation banks within the project site watersheds. Additional impacts would result from roadway and infrastructure improvements related to cumulative development.

As described previously, Alternatives A, B and C would include the creation of wetland habitats within the Plan Area as depicted in the Conceptual Habitat Development Plan (**Appendix K**). However, even with this wetland creation and the mitigations measures included in **Section 4.5**, implementation of Alternatives A, B or C would contribute to the cumulative loss of wetlands and other waters of the U.S. in the region, as it will take time to improve the function and services of features within the proposed Drainage Corridors through enhancement and creation activities and the proposed Drainage Corridors may not satisfy compensation requirements for full buildout. For cumulative development there are mitigation banks with available Corps-approved credits, including the Cosumnes Floodplain Mitigation Bank which has approximately 200 credits for wetlands (Hemmen, pers comm. 2012). The project site is within the bank's service area but is located in different watersheds.

Considering the proposed buildout area of the cumulative projects, it may not be possible to fully mitigate the loss of habitat functions and services provided by the aquatic habitats that would be lost in the project site watersheds. Therefore, the loss of aquatic resources that would occur under Alternatives A, B or C would remain cumulatively significant and adverse when combined with the effects of past, present and reasonably foreseeable future projects in the region.

Cultural and Historic Resources

No historic or prehistoric cultural resources were located during archival review or the survey of the project site. However, continued development throughout the geographic boundary runs the inherent risk of damaging or destroying previously unknown significant archaeological resources that could potentially yield information important in our history or prehistory. Mitigation measures as specified in **Section 4.6** would ensure that direct effects to cultural and historic properties are less than significant under Alternatives A, B and C. In addition, other developments within the region would be required to implement similar measures, including compliance with the National Historic Preservation Act of 1966 and its requirements to consult with and/or notify the State Historic Preservation Officer (SHPO), compliance with CEQA, and applicable City and County historic preservation guidance. Accordingly, no significant cumulative impacts to cultural resources are expected under Alternatives A, B or C.

Socioeconomics and Environmental Justice

As discussed in **Section 4.8**, Alternatives A, B and C would provide new economic opportunities which would have fiscally beneficial effects within the County. In addition, the increased population associated with Alternatives A, B, and C would be consistent with planned growth assumptions and would not increase housing demand in Sacramento County. There are no identified minority or low-income populations in the project site vicinity which would be affected. For these reasons, Alternatives A, B and C would not result in cumulatively significant and adverse impacts with respect to socioeconomic conditions or environmental justice, and may contribute towards beneficial socioeconomic effects.

Geology, Soils and Mineral Resources

Development of the Alternatives A, B, or C would not contribute to cumulative impacts related to geology, soils and mineral resources. Other development proposed in the project area would be subject to the same types of geology, soils, and mineral resource impacts as the project. However, these types of impacts represent hazards to people and property on a site-specific basis. For example, liquefaction potential at two separate developments does not result in a greater combined impact than the individual impacts do separately. Consequently, there is little, if any, cumulative relationship between the development of the project and past, present or anticipated future development. Therefore, there would be no cumulative effects related to geology, soils and mineral resources. This is considered a less-than-significant impact for all Alternatives.

Hazards and Hazardous Materials

Under cumulative conditions, implementation of Alternative A, B or C in conjunction with other planned development is not anticipated to present a public health and safety hazard. Health and safety impacts associated with past or current uses of a project site are site-specific and usually occur on a project-by-project basis, rather than in a cumulative nature. Alternatives A, B and C include mitigation measures in **Section 4.9** that reduce potential site-specific hazards and hazardous materials impacts to less-than-significant levels.

Alternatives A, B and C would involve the storage, use, disposal, and transport of hazardous materials to varying degrees during demolition, site preparation, construction, and operation. Impacts related to these activities are considered less than significant under Alternatives A, B and C because the storage, use, disposal, and transport of hazardous materials are extensively regulated by various federal, state, and local agencies, and it is assumed that other current and planned projects would comply with existing hazardous materials regulations. Therefore, Alternatives A, B or C would not contribute to cumulatively significant and adverse hazardous materials storage and transport impacts.

Other projects in the buildout of the Plan area would have site specific hazardous materials mitigations from the 2007 Elverta Specific Plan Area EIR. There include mitigations for any development on the former Monroe Landfill property (APN 202-0070-024) and in the vicinity of the former landfill (2007 EIR Mitigation Measures LA-4, LA-5, and LA-6). The buildout of the Plan area would also include hazardous materials mitigation measures related to soil testing (and appropriate remediation if unacceptable contamination is detected) for the development of parcels

that historically supported livestock and orchards (2007 EIR Mitigation Measure TX-2). The buildout of the Plan area would also include mitigation for demolition activities (2007 EIR Mitigation Measure TX-3); mitigation for proper destruction of water supply wells, septic tanks, leach lines and cisterns (2007 EIR Mitigation Measure TX-4); and mitigation for further evaluation of potential hazardous material contamination (2007 EIR Mitigation Measures TS-5 and TX-6).

The buildout of the Plan area, in addition to the participating parcels would not result in any additional cumulative adverse impacts from hazards or hazardous materials.

Hydrology, Flooding and Water Quality

Examples of potential cumulative effects related to hydrology include increased erosion and sedimentation, increased pollution, and increased stormwater flows. The area considered for this assessment includes two watersheds: Upper Steelhead Creek and Gibson Lake-Dry Creek (**Figure 4.16-1**).

Stormwater discharges from residential areas are of concern in managing surface water quality. Pollutants that accumulate in the dry summer months such as oil and grease, fertilizers, pesticides, and herbicides create water quality problems due to their presence in elevated concentrations, especially during the first major autumn storm event (first flush). Alternatives A, B, or C have the potential to contribute to cumulative impacts to downstream waterways, including the Sacramento River, which eventually drains into the Sacramento-San Joaquin Delta. The waterways within the Plan area are not included on the CVRWQCB's 303(d) list of impaired water bodies. However, nearby downstream waterways included on the 303(d) list include the Natomas East Main Drainage Canal (NEMDC), into which the flows from the Plan area drain, which is listed for polychlorinated biphenyls (PCBs). Additionally, the Sacramento River, at the point where the NEMDC discharges into the Sacramento River, is listed for several water quality constituents, including chlordane (agricultural source), chlorpyrifos (unknown source), DDT (agricultural source), diazinon (unknown source), dieldrin (agricultural source), diuron (unknown source), mercury (resource extraction), PCBs (unknown source), and unknown toxicity (unknown source) (CVRWQCB 2010).

As discussed in **Section 4.10**, various mitigation measures and BMPs would be employed in order to minimize water quality emissions of Alternatives A, B, or C. No suite of BMPs and mitigation measures however, is completely effective in preventing stormwater quality impacts. Therefore, some minor degree of increase in stormwater pollution is anticipated, resulting in minor increases in sediment loading, as well as construction period emissions of oil and grease, habitation period residential herbicides and pesticides, increased nutrients associated with residential use of fertilizers, and other water quality pollutants. However, the release of these water quality pollutants from the Plan area would not contribute to existing water quality impairments for PCBs, chlordane, chlorpyrifos, DDT, diazinon, dieldrin, diuron, mercury, or PCBs, because these chemicals are either currently banned or limited to agricultural use, and because the Plan area is not anticipated to contain high levels of mercury. Other potential pollutants that could be released on site would not contribute to an existing impairment.

A watershed's runoff characteristics are altered when impervious surfaces replace natural cover. Changes in the quantity of runoff may increase stream volumes, increase stream velocities, increase peak discharges, and shorten the time to peak flows. Alternatives A, B, or C could contribute to changes in runoff characteristics (volume, velocity, and hydrograph) and water quality located near the project site as a result of development. However, the proposed LID and BMP design features, combined with the proposed multi-use drainage corridors, and other proposed features and mitigation, would offset potential deleterious changes in hydrology with respect to timing and volume of peak flows, stormwater volumes, and stream velocities.

New development can also result in the alteration of waterways and floodplain encroachment and, as a result, exacerbate flooding and flood control issues. When the flood-related effects of many projects are considered together, upstream floodplain encroachment or other substantial changes to flood flowpaths can result in increased or altered flooding conditions downstream. Alternatives A and C would be subject to mitigation requirements discussed in **Section 4.10** for direct impacts, in addition to Sacramento County regulations regarding the placement of fill in a floodplain. Therefore, while some small amount of residual change to flood flows could occur under cumulative conditions, when all projects are considered together under cumulative conditions, these changes are unlikely to result in a considerable change to flood flows downstream. Alternative B would avoid floodplain encroachment altogether.

Climate change is expected to alter water resources availability and the characteristics of winter storm events across Northern California, including the Project area, as discussed by the California Climate Action Team Report (California EPA, 2006). Estimates vary somewhat depending on which climate model is used, and precipitation is predicted to increase or decrease slightly. Increased temperatures would also lead to a rise in sea level, from both thermal expansion and the melting of land-based glaciers. However, the Plan area is not located in a coastal region, and would not be affected by sea level rise.

Models indicate that the form in which precipitation occurs could change substantially due to climate change. Warmer winters would lead to less snow and more rain. As a result, the Sierra snowpack would be reduced and would melt earlier. Changes in Sierra snowpack would not directly affect waterways on site, because the onsite waterways originate locally. Watersheds considered in the cumulative analysis could also experience an increased frequency and/or intensity of major storm events, including flood events. However, as discussed above, Alternatives A, B, or C would not contribute meaningfully to flooding on site or downstream. While climate change could potentially exacerbate regional flooding, implementation of Alternatives A, B, or C, considered alongside other proposed development projects, would not further exacerbate the effects of climate change on the region.

Therefore, when considered in coordination with the anticipated projects considered for the cumulative analysis, Alternatives A, B, or C are not expected to result in a cumulatively considerable impact on hydrologic resources, including hydrology, water quality, flooding, or climate change related effects on hydrologic resources.

Land Use and Agriculture

Land Use

As discussed in **Section 4.11**, full buildout of the project site is generally consistent with the adopted Sacramento County General Plan and Rio Linda/Elverta Community Plan (RLECP) including long-term goals for residential and commercial uses, and infrastructure. Buildout includes agricultural residential on the northern portion of the project site to buffer agricultural uses in Placer County. Off-site projects would be required to be consistent with the applicable General Plan or require amendments to the General Plan, which would require approval by the local jurisdiction. Thus, Alternatives A, B and C along with other planned developments are not anticipated to conflict with existing or proposed land uses or create disorderly development.

Most of the project site is located within the overflight zone of McClellan Airport. The residential, commercial and office uses envisioned are consistent with the Comprehensive Airport Land Use Plan. Buildout assumes development of school facilities within the overflight zone. Any proposed elementary school site within the overflight zone and also within two miles of an airport runway must satisfy the requirements of Section 17215 of the California Education Code. Section 17215 requires consultation between the school district, the Department of Education and the Department of Transportation to determine the suitability of such site for development with a school use.

As buildout along with cumulative projects would be consistent with planning documents, or require approvals through amendment processes, Alternatives A, B and C would not result in cumulatively considerable land use impacts.

Agriculture

The project site does not include any Prime farmlands, Farmlands of Statewide Importance or Williamson Act lands (areas where non-agricultural development is generally discouraged). As such, Alternatives A, B and C would not contribute to cumulatively considerable agriculture impacts.

Noise

Cumulative noise source impacts would be limited to traffic. The significance of project-related noise impacts can be determined by comparing estimated cumulative project-related noise levels to cumulative no-project noise levels. An increase of at least 3 dBA is usually required before most people will perceive a change in noise levels, and an increase of 5 dBA is required before the change will be clearly noticeable. A common practice has been to assume that minimally perceptible to clearly noticeable increases of 3–5 dB represent a significant increase in ambient noise levels. **Table 4.16-4** shows the cumulative difference between the 2035 without the project and 2035 with the project. No road segment would produce a change of more than 3 dBA. Cumulative traffic impacts would therefore, be considered less than significant.

TABLE 4.16-4
CUMULATIVE SUMMARY OF ROAD SEGMENTS

	2035 + Alternative – 2035 no project (dBA)			
Road Segment	**Alt. A**	**Alt. B**	**Alt. C**	**Alt. D**
Elverta from SR 99 to E. Levee Road	0.6	0.5	0.6	0.6
Elverta from E. Levee Road to Palladay Road	0.8	0.8	0.8	0.7
Elverta from Palladay Road to 16th St.	1.7	1.7	1.7	0.7
Elverta from 16th St. to 28th St.	1.5	1.5	1.5	0.3
Elverta from 28th St. to Watt Avenue	1.1	1.1	1.1	0.2
U St. from Dry Creek Road to 16th St.	-2.7	-2.4	-2.4	0.3
9th St. from Elverta Road to U St.	2.1	1.8	2.1	0.5
Dry Creek Road from Q St. to U St.	2.4	2.4	2.5	0.1
16th St. from Q St. to Elverta Road	0.0	0.0	0.1	0.5
16th St. from Elverta to County Line	1.2	1.1	1.1	1.8

SOURCE: ESA, 2010

Public Services, Utilities and Recreation

The supply of water service at buildout of the system is addressed in the RLECP Update Final EIR, the RL/ECWD, and Cal-Am Water Supply Assessments, and the DERA EIR. As discussed in **Section 4.13**, the project site is within a water service area which would have a demand at buildout between 23,420 acre-feet per year (AF/yr) and 25,960 AF/yr. Any new large scale development would contribute cumulatively to an incremental decline in groundwater levels; however adequate groundwater supplies exist in the area to serve planned growth; thus, Alternatives A, B, or C would not contribute to a significant impact to water supply in the cumulative scenario.

Wastewater service at buildout is addressed in Sacramento County Regional Sewer District's Interceptor System Master Plan (2000). The Master Plan identifies that the project site would be served by the Upper Northwest Interceptor, for which timing is uncertain. Also wastewater demand at buildout is anticipated to exceed the capacity of the existing Sacramento Regional Wastewater Treatment Plant. The proposed 2020 Master Plan for the SRWTP anticipates an expanded capacity of 218 MGD which could serve development in the long-term; however, the Master Plan has not yet been approved due to litigation (Sacramento County, 2010). With Mitigation Measure 4.13-1 the project would coordinate with SASD and SRCSD to ensure that adequate wastewater service could be provided without exceeding the capacity of wastewater infrastructure and treatment facilities. As future development would also be required to prepare design-level studies to ensure adequate wastewater service, the cumulative impact would be less than significant. However, additional regional wastewater treatment facilities would need to be developed to provide service to all development envisioned under buildout.

As discussed in **Section 4.13**, the Kiefer Landfill is anticipated to have capacity to serve future development in Sacramento County until 2035 or later. The contribution from Alternatives A, B, or C represents a small percentage of the landfill's daily capacity, which is considered less than significant.

Electricity and natural gas are supplied in accordance with approved tariffs with the California Public Utilities Commission, typically on a first-come, first-serve basis. Further coordination with SMUD and PG&E would be required to ensure that adequate service could be provided to the cumulative developments without affecting existing customers. The contribution from Alternatives A, B, or C to cumulative energy demands is considered less-than-significant.

Cumulative development would contribute a fair share to funding public services including law enforcement services, fire protection services, schools and parks through development impact/mitigation fees and increased collection of property and sales tax from new development. Additionally, some proposed developments would include sites for new public facilities such as fire stations or schools. The specific plan project would contribute through the addition of two elementary schools and parkland/recreation areas. With increased revenue for public services and the development of facilities within planned development the cumulative impact to these public services would be less than significant.

Transportation and Traffic

As described in **Section 4.14**, Alternatives A, B, and C would increase daily and peak-hour traffic volumes, resulting in a significant and unavoidable and cumulatively considerable contribution to level of service degradation at various roadway segments, intersections, freeway mainline and merge/diverge ramps in the Plan area. Detailed analyses are provided in **Section 4.14** and **Appendix F**.

4.16.3 Cumulative Analysis for Alternative D

Unless described otherwise above, it is assumed that future development within the Plan Area under the No Permit Alternative would be consistent with existing land use plans and policies and meet the legal obligations related to environmental protection. As development under this alternative would only include low-density residential that avoids wetland fill, the No Permit Alternative is not anticipated to have cumulative effects to the majority of environmental resource areas discussed above. However, as discussed in **Section 4.3**, since future residential development can generate substantial GHG and other emissions, future development under the No Permit Alternative would contribute towards significant and adverse cumulative impacts to air quality.

4.16.4 References

Hemmen, pers. comm., 2012. Meeting between Travis Hemmen (Westervelt) and Jen Wade (ESA) regarding available mitigation banking credits. November 9, 2012.

CHAPTER 5.0
Consultation, Coordination and List of Preparers

5.1 Public Involvement

This section describes the public involvement activities that have occurred during the development of this document.

Public Scoping

On Tuesday, June 9, 2009, the USACE published a Notice of Intent (NOI) in the Federal Register to prepare an EIS for the Elverta Specific Plan Project. The NOI provided information on the Proposed Project Alternative and EIS preparation, submitting scoping comments, and attending scoping meetings. The USACE also issued a public notice in the *Sacramento Bee* newspaper on June 20, 2009, which included the same information found in the NOI. Additionally, subsequent to the public scoping meeting, the *North Country News* (a local Rio Linda monthly periodical) published an article discussing the project and public scoping meeting and providing information on public commenting.

On June 24, the USACE held a public scoping meeting at the Rio Linda Elverta Community Center in Rio Linda to solicit input on the preparation of the EIS. The meeting was held from 4:00 p.m. to 7:00 p.m. Comments were accepted during both scoping meetings and throughout the comment period, which ended on June 29, 2009. Fifteen written comments were received during the scoping period from Federal, state, and local agencies and the general public in addition to verbal comments. Refer to Appendix B for a summary of the meeting materials and comments provided during scoping.

The key comments submitted during the scoping period were: the protection of aquatic resources, including wetlands; the protection of vernal pool grasslands and endangered species habitat; the scoping process and public involvement; the project description; air quality; alternatives screening criteria and alternatives selection process; and floodplain management building requirements.

The Draft EIS is being distributed to interested agencies, stakeholder organizations and individuals. This distribution ensures that interested parties have an opportunity to express their views regarding the environmental effects of the Applicant's Preferred Alternative and alternatives, and to ensure that information pertinent to permits and approvals is provided to decision makers.

5.2 Agency Coordination

The USACE, Sacramento District, is the lead federal agency under NEPA. USACE will use the EIS to make decisions for the Applicant's Preferred Alternative or alternatives. Cooperating agencies include the U.S. Environmental Protection Agency, U.S. Fish and Wildlife, Sacramento County, and the Sacramento Metropolitan Air Quality Management District.

5.3 List of Preparers

Lead Agency

U.S. Army Corps of Engineers

Marc Fugler, Regulatory Project Manager
Michael Jewell, Regulatory Division Chief

EIS Consultants

Environmental Science Associates (ESA)

2600 Capitol Avenue, Suite 200
Sacramento, CA 95816
Phone: (916) 564-4500

Project Director: Erich Fischer

Project Manager: Paul Miller

Deputy Project Manager: Jennifer Wade

Technical Sections:

Aesthetics — Jen Wade

Air Quality & Global Climate Change — Matthew Morales, Paul Miller, M.S., REA

Biological Resources — Erich Fischer, Sarah Cortez, Lindsay Tisch

Aquatic Resources — Erich Fischer, Lindsay Tisch

Cultural & Historic Resources — Kathy Anderson

Socioeconomics and Environmental Justice — Nic Carlson

Geology, Soils and Mineral Resources — Ben Frese

Hazards & Hazardous Materials — Ben Frese, Paul Miller, M.S., REA

Hydrology, Flooding and Water Quality — Robert Eckard, Michael Burns REA

Land Use & Agriculture — Jen Wade

Noise — Ben Frese, Paul Miller, M.S., REA

Public Services, Utilities & Recreation — Aaron Hecock, AICP

Traffic & Transportation — Jack Hutchison, P.E.

Word Processing and Report Production – Logan Sakai

GIS and Graphics – Dave Beecroft and Thomas Wyatt

Subconsultants

Fehr and Peers Transportation Consultants