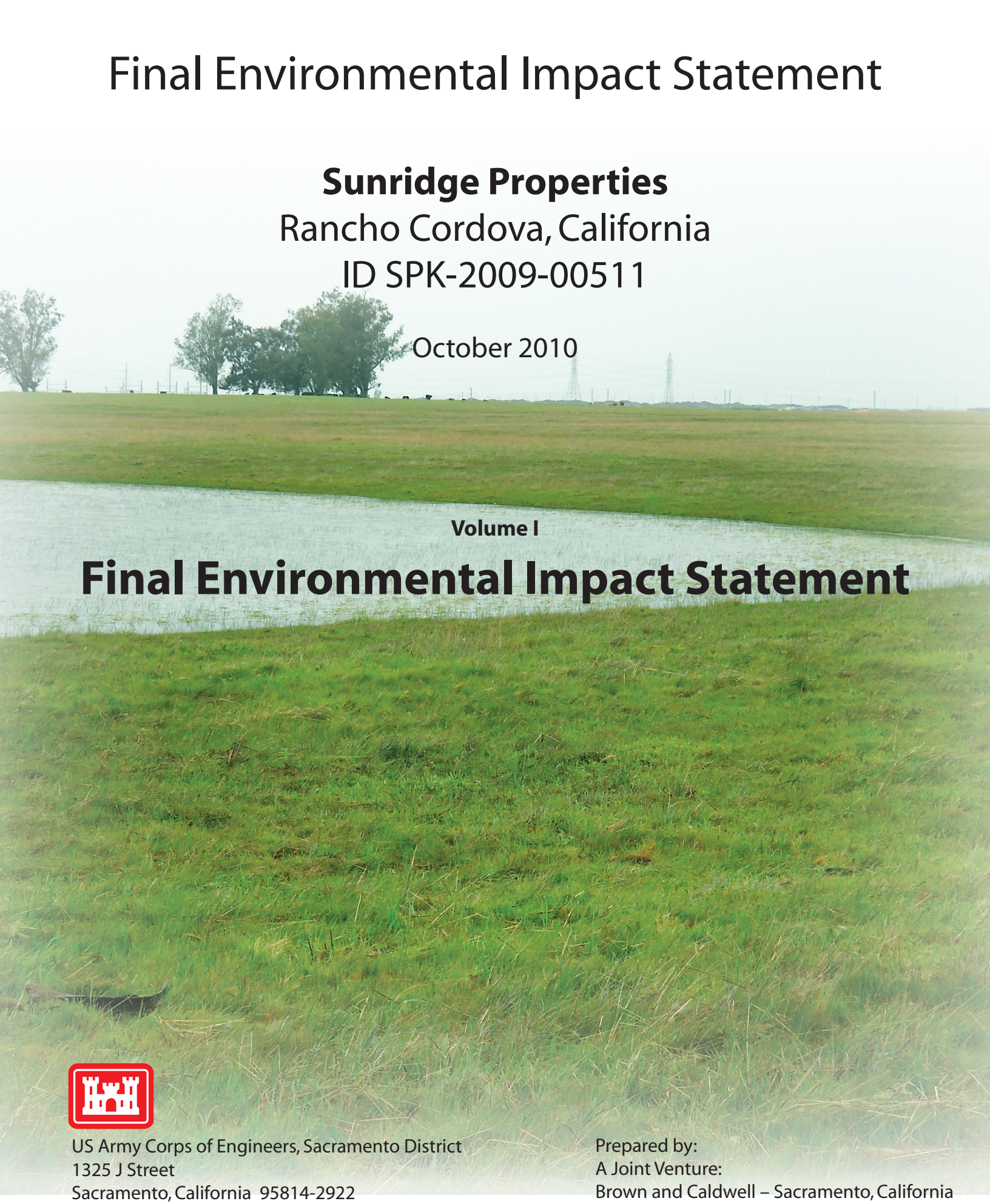
Final Environmental Impact Statement

Sunridge Properties

Rancho Cordova, California

ID SPK-2009-00511

October 2010



Volume I

Final Environmental Impact Statement

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Prepared by:
A Joint Venture:
Brown and Caldwell – Sacramento, California
CDM – Sacramento, California

FINAL
ENVIRONMENTAL IMPACT STATEMENT

SUNRIDGE PROPERTIES
RANCHO CORDOVA, CALIFORNIA

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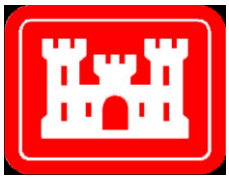

U.S. Army Corps of Engineers
Sacramento District

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Sunridge Properties
Rancho Cordova, California

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U.S. Army Corps of Engineers
Sacramento District

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ABSTRACT

Prepared in compliance with the National Environmental Policy Act (NEPA), this Environmental Impact Statement (EIS) analyzes programmatically the potential effects of implementing alternatives for six residential development projects, collectively referred to as the Sunridge Properties. The six projects are located in the Sunridge Specific Plan Area in the City of Rancho Cordova, Sacramento County, California. This EIS has been prepared as part of ongoing litigation concerning Department of the Army permits issued by the U.S. Army Corps of Engineers (USACE) between 2005 and 2007 for five of the projects, and a pending permit decision for the sixth. The permitted projects are Anatolia IV, Sunridge Village J, Grantline 208, Douglas Road 98, and Douglas Road 103. A permit decision has not been rendered for the sixth of the projects, Arista del Sol. Under the Proposed Project Alternative, the six projects would collectively require the filling of approximately 29.9 acres of waters of the United States, including wetlands. A stay in the litigation is in place, which precludes further development activities at the six project sites while the USACE reevaluates the impacts of these projects through preparation of this EIS. The EIS documents the existing condition of environmental resources in and around areas considered for development, and potential impacts on those resources as a result of implementing the alternatives. The alternatives considered in detail are: (1) No Action (no DA permit needed); (2) Proposed Project (Applicants' Preferred Alternative); and (3) Reduced Footprint.

On July 2, 2010 the Draft EIS was distributed for public review and comment, and a Notice of Availability (NOA) to review and comment was issued for a 45-day public review period on July 2, 2010. On July 27, 2010 the USACE held public meetings on the Draft EIS. Public comments and responses to the Draft EIS were compiled and addressed in the Final EIS. The Final EIS is available for public review and comment for 30 days from the date of publication of the NOA in the Federal Register, which was October 15, 2010. An electronic version of the Final EIS can be found on the Internet at http://www.spk.usace.army.mil/organizations/cespk-co/regulatory/index.html. Written comments must be received by November 15, 2010. Please submit your comments in writing, with reference to SPK-2009-00511, to the individual above.

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APPENDICES

ACRONYMS AND OTHER ABBREVIATIONS

1,2-DCE	1,2-Dichloroethene
AAQS	ambient air quality standard
AC&W	Aircraft Control and Warning
ACHP	Advisory Council on Historic Preservation
ACM	Asbestos-containing material
ADT	Average Daily Trips
Aerojet	Aerojet General Corporation
af	acre feet
af/yr	acre-feet per year
AFB	Air Force Base
AHPA	Archaeological and Historic Preservation Act
AICUZ	Air Installation Compatible Use Zone
ALUC	Airport Land Use Commission
ALUCP	Air Land Use Compatibility Plan
ALUP	Airport Land Use Plan
APE	Area of Potential Effect
AQAP	Air Quality Attainment Plan
AT&T	American Telephone and Telegraph Company
BEA	Bureau of Economic Analysis
BP	Before present
BMO	Basin Management Objectives
CAA	Clean Air Act
Cal-Am	California American Water
Cal-EPA	California Environmental Protection Agency
CALINE4	California Department of Transportation's microscale air quality model
Caltrans	California Department of Transportation
CALVENO	California Vehicle Noise
Cal-OSHA	California Occupational Safety and Health Administration
CAO	Cleanup and Abatement Order
CARB	California Air Resources Board
CBC	California Building Code
CCAA	California Clean Air Act
CCR	California Code of Regulations
CDC	California Department of Conservation
CDFG	California Department of Fish and Game
CDMG	California Division of Mines and Geology
CDPH	California Department of Public Health
CEC	California Energy Commission
CEQ	Council for 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
CEVs	controlled environment vaults
CFR	Code of Federal Regulations
cfs	cubic foot per second
CH4	Methane

ACRONYMS AND OTHER ABBREVIATIONS (continued)

ChAMP	Chemical Assessment and Management Program
CIWMB	California Integrated Waste Management Board
CLUP	Comprehensive Land Use Plan
CNEL	Community Noise Equivalent Level
CNPS	California Native Plant Society
CO	Carbon Monoxide
COC	Constituent of Concern
CO_2	Carbon Dioxide
County	Sacramento County
CRPD	Cordova Recreation and Park District
CSD-1	County Sanitation District No. 1
CSMP	Construction Site Management Program
CVP	Central Valley Project
CVPIA	Central Valley Project Improvement Act
CVRWQCB	Central Valley Regional Water Quality Control Board
CWA	Clean Water Act
DA	Department of Army
dB	decibel
dBA	decibel A-weighted
dbh	diameter at breast height
DDE	Dichlorodiphenyldichloroethylene
DHS	California Department of Health Services
DMG	California Division of Mines and Geology
DOF	Department of Finance
DOG	California Division of Oil and Gas
DTSC	California Department of Toxic Substances Control
DWSAP	Drinking Water Source and Assessment Program
EA	Environmental Assessment
EBMUD	East Bay Municipal Utilities District
EDU	equivalent dwelling unit
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
EMD	Sacramento County Environmental Management Department
EPCRA	Emergency Planning and Community Right-to-Know Act
ERNS	Emergency Response Notification System
ESA	Federal Endangered Species Act
FAA	Federal Aviation Administration
FCUSD	Folsom Cordova Unified School District
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FMMP	Farmland Mapping and Monitoring Program
FONSI	Finding of No Significant Impact
FPPA	Farmland Protection Policy Act
FR	Federal Register
ft	foot
FTA	Federal Transit Authority
GET	groundwater extraction and treatment
GHG	Greenhouse gases

ACRONYMS AND OTHER ABBREVIATIONS (continued)

GIS	Geographical Information System
HCD	California Department of Housing and Community Development
HCM	Highway Capacity Manual
HMBP	Hazardous Materials Business Plan
HOV	High Occupancy Vehicle
HSWA	Hazardous and Solid Waste Amendments of 1984
HTRW	Hazardous, Toxic, and Radioactive Waste
HUD	US Department of Housing and Urban Development
HVAC	Heating, ventilating, and air conditioning
Hz	Hertz
IGSM	Integrated Groundwater and Surface Water Model
in/sec	inches per second
IRCTS	Inactive Rancho Cordova Test Site
IRP	Installation Restoration Program
ISO	Insurance Services Office
ITE	Institute of Transportation Engineers
JPA	Joint Powers Authority
kV	kilovolt
L_{dn}	Day/Night Noise Level
LAFCo	Local Agency Formation Commission
lb/day	pounds per day
LEDPA	Least environmentally damaging practicable alternative
L_{eq}	Noise-equivalent level
LIM	Land Inventory and Monitoring
L_{max}	Maximum instantaneous noise level
L_{min}	Minimum instantaneous noise level
LOS	Level of Service
LRT	Light Rail Transit
LTS	Less than Significant
LTSWM	Less than Significant with Mitigation
LUFT	Leaking underground fuel tank
MAFB	Mather Air Force Base
MAPA	Mather Airport Policy Area
MBTA	Migratory Bird Treaty Act
MBTE	Methyl Tertiary Butyl Ether
MCL	maximum contaminant level
MDC	McDonnell Douglas Corporation
mgd	million gallons per day
mg/l	milligrams per liter
MOU	Memorandum of Understanding
MRZ	mineral resource zone
msl	mean sea level
MW	megawatt
NASA	National Aeronautics and Space Administration
NDMA	N-nitrosodimethylamine
NEHRP	National Earthquake Hazards Reduction Program
NEHRPA	National Earthquake Hazards Reduction Program Act
NEPA	National Environmental Policy Act

ACRONYMS AND OTHER ABBREVIATIONS (continued)

NESHAP	National Emissions Standards for Hazardous Air Pollutants
NHPA	National Historic Preservation Act
NI	No Impact
NO_2	Nitrogen Dioxide
NO_x	Nitrous Oxide
NOI	Notice of Intent
NPDES	National Pollutant Discharge Elimination System
NPL	National Priorities List
NRCS	USDA Natural Resources Conservation Service
NRHP	National Register of Historic Places
NVWF	North Vineyard Well Field
ODW	CDDH Office of Drinking Water
OEHHA	Office of Environmental Health Hazard Assessment
OES	Office of Emergency Services
OPR	Office of Planning and Research
OSHA	US Occupational Safety and Health Administration
OU	Operable unit
PAHs	polycyclic aromatic hydrocarbons
Pb	lead
PCBs	Polychlorinated biphenyls
PCA	possible contaminating activities
PCE	Perchloroethylene
pCi/L	Picocuries per liter
PFFP	Public Facilities Financing Plan
PG&E	Pacific Gas and Electric Company
PL	Public Law
PM_{10}	particulate matter 10 microns in diameter or smaller
POU	Place of Use
ppb	parts per billion
ppm	parts per million
ppv	peak particle velocity
PSA	Preliminary Site Assessment
psi	pounds per square inch
PUEs	public utility easements
RCRA	Resource Conservation and Recovery Act
RHNA	Regional Housing Needs Allocation
RHNP	Regional Housing Needs Plan
ROAP	Regional Ozone Attainment Plan
ROG	Reactive Organic Gases
ROD	Record of Decision
RT	Regional Transit
RWQCB	Regional Water Quality Control Board
SAC	Strategic Air Command
SACOG	Sacramento Area Council of Governments
SARA	Superfund Amendment and Reauthorization Act
SASD	Sacramento Area Sewer District
SAWWA	Sacramento Area Water Works Association
SB	Senate Bill
SCC	Sacramento County Code

ACRONYMS AND OTHER ABBREVIATIONS (continued)

SCEMD	Sacramento County Environmental Management Department
SCS	Soil Conservation Service
SCWA	Sacramento County Water Agency
SDWA	Safe Drinking Water Act
SERC	State Emergency Response Commission
SHPO	State Historic Preservation Office
SIP	State Implementation Plan
SMARA	Surface Mining and Reclamation Act
SMAQMD	Sacramento Metropolitan Air Quality Management District
SMFD	Sacramento Metropolitan Fire District
SMUD	Sacramento Municipal Utility District
SENEL	Single-event noise exposure level
SEL	Sound exposure level
SR	State Route
SRA	State Recreation Area
SRC	Sacramento Rendering Company
SRCSD	Sacramento Regional County Sanitation District
SRSP	Sunridge Specific Plan
SRWTP	Sacramento Regional Wastewater Treatment Plant
SSCAWA	South Sacramento County Agricultural Water Authority
SSHCP	South Sacramento Habitat Conservation Plan
SU	Significant and Unavoidable
SVOCs	Semi-Volatile Organic Compounds
SVRA	State Vehicular Recreation Area
SWRCB	State Water Resources Control Board
SWSI	Supplemental Water Supply Investigation
SYMVCD	Sacramento-Yolo Mosquito and Vector Control District
TAC	Toxic Air Contaminants
TAPs	Toxic Air Pollutants
tbd	to be determined
TCA	Trichloroethane
TCE	Trichloroethylene
TCR	Transportation Concept Report
TDS	Total Dissolved Solids
TIS	Traffic Impact Study
TMA	Transportation Management Association
TSCA	Toxic Substances Control Act
$\mu g/m^3$	micrograms per cubic meter
URBEMIS	urban emissions
U.S.	United States
USACE	U.S. Army Corps of Engineers
USC	United States Code
USDA	U.S. Department of Agriculture
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
UPA	Urban Policy Area
UWMP	Urban Water Management Plan
VOCs	Volatile Organic Compounds
WFP	Water Forum Plan

ACRONYMS AND OTHER ABBREVIATIONS (continued)

WRD	Water Resources Department or Water Resources Division
WSA	Water supply assessment
WSMP	Water Supply Master Plan
WTP	Water Treatment Plant

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EXECUTIVE SUMMARY

ES.1 BACKGROUND

This Environmental Impact Statement (EIS) has been prepared under the National Environmental Policy Act (NEPA) for six residential development projects in the Sunridge Specific Plan Area located in the City of Rancho Cordova, California. The six projects are collectively referred to as the Sunridge Properties or "Proposed Action" in the EIS. Under its regulatory program, the U.S Army Corps of Engineers (USACE) will complete decisions for Department of Army (DA) permits for the six projects, based on requirements of the Clean Water Act. The USACE is the lead federal agency responsible for the preparation of this EIS.

Between 2004 and 2007, applicants for nine projects in the Sunridge Specific Plan Area, which is part of the larger Sunrise-Douglas Community Plan Area, submitted DA permit applications to the USACE to fill waters of the United States (U.S.), including wetlands. Following its permit review processes, including preparation of Environmental Assessments (EAs), the USACE issued permits for eight of the nine projects.

Considered in each of the DA permit decisions was an advisory document entitled *The Conceptual Level-Strategy for Avoiding, Minimizing and Preserving On-Site Aquatic Resource Habitat in the Sunrise-Douglas Community Plan Area* (Conceptual Strategy) dated June 2004. The Conceptual Strategy was prepared by USACE, the U.S. Fish and Wildlife Service (USFWS), and the U.S. Environmental Protection Agency (USEPA), and presents standards and principles intended to assist developers in minimizing effects to aquatic resources and sensitive species. The developers used the Conceptual Strategy to plan land developments and prepare DA permit applications.

In 2006, the California Native Plant Society (CNPS), the Defenders of Wildlife, and the Butte Environmental Council (Plaintiffs) filed an action in federal District Court, challenging, among other things, the USACE's issuance of DA permits for the nine projects in the Sunridge Specific Plan Area. The federal judge granted the Plaintiffs a motion for Preliminary Injunction requiring the USACE to take a "harder look" at the impacts of the permit decisions. Based on the Court's ruling, the USACE then determined that it would need to prepare an EIS to evaluate and present the direct, indirect, and cumulative effects of the permit decisions.

Of the nine projects in the Sunridge Specific Plan Area, three completed the filling of waters of the U.S. in accordance with the issued DA permits before the action was brought to the court. They are North Douglas, Montelena, and Sunridge Park. Five projects were issued DA permits, but the filling of the waters of U.S. was not completed. They are Anatolia IV, Sunridge Village J, Grantline 208, Douglas Road 98, and Douglas Road 103. The last project, Arista del Sol, is pending a permit decision.

This EIS provides a programmatic analysis of the impacts associated with development of the six properties. In addition to disclosing the individual effects of each project, this EIS assesses the combined effects of permit decisions. This EIS also addresses the cumulative effects to wetlands and waters of U.S. resulting from development in the Sunridge Specific Plan Area and the Conceptual Strategy in maintaining viable wetland communities. Information presented in this document will be used to supplement project-specific Environmental Assessments previously prepared for five permits. A NEPA document for the sixth project will be prepared and tier from this EIS prior to a permit decision being made.

Based on the analyses in this EIS and comments received from the public, the USACE may take one of several actions related to the DA Permits for the Sunridge Properties. For the five permitted projects, the USACE may: 1) Reinstate one or more of the permits with the permit requirements as currently stipulated, 2) Modify the terms or conditions of one or more of the permits, or 3) Initiate revocation procedures for one or more of the permits. For the one project without a DA permit, the USACE will make a permit decision.

ES.2 ALTERNATIVES ADDRESSED IN THIS EIS

A **No Action (No DA Permit) Alternative** serves as a basis for comparison of the action alternatives. This alternative is one that involves no construction requiring a DA permit. Under this alternative, the USACE would not reinstate or modify the five DA permits previously issued and would not approve the permit for the Arista del Sol project. As such, developers for the Sunridge Properties would not be authorized to fill waters of the U.S., including wetlands. This would not preclude the developers from undertaking construction activities on the parts of their properties that lie outside of waters of the U.S. For purposes of environmental analyses in this EIS, it was assumed that the developers could complete development activities to within 25 feet of wetlands or waters of the U.S. Approximately 2,060 homes over 303 acres are estimated for the No Action Alternative (see Chapter 2, Section 2.4.2.1 for a more complete explanation of the derivation of these numbers).

The **Proposed Project Alternative**, which is implementation of the projects as specified in the DA permits for the five permitted projects, and as specified in the DA permit application for the sixth, Arista del Sol, would collectively result in the development of 588.5 acres for residences, neighborhood parks, roads, drainage basins, and commercial space, including 3,258 single family homes, with 153.6 acres undeveloped as wetlands preserves. The Proposed Project Alternative would result in the collective filling of 29.9 acres of waters of the U.S. Based on the guidelines in the Conceptual Strategy, 153.6 acres of existing wetlands would be preserved within the project area. As part of the compensatory mitigation, 34 acres of vernal pool habitat would be created and 53 acres would be preserved at off-site locations (see Table 2-2).

Based on comments received from the public during EIS scoping, the USACE developed a third alternative referred to as the **Reduced Footprint Alternative**. This alternative is intended to better protect tributaries of Laguna and Morrison Creeks, incorporating topography, watershed boundaries, and existing vernal pools into the design of the area to be preserved. The Reduced Footprint Alternative would result in the residential development of 455.8 acres, including 2,511 single family homes, and the filling of 20.3 acres of the waters of the U.S (see Chapter 2, Section 2.4.2.3 for a more complete explanation of the derivation of these numbers). A total of 286.2 acres would be undeveloped as an onsite preserve. This alternative includes creation of 20.4 acres and preservation of 40.8 acres of vernal pool habitat at an off-site location (see Table 2-2).

ES.3 RESOURCES EVALUATED

The following resource areas are evaluated in this EIS in detail. Detailed analysis was determined to be necessary because some of the effects could be related to the DA permit decisions.

- Biological Resources (including wetlands and endangered species)
- Hydrology, Water Quality, Water Supply, and Groundwater
- Air Quality
- Land Use

- Population, Employment, and Housing
- Traffic and Transportation
- Noise
- Utilities and Public Services
- Public Health and Safety
- Environmental Justice
- Hazardous, Toxic and Radioactive Waste
- Visual Resources
- Historic and Cultural Resources
- Geology and Soils
- Climate Change

The following text provides summaries of the environmental effects of the projects on the resource areas analyzed in detail. Table ES-1 summarizes the comparative analysis of the alternatives for each resource area.

Table ES-1 Comparative Analysis of the Alternatives			
Environmental Consequence	**No Action Alternative**	**Proposed Project Alternative**	**Reduced Footprint Alternative**
Biological Resources			
3.2-1: An adverse effect on a population of threatened, endangered, or candidate species	SU	LTSWM	LTSWM
3.2-2: A net loss in the habitat value of sensitive biological habitat	SU	SU	SU
3.2-3: Substantial impedance to the movement or migration of fish or wildlife	LTS	LTS	LTS
3.2-4: Substantial population loss of any native fish, wildlife, or vegetation	SU	LTSWM	LTSWM
Hydrology, Water Quality, Water Supply, Groundwater			
3.3-1: Potential for an increase in the rate and volume of drainage runoff from the site	LTSWM	LTSWM	LTSWM
3.3-2: Potential for discharge that affects surface water quality	LTSWM	LTSWM	LTSWM
3.3-3: Potential for changes in groundwater elevations around the Elk Grove cone of depression	LTS	LTS	LTS
3.3-4: Potential for changes in groundwater elevations adjacent to the proposed well field	LTS	LTS	LTS
3.3-5: Potential for changes in groundwater elevations and around known contaminant plumes	LTS	LTS	LTS
3.3-6: Potential for changes in rate of contaminant plume migration	LTS	LTS	LTS
3.3-7: Potential migration of lower quality (higher TDS) groundwater in Aquifer 2 up into Aquifer 1	LTS	LTS	LTS
Key: LTS = Less than Significant, LTSWM = Less than Significant with Mitigation, NI = No Impact, SU = Significant and Unavoidable.			

Table ES-1 Comparative Analysis of the Alternatives (continued)			
Environmental Consequence	**Alternative 1: No Action**	**Alternative 2: Proposed Project**	**Alternative 3: Reduced Footprint**
Hydrology, Water Quality, Water Supply, Groundwater			
3.3-8: Potential for exceedance of drinking water standards	LTS	LTS	LTS
3.3-9: Changes in groundwater elevations adjacent to the proposed well field	SU	SU	SU
3.3-10: Increased need for development of long-term regional surface and groundwater supplies	SU	SU	SU
Air Quality			
3.4-1: Short-term increase in construction-related emissions	LTSWM	LTSWM	LTSWM
3.4-2: Exposure of future residents to odors from the Sacramento Rendering Company (SRC)	SU	SU	SU
3.4-3: Long-term increase in ROG, Nox, and PM10 emissions	SU	SU	SU
3.4-4: Non-conformance with the City of Rancho Cordova General Plan Policy AQ.1.2.3	LTSWM	LTSWM	LTSWM
Land Use			
3.5-1: Conflict with applicable land use laws policies, regulation, or plans of an agency with jurisdiction over the project	LTS	LTS	LTS
3.5-2: Physically divide an established community	LTS	LTS	LTS
3.5-3: Convert prime farmland, unique farmland, or farmland of statewide importance to nonagricultural use	LTS	LTS	LTS
Key: LTS = Less than Significant, LTSWM = Less than Significant with Mitigation, NI = No Impact, SU = Significant and Unavoidable.			

Table ES-1 Comparative Analysis of the Alternatives (continued)			
Environmental Consequence	**Alternative 1: No Action**	**Alternative 2: Proposed Project**	**Alternative 3: Reduced Footprint**
Population, Employment, and Housing			
3.6-1: Reduction in available housing	NI	NI	NI
3.6-2: Demand for new housing	NI	NI	NI
3.6-3: Displace substantial numbers of existing people or housing	NI	NI	NI
Traffic and Transportation			
3.7-1: Reduced level of service	SU	SU	SU
Noise			
3.8-1: Temporary exposure to construction generated noise	LTSWM	LTSWM	LTSWM
3.8-2: Potential exposure to stationary-source noise generated by on-site land uses	LTSWM	LTSWM	LTSWM
3.8-3: Potential exposure to off-site stationary source noise	SU	SU	SU
3.8-4: Project-generated increases in traffic noise levels on area roadways	LTS	LTS	LTS
Utilities and Public Services			
3.9-1: Increased demand for energy services	LTSWM	LTSWM	LTSWM
3.9-2: Increased demand for fire protection services	LTSWM	LTSWM	LTSWM
3.9-3: Increased demand for law enforcement services	LTSWM	LTSWM	LTSWM
3.9-4: Increased demand for school services	LTS	LTS	LTS
3.9-5: Increased demand for telephone and cable television services	LTSWM	LTSWM	LTSWM
Key: LTS = Less than Significant, LTSWM = Less than Significant with Mitigation, NI = No Impact, SU = Significant and Unavoidable.			

Table ES-1 Comparative Analysis of the Alternatives (continued)			
Environmental Consequence	**Alternative 1: No Action**	**Alternative 2: Proposed Project**	**Alternative 3: Reduced Footprint**
Utilities and Public Services			
3.9-6: Increased demands for transit service	LTSWM	LTSWM	LTSWM
3.9-7: Increased demands for library service	LTS	LTS	LTS
3.9-8: Increased demand for solid waste service	LTS	LTS	LTS
3.9-9: Lack of consistency with the General Plan	LTS	LTS	LTS
3.9-10: Sufficiency of project site parkland to meet project site demand/increased demand on regional parks	LTSWM	LTSWM	LTSWM
Hazardous, Toxic, and Radioactive Waste			
3.10-1: Potential for construction workers and residents exposure to hazardous materials in soil from historic uses of the project site	LTS	LTS	LTS
3.10-2: Potential for future resident exposure to groundwater contaminants from existing water wells in the area	LTSWM	LTSWM	LTSWM
3.10-3: Potential construction worker and residential exposure to hazardous waste from illegal disposal practices	LTSWM	LTSWM	LTSWM
3.10-4: Potential construction worker and residential exposure to hazardous wastes from demolition and construction	LTSWM	LTSWM	LTSWM
Key: LTS = Less than Significant, LTSWM = Less than Significant with Mitigation, NI = No Impact, SU = Significant and Unavoidable.			

Table ES-1 Comparative Analysis of the Alternatives (continued)			
Environmental Consequence	**Alternative 1: No Action**	**Alternative 2: Proposed Project**	**Alternative 3: Reduced Footprint**
Public Health and Safety			
3.11-1: Create a public health hazard through the use, production, generation, release, or disposal of materials that pose a hazard to human, animal, or plant populations	LTS	LTS	LTS
3.11-2: Potential safety hazards from construction activities	LTSWM	LTSWM	LTSWM
3.11-3: Human health hazards associated with mosquito-borne diseases	LTSWM	LTSWM	LTSWM
3.11-4: Located on a hazardous materials site that is included on the list generated by Government Code Section 65962.5 (Cortese List)	NI	NI	NI
3.11-5: Create a safety hazard for people living or working at the project sites as a result of a project located within an airport land use plan, located within 2 miles of a public airport, or located in the vicinity of a private airstrip	NI	NI	NI
3.11-6: Expose people to a significant risk of loss, injury, or death from exposure to wildland fires.	NI	NI	NI
Environmental Justice			
3.12-1: Potential effects on low-income populations	LTS	LTS	LTS
3.12-2: Potential effects on minority populations	LTS	LTS	LTS
Visual Resources			
3.13-1: Alteration of a scenic vista	LTS	LTS	LTS
3.13-2: Damage to scenic resources within a state scenic highway	NI	NI	NI
Key: LTS = Less than Significant, LTSWM = Less than Significant with Mitigation, NI = No Impact, SU = Significant and Unavoidable.			

Table ES-1 Comparative Analysis of the Alternatives (continued)			
Environmental Consequence	**Alternative 1: No Action**	**Alternative 2: Proposed Project**	**Alternative 3: Reduced Footprint**
Visual Resources			
3.13-3: Degradation of visual character	SU	SU	SU
3.13-4: Temporary degradation of visual character for developed land uses caused by construction staging areas	SU	SU	SU
3.13-5: New light and glare effects	LTSWM	LTSWM	LTSWM
3.13-6: New skyglow effects	SU	SU	SU
Historic and Cultural Resources			
3.14-1: Loss or damage to recorded cultural resources sites	NI	NI	NI
3.14-2: Loss or damage to historic sites, buildings, and structures	NI	NI	NI
3.14-3: Potential damage to undiscovered prehistoric sites or Native American burials	LTSWM	LTSWM	LTSWM
Geology and Soils			
3.15-1: Potential temporary, short-term construction-related erosion	LTSWM	LTSWM	LTSWM
3.15-2: Potential damage to structures from seismic activity and related geologic hazards	LTS	LTS	LTS
3.15-3: Potential damage to structure from construction on unstable soils	LTSWM	LTSWM	LTSWM
3.15-4: Loss of mineral resources	LTS	LTS	LTS
Climate Change			
3.16-1: Short-term increase in construction-related GHG emissions	LTS	LTS	LTS
3.16-2: Long-term increase in GHG emissions	LTSWM	LTSWM	LTSWM
3.16-3: Potential to conflict with or obstruct implementation of GHG reduction measures or goals under AB 32	LTSWM	LTSWM	LTSWM
Key: LTS = Less than Significant, LTSWM = Less than Significant with Mitigation, NI = No Impact, SU = Significant and Unavoidable.			

BIOLOGICAL RESOURCES

This EIS assesses the effects of the alternatives on vegetation, wildlife, special-status species, wetlands and vernal pools. The study area is comprised primarily of non-native grassland and wetland complexes, including old-terrace type vernal pools. Old-terrace type vernal pools include vegetation that is native, and dominated by annual herbs and grasses. The study area generally supports wildlife species that utilize non-native grasslands and vernal pools. Many bird species are known to inhabit the study area, including raptors, while large mammals are generally absent. Vernal pool complexes support special-status crustaceans. Vernal pool habitat has been noted by the USFWS and others as requiring protection because it is unique and supports special-status species.

In 2004, USACE, USEPA, and USFWS prepared a conceptual-level strategy for avoiding, minimizing, and preserving aquatic resource habitat in the Sunrise-Douglas Community Plan Area. The Conceptual Strategy sets forth ten principles and standards that should be followed during development of projects within the Sunrise-Douglas Community Plan area in order to achieve reasonable protection and conservation of federally threatened and endangered species under the Endangered Species Act, while taking a regional approach to avoidance and minimization of impacts to waters of the U.S., including wetlands, in accordance with Section 404(b)(1) guidelines under the Clean Water Act (USACE, 2005a).

Based on previous studies and focused plant and wildlife species surveys, two special-status species occur within the study area: the threatened vernal pool fairy shrimp (*Branchinecta lynchi*) and the endangered vernal pool tadpole shrimp (*Lepidurus packardi*). Both of these species have the potential to occur in vernal pools at the project sites. The project sites are not within designated critical habitat for these species.

Under the No Action Alternative, none of the wetlands and other waters of the U.S. within the study area would be filled. As such there would be no direct impact resulting from a Corps permit. For this alternative, it was assumed development activities would occur up to 25 feet of waters of the U.S. Because of the potential for indirect effects on listed species, the six projects might need to obtain permits under Section 10 of the Endangered Species Act from the USFWS. In Biological Opinions issued for the five of the six projects DA permits, the USFWS indicated that there would be a potential for indirect effects for activities within 250 feet of wetland and vernal pools habitats. Therefore, significant and unavoidable indirect effects could still occur under the No Action Alternative.

Under the Proposed Project Alternative,742 acres would be developed into residential, neighborhood parks, road improvements, preserve space, drainage basin, and commercial space. A total of 153.6 acres would be set aside as wetland preserve. There would be a total net loss of 588.5 acres of non-native annual grasslands within which 29.9 acres of waters of the U.S., including 17.53 acres of vernal pools, would be filled (see Table 2-3). Without compensatory mitigation, significant impacts to the threatened vernal pool fairy shrimp and the endangered vernal pool tadpole shrimp would occur under the Proposed Project Alternative. Direct effects would occur through mortality to these species and permanent loss of vernal pool habitat, and indirect effects would occur through loss or alteration of upland and swale areas that support aquatic habitat. This alteration includes fragmentation of habitat and changes to hydrology as well as increased sediment, pollutants, and nutrients to wetlands downstream. In addition, increased human presence would result in the introduction of invasive plants, feral and non-feral cats and dogs and other non-native predators to sensitive species, and hazardous and non-hazardous waste and materials. The USFWS estimates that any wetland or vernal pool habitat within 250 feet of project development may be indirectly impacted. To mitigate for these impacts, 34.2 acres of vernal pool habitat would be created offsite as compensatory mitigation, and 52.7 acres vernal pool habitat would be preserved offsite as compensatory preservation. This offsite mitigation could occur at the Gill Ranch Open Space Preserve, a 10,400-acre preserve in eastern Sacramento County that consists of annual grassland with

vernal pool complexes throughout. With mitigation, the overall impact to habitat would be considered to be less than significant.

Under the Reduced Footprint Alternative, development would be similar to the Proposed Project Alternative except for the additional preservation of an area comprising the headwaters of Laguna Creek near Grantline Road and a small additional area in the Morrison Creek watershed. The Reduced Footprint Alternative would contain 35 percent less development for the Grantline 208 project, 11 percent less development for the Douglas Road 98 project, and 41 percent less development for the Arista del Sol project. The other three project sites would allow similar amounts of development as the Proposed Project Alternative. Under the Reduced Footprint Alternative there would be a total net loss of 456 acres of non-native annual grasslands within which 20.3 acres of waters of the U.S. would be filled. As with the Proposed Project Alternative, prior to compensatory mitigation significant impacts to the threatened vernal pool fairy shrimp and the endangered vernal pool tadpole shrimp would occur under the Reduced Footprint Alternative. Direct impacts would occur through mortality to these species and permanent loss of vernal pool habitat, and indirect impacts would occur through loss or alteration of upland habitat, increased human presence, changes to hydrology, increased sediment, pollutant and nutrient influx, or other created conditions. A total of 286 acres of wetland habitat would be preserved on-site. To mitigate for loss of vernal pool species and habitat, 20.4 acres of vernal pool habitat would be created offsite as compensatory mitigation, and 40.8 acres of vernal pool habitat would be preserved offsite as compensatory preservation. With mitigation, the overall impact to vernal pool species would be considered less than significant.

Both the Proposed Project Alternative and Reduced Footprint Alternative have the potential for interruption of wildlife movement through the filling of wetlands and corridor habitat. The No Action Alternative would have the greatest potential for impacting wildlife populations because development could take place within 25 feet of wetlands.

HYDROLOGY, WATER QUALITY, WATER SUPPLY, AND GROUNDWATER

This EIS assesses effects from the alternatives on water resources, including hydrology, surface and groundwater quality, and surface and groundwater supply. The six Sunridge Specific Plan project properties lie in the headwaters of Laguna and Morrison Creeks, which is an area with a large number of vernal pools created due to local soil drainage properties that seasonally pond rainwater. The hydrologic regime is dominated by seasonal precipitation and stormwater runoff, primarily during the months of November through March.

Because the nature of these projects is development resulting in a high percentage of grading, ground contouring and new impervious surfaces, the overall drainage system would be altered, changing the surface hydrology. Surface runoff would be expected to increase under all three alternatives. However, the projects include surface water detention facilities that would be designed per Sacramento County regulations to contain stormwater and urban runoff, so that overall discharges from the project sites would be the same as under existing conditions. It is anticipated that the stormwater detention basins would be similar for all alternatives and thus there is no difference between the alternatives.

Water supply for the projects will be supplied initially by groundwater (the North Vineyard Well Field), and in the near future by the conjunctive use of groundwater and surface water from the Sacramento River Freeport Regional Water Project. There are significant and unavoidable adverse effects to water supply under all three alternatives.

Groundwater in the vicinity of the project sites is contaminated with industrial solvents. Off-site groundwater is expected to be one water supply source and increased groundwater pumping may cause

induced migration of the contamination plumes. Prevention of groundwater impacts would depend on actions taken by water agencies in identification of pumping and management of the groundwater resource.

AIR QUALITY

The air quality assessment addresses air quality-related impacts from the alternatives related to exceedances of regulatory air quality threshold levels due to construction-related emissions, exceedances of air quality threshold levels due to increased vehicle traffic-related emissions, exposure of future residents to odors from surrounding existing industries that could lead to exposures and public complaints, and non-conformance with air quality policies found in the Sacramento County General Plan.

Sacramento County is in attainment for state and federal ambient air quality standards with the exception of the federal air quality standards for ozone, and the federal and state standards for particulate matter (PM10 and PM2.5). Sacramento County is part of the larger Sacramento Federal Ozone Nonattainment Area which is designated a "serious" nonattainment area for the federal eight-hour ozone standard, and is designated a "serious" nonattainment area for the state one-hour ozone standard. Thus, the Sacramento Metropolitan Air Quality Management District (SMAQMD) has petitioned the USEPA to change the boundaries for the particulate non-compliance area. SMAQMD has developed regulations and programs to minimize emissions of all air pollutants – including those that exceed state and federal standards. Due in part to the implementation of these regulations and programs, the Sacramento region's air quality continues to improve.

Activities associated with construction of single family homes and associated infrastructure would result in the temporary generation of emissions of reactive organic gases (ROG), oxides of nitrogen (NOx) and PM10. These emissions would result from construction activities including ground disturbance, construction worker commute trips, asphalt paving, mobile and stationary construction equipment exhaust, soil erosion, and architectural coatings.

Because all three alternatives would involve some degree of construction, emissions would be generated with the Proposed Project Alternative producing the greater amounts and the No Action Alternative generating the least. It is assumed that the developers would comply with SMAQMD rules and regulations to mitigate for the temporary air quality emissions from construction and thus air quality impacts would be insignificant.

Increased vehicle traffic emissions as a result of new residences would be an unavoidable adverse air quality effect. Control of vehicle emissions is addressed at the regional and state level and thus cannot be mitigated. It is anticipated that policies stated in the Sacramento County General Plan would be enforced to address regional air emission issues under all three alternatives.

Odors from the Sacramento Rendering Plant near the project sites would remain a public nuisance issue. Implementation of any of the alternatives could expose a greater population to the nuisance odors. Future residents would be notified of the existence of the plant, which is the only viable mitigation measure.

LAND USE

The land use assessment addresses the compatibility of the alternatives with general land use plans and the loss of agricultural lands. Agricultural land conversion in general is a significant issue in the Sacramento Valley.

The project sites are within the City of Rancho Cordova, which incorporated in 2003. Historically, land use in the area consisted of grazing land and some stock ponds. Scattered farmsteads, buildings and other agricultural infrastructure also typified lands within the area. In recent decades, some business and industrial complexes and residential developments have been constructed in the area east of Sunrise Boulevard. Mather Field is now in operation as a civilian air field and business park. Surrounding land use consists of the Security Industrial Park and Aerojet General property to the north, Mather Field and industrial properties to the west, and agricultural lands to the south and east. Kiefer Landfill is located to the south and a rendering plant to the north.

The Proposed Project Alternative would comply with the City of Rancho Cordova General Plan and Sunridge Specific Plan since urban development would be consistent with these plans. The Reduced Footprint Alternative is expected to meet the development plans of the City of Rancho Cordova, while the No Action Alternative does not comply with the plan goals.

The alternatives would result in the conversion of agricultural land to urbanized land. Although agricultural land conversion can be controversial and is often considered a significant land use impact, the General Plan established conversion to urban development as a goal; therefore the conversion is not considered significant for all three alternatives.

POPULATION, EMPLOYMENT, AND HOUSING

The population and housing/socioeconomics assessment addresses the issue of whether adequate housing exists for workers who would construct the projects. The Housing Element of the Rancho Cordova General Plan identified housing solutions to solve regional housing need problems and meet or exceed the regional housing needs allocation. The City incorporated in 2003 as a jobs-rich community with homes and apartments that could not meet the housing demands of the workforce. In the Housing Element, the City outlines goals, policies, and actions to ensure a suitable mix of housing to match the community's needs. Implementation of the Sunridge Specific Plan is one means of addressing housing needs. Construction of new housing as addressed in this EIS would therefore be beneficial to the City and region. Although the current economic climate for the Sacramento Metropolitan Area is not conducive to large-scale residential development, it is expected that housing demand will increase as the economy recovers.

The environmental analysis addressed the potential effect of temporary construction workers placing a strain on the local housing market under the assumption that there was an inadequate local worker population and workers would need to be imported and housed. However, the analysis shows that an adequate local population would exist, given regional economic conditions, and therefore no new housing for workers would be necessary. This analysis applies to all three alternatives.

Implementation of the Sunridge Specific Plan, including the six projects addressed in this EIS, would have a beneficial effect on the local economy. The projects would provide for temporary construction jobs and long-term maintenance and support services jobs.

TRAFFIC AND TRANSPORTATION

The traffic and transportation assessment addresses whether the alternatives would cause an adverse effect to traffic. Under existing conditions, some roadways in the project vicinity are congested with a poor level of service. Traffic and transportation issues are recognized in the Sunridge Specific Plan and roadway improvements have been planned. The roadway improvements are to be implemented irrespective of completion of the alternatives. However, even with mitigation, some roadway intersections will still experience a poor level of service during peak traffic periods. The transportation

impacts therefore are considered significant and unavoidable for all three alternatives. The transportation impacts would occur with or without implementation of the alternatives discussed in this EIS. Because the Proposed Project Alternative would result in construction of the greatest number of homes resulting in the largest number of new vehicles on the road, the Proposed Project Alternative would contribute the greatest impact to the local traffic issues. The Sunrise-Douglas Community Plan/Sunridge Specific Plan EIR includes mitigation measures proposed for the area to address the overall traffic congestion issues, which would help to offset traffic impacts for all three alternatives.

NOISE

The noise analysis in this EIS addresses effects from the alternatives including construction noise on existing land uses, increased traffic noise related to the new housing, and noise from existing sources that may affect new noise-sensitive receptors occupying the new housing. Noise receptors in this analysis are defined as residential homes and schools. The existing noise sources in the project site are reflected by traffic traveling on surrounding roadways (along Sunrise Boulevard, Douglas Road, Grant Line Road, and the Jackson Highway) Kiefer Boulevard industrial operations, and aircraft overflights from nearby Mather Field. Stationary sources of noise in the vicinity of the project site include the Cordova Shooting Center, American River Aggregates and Asphalt Plant, Kiefer Road Landfill, the Sacramento Rendering Company, and Douglas Security Park.

Construction of the three alternatives would include site preparation, staging, excavation, paving, and building construction activities. Construction activities would be performed by workers utilizing hand tools and power tools. Increased noise would occur during daylight hours and would be predicted to not exceed 65 dBA at the closest existing noise-sensitive receptor. Therefore, there would not be any significant noise effects from all three alternatives.

Traffic volumes producing greater noise levels, would increase as a result of all three alternatives, with the Proposed Project Alternative likely producing the greatest traffic noise levels. Future residential uses within the project site adjacent to major roadways are sensitive receptors to the traffic noise generated by the project itself. To mitigate traffic noise impacts to less than 60 or 65 dBA, the standard required by the General Plan Noise Element, setbacks from the road centerline would be maintained along major roadways or noise barriers would be constructed along the major roadway and residential use interfaces. Noise levels for the project site will increase under all three alternatives, but those levels are not expected to produce a significant noise impact.

UTILITIES AND PUBLIC SERVICES

The utilities and public service analyses assesses whether existing services were adequate to address the needs of the planned developments, and would not negatively impact (stress) the delivery of those services to the public. The utilities and services addressed in this EIS are: electrical and gas energy, fire protection, law enforcement, schools, telephone and cable services, public transportation, library, solid waste, and parks and recreation. The analyses of these services, taken primarily from the Sunridge Specific Plan for the Proposed Project Alternative, indicated that there would be a potential for negative effects unless those effects were to be addressed through specific mitigation measures as outlined in the Sunridge Specific Plan. Although resulting in less development, the No Action and Reduced Footprint Alternatives would have similar effects to utilities and public service; therefore, the same mitigation measures would apply.

HAZARDOUS, TOXIC, AND RADIOACTIVE WASTE (HTRW)

The HTRW assessment evaluates the potential for chemical or radioactive wastes to be present in the project site that could affect construction workers and/or public health. The predominant historical uses of the Specific Plan area were fallow land, or dry-farmed and natural grass grazing land since at least the 1950s. These agricultural uses typically require little to no application of environmentally persistent pesticides. In 1991, surface soil samples from a site near an old olive orchard were analyzed. The soil samples detected only dichlorodiphenyldichloroethylene, polychlorinated biphenyls, and inorganic lead below the Department of Toxic Substance Control (DTSC) health risk guidelines. The investigation indicated that the olive orchard had been out of production for several years prior to environmental assessment and the use of potentially persistent pesticides had been uncommon. Therefore, the potential for residual agricultural chemical concentrations in existing surficial soils is low. This determination applies to all three alternatives.

Construction work involves the use of hazardous chemicals. Proper management and control of chemicals, through recommended mitigation measures, would be necessary to prevent adverse environmental effects. The same mitigation measures would apply to all three alternatives.

PUBLIC HEALTH AND SAFETY

The public health assessment looks at whether the alternative would create human health hazards through use of chemicals at the site, would expose humans to the potential for mosquito-borne diseases, would be located on an existing hazardous materials site, would create a safety hazard because the site was near an active airport, or would expose residents to the potential for wildland fires. Because wetlands would remain near populated areas, mosquito-borne diseases would pose a threat to human health. The property is not a listed hazardous waste site and use of chemicals during construction can be controlled in a manner protective of public health. The project properties are not within the landing pattern of Mather Field and development would reduce the potential for wildland fires.

ENVIRONMENTAL JUSTICE

The Environmental Justice evaluation assesses the potential for the project to disproportionately affect low income or minority populations. Because there are no low-income or minority populations living at the project sites and the nearest low-income neighborhood near Mather Field is being redeveloped, implementation of any of the three alternatives would not adversely affect low income or minority populations.

VISUAL RESOURCES

The visual resource analysis addresses the compatibility of the alternatives with existing visual resources. The analysis includes an assessment of alteration of a scenic vista, damage to scenic resources within a State Highway corridor, degradation of the area's scenic quality, temporary effects due to construction staging, introduction of new light and glare effects, and introduction of a new skyglow effect.

The existing condition foreground views of the project site are essentially rural and agricultural in nature. Grassland habitat and occasional vernal pool features are the dominant short-range visual resources. Mid-range views (200 to 500 feet) are similar, taking in occasional rural homesteads, power lines, evidence of agricultural operations, and primarily open vistas. Long-range views (horizon) reflect the varied nature of existing land uses in the area. Long-range vistas include vast open rural/agricultural views, power lines, industrial development, military/airport development, and evidence of aggregate operations, with the Sierra Nevada Mountains visible in the background on clear days.

Under all three alternatives, existing views would be changed from rural to residential and background views blocked by residences, other structures, fences, and landscaping. These effects are recognized in the Sunridge Specific Plan, which adopts standards and guidelines to address the urban features. The overall scenic change from rural to residential is a significant change that is addressed by and is consistent with the Sunridge Specific Plan. The effects to visual resources are similar for all three alternatives.

There is no Scenic Highway in the area of analyses, thus no impacts to highway corridor scenic resources. The construction staging visual impact would be temporary and mitigated through fencing. Glare and skyglow effects would need to be addressed through City of Rancho Cordova street lighting standards.

HISTORIC AND CULTURAL RESOURCES

The cultural resources assessment addresses the potential for the alternatives to damage recorded cultural resource sites, historic sites or buildings, or damaging as-yet-to be discovered prehistoric sites or Native American burials. Three of the parcels were subject to cultural resource inventory surveys and a fourth to a walk-over survey. These surveys concluded that there are no cultural resource features present. Therefore, the project would likely not affect cultural resources. Monitoring would be required during earthwork to prevent adverse effects to any undiscovered resources for all three alternatives.

GEOLOGY AND SOILS

The geology and soils assessment addresses whether the alternatives would result in the loss of surface soils during construction, the potential for damage to a structure from seismic activity and related activities, potential for damage to a structure resulting from construction on unstable soils, and loss of a valuable mineral resource. The assessment determined that there was potential for significant impacts to soils during construction of the projects and no potential for significant damage as a result of an earthquake. Expansive soils do exist that could potentially damage building foundations if proper engineering is not followed. There are no mineral resources that would be lost if the projects were to be constructed under any of the three alternatives.

CLIMATE CHANGE

The climate change assessment addresses whether greenhouse gas emissions resulting from development of the alternatives would lead to a significant contribution to climate change, and conformity with Federal, state, or regional policies.

ES.4 CUMULATIVE EFFECTS

BIOLOGICAL RESOURCES

The Biological Resources cumulative effects assessment summary focuses on vernal pool species and the planned mitigation.

Project implementation would result in the placement of fill material into waters of the U.S. including vernal pools, seasonal wetlands and seasonal wetland swales, seeps, drainage channels, ditches, and ponds. The potential for a resource or ecosystem to sustain its structure and function depends on its resistance to stress and its ability to recover. Determining the magnitude and significance of the environmental consequences of the Proposed Action Alternative in the context of, and when added to, other past, present, and reasonably foreseeable actions, is key to determining the impact on resources.

Prior studies have documented an 87 percent reduction in the original vernal pool habitat acreage in the Central Valley (Holland, 2009) and a 15 to 33 percent reduction of the original biodiversity of vernal pool crustaceans (King, 1998). These direct losses of habitat generally represent irreversible damage to vernal pools, and alterations as a result of urbanization often disrupt the physical processes conducive to functional vernal pool ecosystems. The more severe the alteration and destruction, the more difficult it is to recover such areas in the future due to disruption of soil formations, hydrology, seed banks, and other components of a functional vernal pool ecosystem.

Based on the data currently available, 377 acres of direct impact to waters of the U.S. have or will foreseeably occur within the Mather Core Area. This includes direct impacts to 215 acres of vernal pools, and 162 acres of other waters. Information regarding indirect impacts is very limited, but at least an additional 38 acres of vernal pools and 38 acres of other aquatic habitats have or will be indirectly impacted. Of the aquatic habitats contained within the Mather Core Area, approximately 33% of the vernal pools will be preserved on-site, and 36% of other waters will be preserved on-site.

For the 473 acres of waters of the U.S. that have or are proposed to be impacted, 371.1 acres have been or are proposed to be created or restored as compensatory mitigation, representing a ratio of about 0.78:1. Since most of the compensatory mitigation was not or will not be initiated until around the time the impacts occur, there will be temporal losses of functions and services as aquatic habitat restoration and creation takes time to develop and may not always be successful upon first attempt.

Further, only approximately 29 acres of the vernal pool compensatory mitigation has been or is proposed to be completed within the Mather Core Area, and approximately 27 acres of vernal pools that have been created in the Core Area are exhibiting limited success, according to recent monitoring reports.

SURFACE WATER AND GROUNDWATER SUPPLY

The City of Rancho of Cordova gave tentative map approval to the Sunridge Specific Plan based on supplies that the Sacramento County Water Agency (SCWA) is developing at the North Vineyard wellfield. SCWA is also developing a new surface water supply that will ultimately be used conjunctively to supply the Sunridge Properties and other developments in southeastern Sacramento County. The water demand would have cumulatively considerable effects to the regional water supply conditions and groundwater levels overall.

SURFACE WATER QUALITY

The Sunridge Properties, in combination with proposed and ongoing projects within the Mather Core Area, would cumulatively contribute to decreased water quality within Morrison and Laguna Creeks.

AIR QUALITY

The Sacramento region currently is not in compliance with air quality standards for ozone and particulate matter. Construction of the Sunridge Properties would have a cumulatively considerable impact on air quality.

TRAFFIC AND TRANSPORTATION

Traffic congestion in eastern Sacramento County is currently significant with low levels of service at several intersections. Although traffic improvements are planned by the County and the City of Rancho Cordova, the cumulative transportation analysis indicates that impacts from the Sunridge Properties will be cumulatively considerable.

NOISE

Construction and new traffic noise from the Sunridge Properties, combined with other projects in the area, will be cumulatively considerable.

PUBLIC HEALTH

The Sunridge Properties, combined with other local projects, would put more people in closer proximity to wetlands. This would increase the potential for exposure to mosquito-borne diseases.

VISUAL RESOURCES

The Sunridge Properties, combined with other local projects, would continue the visual character change of the landscape from rural to urban.

CLIMATE CHANGE

Construction of the Sunridge Properties would have a cumulatively considerable impact on greenhouse gas emissions.

ES.5 COMPLIANCE WITH LAWS, POLICIES, AND PLANS

Table ES-2 lists the laws, policies, and plans that the developers must address in constructing their projects. These apply to all alternatives and compliance would be required irrespective of a DA permit decision.

Table ES-2
Compliance with Applicable Laws, Policies, Plans, and Permit Requirements

Applicable Laws, Policies, Plans, and Permit Requirements	Method of Compliance
Federal	
National Environmental Policy Act	Addressed by this EIS
Endangered Species Act	Consultation with USFWS
Migratory Bird Treaty Act	Addressed in EIS
Fish and Wildlife Coordination Act	Consultation with USFWS, Coordination Act Report, if appropriate
Executive Order 11990 – Protection of Wetlands	Addressed in EIS, CWA 404 permits
Clean Water Act	DA permit under Section 404 of CWA; Water quality certification under Section 401 of CWA
Safe Drinking Water Act	Ongoing reporting to CDPH
Clean Air Act	Addressed in EIS
Executive Order 12898 – Environmental Justice	Addressed in EIS
National Historic Preservation Act	Addressed in EIS; Consultation with SHPO under Section 106 NHPA
Archeological and Historic Preservation Act	Addressed in EIS
National Natural Landmarks	Addressed in EIS
Farmland Protection Policy Act	Addressed in EIS
Toxic Substances Control Act	Addressed in EIS
Resource Conservation and Recovery Act	Addressed in EIS
Comprehensive Environmental Response, Compensation, and Liability Act	Addressed in EIS

Key: CDPH = California Department of Public Health, CWA = Clean Water Act, EIS = Environmental Impact Statement, NPDES = National Pollutant Discharge Elimination System, SHPO = State Historic Preservation Office, USFWS = United States Fish and Wildlife Service

Table ES-2 Compliance with Applicable Laws, Policies, Plans, and Permit Requirements (continued)	
Applicable Laws, Policies, Plans, and Permit Requirements	**Method of Compliance**
State	
California Endangered Species Act	Addressed in EIS
California Fish and Game Code	Addressed in EIS
Porter-Cologne Water Quality Control Act	Addressed in EIS, Waste Discharge Requirements
California Department of Public Health Requirements	Ongoing reporting to CDPH
Senate Bill 901/Sacramento County General Plan Policy CO-20	Addressed in EIS
California Government Code- Environmental Justice	Addressed in EIS
California Clean Air Act	Addressed in EIS
California Air Resources Board and Ambient Air Quality Standards	Addressed in EIS
California Public Resources Code- Historic and Cultural Resources	Addressed in EIS
Farmland Mapping and Monitoring Program	Addressed in EIS
Williamson Act	Addressed in EIS
Local	
Rancho Cordova General Plan	Addressed in EIS
Zone 40 Water Supply Master Plan	Addressed in EIS
Project Level Water Supply Master Plan	Subdivision Map Approval
Water Forum Plan	Addressed in EIS
Regional Housing Needs Plan	Addressed in EIS
City of Rancho Cordova Transit Master Plan	Addressed in EIS
Mather Comprehensive Land Use Plan and Mather Airport Policy Area	Addressed in EIS
Fire Codes and Guidelines	Building Permit
Sacramento County Land Grading and Erosion Control Ordinance	NPDES Permit Compliance
Key: CDPH = California Department of Public Health, CWA = Clean Water Act, EIS = Environmental Impact Statement, NPDES = National Pollutant Discharge Elimination System, SHPO = State Historic Preservation Office, USFWS = United States Fish and Wildlife Service	

1 INTRODUCTION AND STATEMENT OF PURPOSE AND NEED

This document is an Environmental Impact Statement (EIS) prepared under the National Environmental Policy Act (NEPA) to programmatically analyze and disclose the potential environmental effects of six residential development projects in the Sunridge Specific Plan Area located in the City of Rancho Cordova in southeastern Sacramento County (County), California. Collectively, the projects are referred to as the Sunridge Properties in this document.

Under Section 404 of the Clean Water Act (CWA), the U.S. Army Corps of Engineers (USACE) issues or denies Department of the Army (DA) permits for activities involving a discharge of dredged or fill material into waters of the United States, including wetlands. Permit applications for the six projects, each of which include such a discharge, were received by the USACE between 2005 and 2007. Although each of the six projects has independent utility and each could proceed absent the other projects, the USACE is approaching the projects and DA permit decisions programmatically as a "major Federal action" requiring the preparation of an EIS. The USACE is the lead Federal agency under NEPA for this action.

1.1 SETTING

The Sunridge Properties are located in the Sunridge Specific Plan Area, which lies east of Sunrise Boulevard and the Folsom South Canal, south of Douglas Road, west of Grant Line Road, and north of Kiefer Boulevard, in the City of Rancho Cordova, Sacramento County, California (see Figure 1-1). The Sunridge Specific Plan Area is a master-planned area comprised of a total of nine residential developments. Three of the nine properties, North Douglas, Montelena, and Sunridge Park, are in the process of being developed. The remaining six properties addressed in this EIS are Anatolia IV, Sunridge Village J, Grantline 208, Douglas Road 98, Douglas Road 103, and Arista del Sol. Figure 1-2 shows the boundaries of the project sites comprising the Sunridge Properties assessed in this EIS. Additional details regarding the six properties are presented in Section 1.4.

The Sunridge Properties are located in a region west of the Sierra Nevada foothills, at the eastern edge of the alluvial Sacramento Valley. The Sacramento Valley is a nearly flat alluvial plain that extends almost 180 miles from the Sacramento–San Joaquin Delta on the south to Redding on the north, and approximately 50 miles from the Sierra Nevada foothills on the east to the Coast Range on the west. The climate is characterized by warm, dry summers with an almost complete absence of rain, and mild winters with an average annual rainfall of 18 inches per year.

The Sunrise-Douglas Community Plan/Sunridge Specific Plan (County of Sacramento, 2001) (Sunridge Specific Plan) was approved by the County in 2002 and is part of a larger planning effort by the City of Rancho Cordova, called the Sunrise-Douglas Community Plan (Community Plan). The Plan Area, which encompasses approximately 2,600 acres, is located primarily south and east of the intersection of Douglas Road and Sunrise Boulevard.

The Area of Analysis for this EIS includes the Sunridge Specific Plan Area where the projects assessed in the EIS are located. Other proposed and permitted projects are addressed in the cumulative impacts analysis in this document. Chapter 4 of this EIS provides more details on the cumulative impact Area of Analysis.

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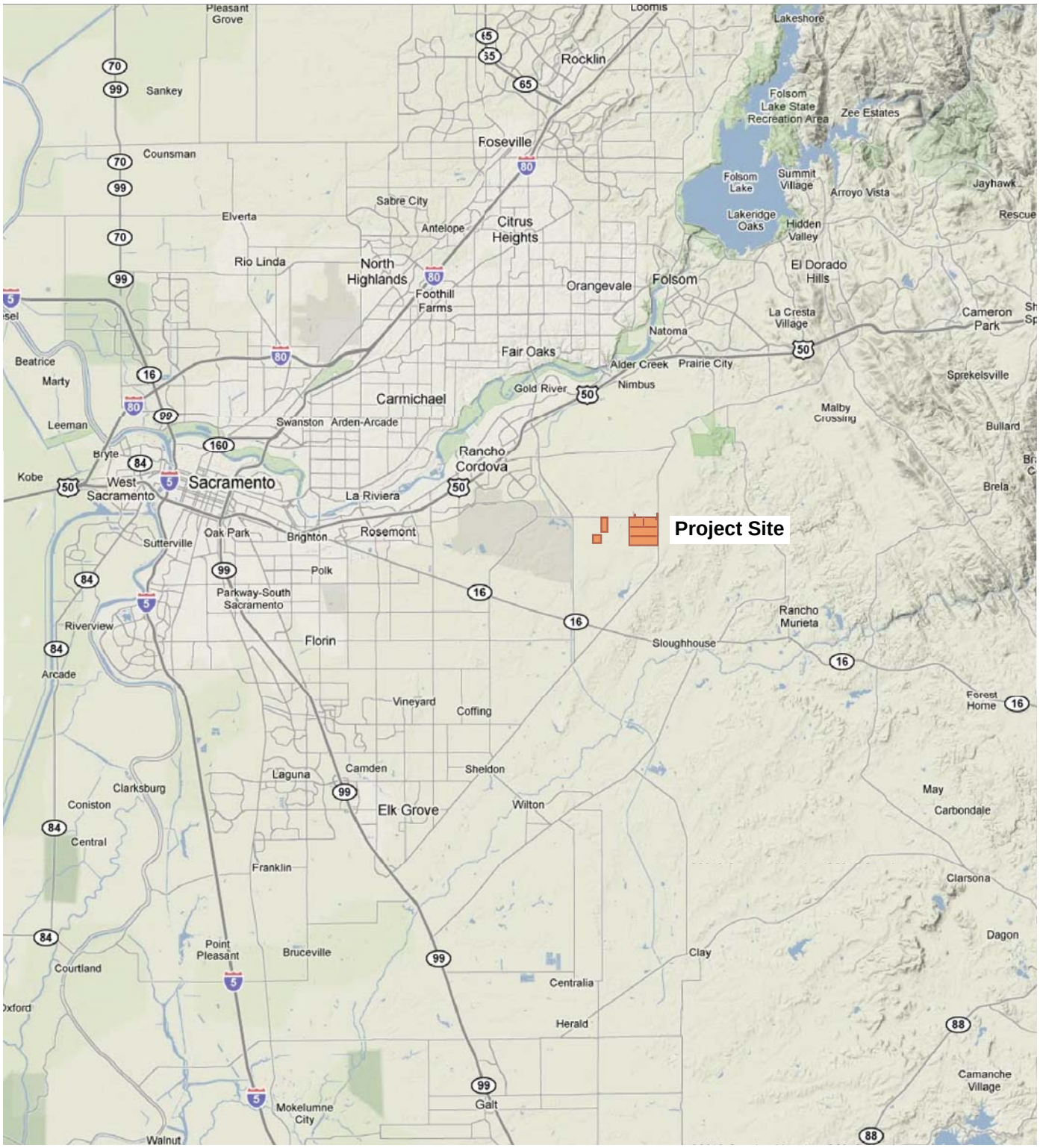

Source: Google Maps, terrain

0 2.5 5

Scale in Miles

NORTH

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Figure 1-1. Regional Location

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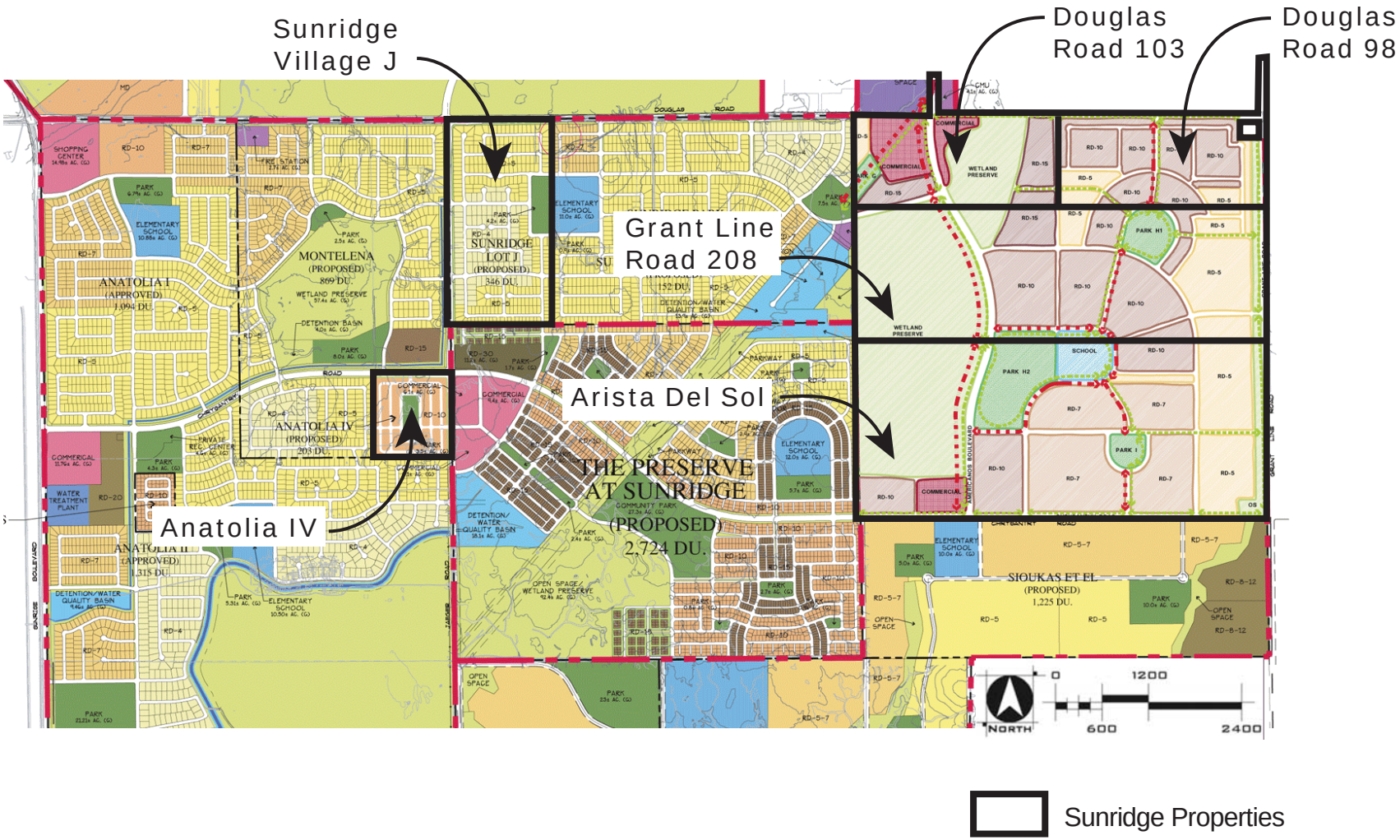

Figure 1-2. Project Site

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1.2 BACKGROUND

In May 2002, prior to its certification of the Sunrise-Douglas Community Plan Environmental Impact Report (EIR), the County initiated meetings with the U.S. Fish and Wildlife Service (USFWS), the USACE, and the U.S. Environmental Protection Agency (USEPA) (collectively the Federal Agencies), the California Department of Fish and Game, landowners and interested developers within the Community Plan to discuss vernal pools and permitting, including possible large scale preservation. On July 17, 2002, the County approved both the Community Plan and the Sunridge Specific Plan EIR. The conditions of approval for the Specific Plan require individual applicants to obtain any necessary USACE permit for fill of waters of the United States. On July 1, 2003, the Community Plan was incorporated into the City of Rancho Cordova, bringing the Community Plan area under the City's land use jurisdiction.

Between 2004 and 2007, developers for the nine projects in the Plan Area submitted applications for DA permits to the USACE to fill waters of the U.S., including wetlands. All nine projects largely followed the Conceptual-Level Strategy for Avoiding, Minimizing, and Preserving Aquatic Resource Habitat in the Sunrise-Douglas Community Plan Area (Conceptual Strategy), an advisory document developed by the USACE, USEPA and USFWS (Appendix A). Following the permit review process, which includes public participation, the USACE prepared several Environmental Assessments (EAs) under NEPA (Appendix B), and issued DA permits for eight of the nine projects (Appendix C). The ninth project, Arista del Sol, is still pending a permit decision.

The USFWS issued the *Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon* in 2005 to present the overall strategy to protect and enhance vernal pool species so that when successful the species can be delisted from endangered species status. The recovery plan addresses 33 plant and animal species, 20 of which are listed as threatened or endangered, that occur either exclusively or primarily within vernal pool, swale or ephemeral freshwater habitat. The primary threats to the species and their habitats are urban development with associated infrastructure, agricultural conversion, altered hydrology, nonnative invasive species, and grazing. The goals of the recovery plan are to further understand the requirements of the species, stabilize populations from further decline, institute measures to facilitate recovery and habitat protection, and ultimately delist the species. The Recovery Plan is not however an action document and is provided for guidance only; as such, it places no requirements on federal agencies, state or local governments or the public.

In June 2006, the California Native Plant Society, Defenders of Wildlife, and Butte Environmental Council (plaintiffs) filed an action in federal District Court challenging, among other things, the USACE's issuance of the Clean Water Act Section 404 permits for the nine projects in the Sunridge Specific Plan Area and the use of the Conceptual Strategy as an agency action (*California Native Plant Society, et al. v. U.S. Environmental Protection Agency, et al.*, Case No. 06-3604-PJH). In October 2006, plaintiffs sought a temporary restraining order to stop ongoing development activity on the project sites pending adjudication of the merits. The Court denied the temporary restraining order but heard plaintiffs' Motion for preliminary injunction in December 2006. Seven months later, in July 2007, the Court granted a preliminary injunction on a portion of plaintiffs' complaint, finding that plaintiffs had raised a serious question as to whether the USACE took the requisite "hard look" at cumulative impacts and alternatives in the EAs prepared for each of the DA permits and, accordingly, enjoined "any further construction, groundbreaking, earthmoving, or other on-the-ground activity that may affect vernal pool habitat or endangered or threatened species, taken in reliance on the Section 404(b) permits." In accordance with the Preliminary Injunction Order, the USACE sent formal letters to five permittees suspending the Clean Water Act Section 404 permits for the five projects subject to the Court's order. The sixth project, Arista del Sol, has not yet been permitted. The USACE agreed to provide plaintiffs with a copy of any DA permit issued for that project and to provide at least sixty (60) days advance notice of any construction,

groundbreaking, earthmoving, or other on-the-ground activity that may affect vernal pool habitat or endangered or threatened species at the Arista del Sol project site taken in reliance on a DA permit. The Court later modified the Preliminary Injunction Order to clarify that the injunction did not apply to the three permitted projects (North Douglas, Montelena, and Sunridge Park) that had already filled in waters of the U.S. in reliance on their permits.

At a subsequent Case Management Conference, Federal defendants requested a partial "remand" in order to supplement the decision documents to address the procedural NEPA concerns raised by the Court's Preliminary Injunction Order. The Court delayed adjudication of the merits, in part to allow Federal defendants time to undertake the "remand" and scheduled a date of March 28, 2008 for USACE to produce any supplemental environmental assessments and decision documents. The date was later postponed to May 12, 2008. On May 12, 2008, the USACE filed a *Notice of Filing Regarding Further Administrative Action*, in which it stated:

> "The Corps has reviewed and analyzed the environmental assessments in light of the standards and principles set forth in the Court's [Preliminary Injunction] Order as to the Plaintiffs' second cause of action. Based upon that further review, the Corps has elected not to issue revised environmental assessments. Instead, with respect to Plaintiffs' second cause of action, the Corps believes it is appropriate to proceed with preparation of an Environmental Impact Statement pursuant to NEPA and its implementing regulations."

In December 2008, the Court granted a stay in the litigation until November 2010 to allow USACE to complete preparation of an EIS. The Preliminary Injunction and USACE permit suspensions remain in effect.

Because three of the permittees, acting in reliance on the DA permit, filled waters of the U.S. as authorized under their permit, this EIS does not specifically analyze the individual effects of those projects. This EIS addresses the other six (collectively, Sunridge Properties) subject to the injunction. However, all projects in the Sunridge Specific Plan Area, as well as other past, present and reasonably foreseeable activities in the Area of Analysis applicable to the evaluated resources, including the three projects already developed, are part of the cumulative effects analysis found in Chapter 4 of this EIS.

1.3 CONCEPTUAL STRATEGY

From March to May 2004, representatives of the USACE, USEPA and USFWS met to formulate a conceptual approach to avoid, minimize, and preserve aquatic resource habitat in the Sunrise-Douglas Community Plan Area. This effort was intended to achieve reasonable protection and conservation of federally threatened and endangered species under the Endangered Species Act (ESA), while taking a regional approach to avoidance and minimization of impacts to the waters of the U.S., including wetlands, in accordance with the USEPA 404(b)(1) guidelines (Guidelines). The meetings resulted in an advisory document entitled "A Conceptual-Level Strategy for Avoiding, Minimizing, and Preserving Aquatic Resource Habitat in the Sunrise-Douglas Community Plan Area" (Appendix A).

To meet the goals of the ESA and CWA, the Federal Agencies arrived at the boundaries of the "Preserve Areas" based on best professional judgment and limited information regarding regional and site-specific species accounts and wetland delineations, while recognizing that development was planned in the area. Of particular focus was the preservation of vernal pool complexes and corridors for Morrison Creek and Laguna Creek. The mapped boundaries are the smallest that would be acceptable to the Federal Agencies and are based on ten principles and standards that would be followed by permittees as each element of the overall development proceeds.

The Conceptual Strategy was developed as an advisory document for permittees and planners during the design and planning of projects in the Sunrise-Douglas Community Plan Area. The Federal Agencies have used the strategy, along with other information, to aid in the review of proposed development and evaluate the probable individual and cumulative effects on aquatic resources and sensitive species. The Federal Agencies anticipated that permit decisions and biological opinions would be completed on a case-by-case basis, using site-specific and aquatic resource habitat information. Each proposed project would be evaluated on its own merits, within the larger context of the Sunrise-Douglas Community Plan Area. Depending on the particular hydrology, habitat features, and development plans for a particular parcel, it was anticipated the preserve boundaries may need to be adjusted to minimize direct and indirect impacts to aquatic resources. Appropriate compensatory mitigation would be developed following demonstrated avoidance and minimization of project impacts.

Although the Conceptual Strategy is not part of the Proposed Action being evaluated in this EIS, mitigation and minimization measures were incorporated into the design of the Sunridge Properties project to minimize and avoid potential significant effects to waters of the U.S. and endangered species. The preservation and creation/restoration ratios were developed in compliance with regulations, but also reflect the principles and strategies of the Conceptual Strategy. In this document, the Conceptual Strategy was used to inform the consideration of alternatives.

1.4 SUNRIDGE PROPERTIES

The Proposed Action addressed in this EIS reflects planning goals developed in the Master Plan for Sacramento County, Sunrise-Douglas Community Plan, Sunridge Specific Plan, and applications for DA permits provided to USACE. These documents responded to needs for additional housing, as indicated by market forces. Permittees purchased land in areas designated for development in the planning documents with the intent to develop the properties per planning document goals. Each permittee created a project description with design considerations that incorporated elements of the Conceptual Strategy and submitted applications for DA permits to the USACE to fill wetlands and other waters of the U.S.

With the Conceptual Strategy being one of many factors considered in its permit decision, the USACE issued permits for five of the six projects that are the subject of this EIS and were included in the modified Injunction Order. Projects receiving DA permits were: Anatolia IV, Sunridge Village J, Grantline 208, Douglas Road 98, and Douglas Road 103 (see Appendix C). The sixth project, Arista del Sol, had a pending permit application at the time of the lawsuit and no permit decision has been made by USACE. The acreage of waters of the U.S. that would be filled by each project was obtained from the DA permits for each project, except for Arista del Sol, where it was obtained from the permit application. The Biological Opinions prepared by the USFWS for each project are found in Appendix D.

The Proposed Action evaluated in this EIS combines the six development projects at a programmatic level to address a greater detailed cumulative impacts analysis. Collectively, they are referred to as the Sunridge Properties. The Sunridge Properties are summarized below, and are described further in Chapter 2 as part of the Proposed Action.

1.4.1 ANATOLIA IV

The Anatolia IV project received a DA permit (USACE ID: SPK-1994-00210) from USACE on October 2, 2006. It is located on a 24-acre site south of Douglas Road and adjacent to the west side of Jaeger Road. The project involves filling approximately 1.4 acres of waters of the U.S., including wetlands, to construct 134 houses, roadways, and other infrastructure (USFWS, 2004a). As compensation for the loss of waters, the permittee purchased 1.4 acres of vernal pool creation credits at the Laguna Terrace Mitigation Bank, and purchased 2.7 credits of preservation credits from the Anatolia

Preserve to satisfy USFWS requirements, and 2.7 credits at Gill Ranch to satisfy USACE requirements. No on-site preserve area is proposed. The permittee for this project is the Sunridge, LLC.

1.4.2 SUNRIDGE VILLAGE J

The Sunridge Village J project received a DA permit (USACE ID: SPK-2001-00230) from USACE on October 24, 2006. It is located on an 81.3-acre site in the southwest corner of the intersection formed by Douglas Road and Jaeger Road. The project involves filling approximately 3.0 acres of waters of the U.S., including wetlands, to construct 369 houses, roadways, and other infrastructure. No on-site preserve area is proposed. As compensation for the loss of waters, the permittee paid for the creation of 3.4 acres of vernal pools and the preservation of functioning wetland habitat. The Corps' required mitigation action has been completed. The USFWS Biological Opinion concluded that the project would adversely affect approximately 2.49 acres of vernal pool habitat, 1.88 acres directly and 0.36 acres indirectly (USFWS, 2004b). As mitigation the USFWS identified preserving 9.96 acres at Bryte Ranch Conservation Bank and creating 2.10 acres of vernal pool and seasonal wetland habitat. The permittee for this project is Cresleigh Homes.

1.4.3 GRANTLINE 208

The Grantline 208 project received a DA permit (USACE ID: SPK-1994-00365) on October 25, 2006. It is located on a 211-acre site in the southeast corner of the intersection formed by Douglas Road and Grant Line Road. As part of the project, approximately 5.7 acres of waters of the U.S., including wetlands, would be filled to construct 855 houses, roadways, and other infrastructure. The permittee proposes to preserve 68.1 acres of wetlands within its property. Compensatory mitigation identified in the DA permit is the restoration and/or creation of 6.2 acres of vernal pool habitat off-site. This action has not been taken, but it is expected to occur within the Gill Ranch Open Space Preserve, a 10,400-acre preserve in eastern Sacramento County. The USFWS Biological Opinion concluded that the project would adversely affect approximately 5.55 acres directly and 0.45 acres indirectly of vernal pool habitat (USFWS, 2006a). To mitigate for this loss, the BO states that 4.65 acres of vernal pool habitat will be preserved in the 68-acre preserve, and vernal pool habitat must be preserved off-site at either the Town Center Property or Anatolia Conservation Bank. Another 6.0 acres of vernal pool crustacean habitat must be restored within Sacramento County. The permittee for this project is Grantline Investors, LLC.

1.4.4 DOUGLAS ROAD 98

The Douglas Road 98 project received a DA permit (USACE ID: SPK-2002-00568) on May 31, 2006. It is located on a 105-acre site south of Douglas Road and adjacent to the west side of Grant Line Road. As part of the project, approximately 3.9 acres of waters of the U.S., including wetlands, would be filled to construct 693 houses, roadways, and other infrastructure. No on-site preserve area is proposed. To compensate for the loss of waters, 3.9 acres of wetland habitat would be constructed or created off-site. This action has not been taken; but is expected to occur within Gill Ranch Open Space Preserve, a 10,400-acre preserve in eastern Sacramento County. The USFWS Biological Opinion concluded that the project would adversely affect 3.70 acres of vernal pool habitat (USFWS, 2005a). To mitigate for this loss, the permittee is required to preserve either 7.8 acres of vernal pool crustacean habitat at the Anatolia preserve or 15.6 acres at Borden Ranch, and create 3.91 acres at the Silva Consolidated Conservation Bank. The permittee for this project is Woodside Homes.

1.4.5 DOUGLAS ROAD 103

The Douglas Road 103 project received a DA permit (USACE ID: SPK-1997-00006) on June 18, 2007. It is located on a 106-acre site adjacent to the south side of Douglas Road and west of Grant Line Road.

As part of the project, approximately 2.0 acres of waters of the U.S., including wetlands, would be filled to construct 301 houses, roadways, and other infrastructure. The permittee proposes to preserve 44 acres on-site. Compensatory mitigation identified in the DA permit but not yet implemented includes restoring or creating 7.3 acres of vernal pool habitat and preserving 5.9 acres of vernal pool habitat off-site. Mitigation is expected to occur within Gill Ranch Open Space Preserve, a 10,400-acre preserve in eastern Sacramento County. In the Biological Opinion, the USFWS concluded that the project would directly affect 1.98 and indirectly affect 2.91 acres of vernal pool crustacean habitat (USFWS, 2006b). To mitigate for this loss, the USFWS directed the permittee to restore 4.88 acres of vernal pool habitat. The permittee for this project is Douglas Grantline 103 Investors, LLC.

1.4.6 ARISTA DEL SOL

The Arista del Sol project (USACE ID: SPK-2004-00458) is located on a 215-acre site south of Douglas Road and adjacent to the west side of Grant Line Road. The applicant proposes to fill approximately 10.5 acres of waters of the U.S., including wetlands, to construct 906 houses, roadways, and other infrastructure. The permittee proposes to preserve 41 acres of wetlands on-site. According to the Biological Opinion issued for the project, approximately 12 acres of wetland habitat would be created and 20.2 acres of wetland habitat preservation would occur off-site. Mitigation is expected to occur within Gill Ranch Open Space Preserve, a 10,400-acre preserve in eastern Sacramento County. The applicant for this project is Pappas Investments (USFWS, 2006c).

1.5 NATIONAL ENVIRONMENTAL POLICY ACT AND ENVIRONMENTAL IMPACT STATEMENT PROCESS

This EIS has been prepared in accordance with the requirements of NEPA of 1969 (42 U.S. Code (USC) §4321, as amended) and the Council for Environmental Quality (CEQ) Regulations for Implementing the Procedural Provisions of NEPA (40 Code of Federal Regulations (CFR) Parts 1500-1508), dated July 1, 1988, and Appendix B to 33 CFR Part 325, NEPA Implementation Procedures for the USACE Regulatory Program. The NEPA requirements state that agencies of the Federal Government shall prepare a detailed statement in order to evaluate “major federal actions significantly affecting the quality of the human environment.” A "major federal action" may include projects financed, assisted, conducted, regulated, or approved by a Federal agency.

The EIS is a disclosure document intended to inform decision makers and the public of the potential significant environmental effects of the proposed action and alternatives to the proposed action. The EIS identifies potential means to reduce or avoid significant effects and analyzes feasible alternatives to the proposed action. The USACE will consider information in this EIS along with other information before making a final decision.

In addition, this EIS is a programmatic, rather than project-level, document. A programmatic document evaluates collectively a group of similar actions at a broad level. Each of the actions is intended to be evaluated at a project-specific level once the details of the project(s) are known. Agencies rely on programmatic analyses to focus the scope of alternatives, environmental effects analyses, and mitigation in subsequent tiered levels of documentation. In this case, project-specific analyses were previously completed between 2004 and 2007 for five of the six Sunridge Properties projects through project-specific EAs. As a programmatic document, this EIS is intended to validate the existing EAs for DA permits as tiered documents. The EAs will need to be supplemented to reflect this EIS. The sixth project, Arista del Sol, has a DA permit decision pending and will require a new NEPA document that tiers from this EIS. This programmatic analysis, therefore, applies to a broader geographic area and range of effects than was

addressed by any individual EA and expands on the previous analyses to evaluate cumulative effects more effectively.

One of the initial steps in the environmental review process is "scoping." Scoping is defined in the CEQ NEPA regulations as "an early and open process for determining the scope of issues to be addressed and for identifying significant issues related to a proposed action." Scoping is intended to be part of the process for development and preparation of a NEPA document and not a single event or meeting. This EIS has been developed to be consistent with the CEQ's NEPA scoping guidelines.

A Notice of Intent (NOI) to prepare an EIS for the Sunridge Properties was published in the Federal Register on July 20, 2009 (Vol. 74, No. 137, pg. 35166). On the same date, the USACE also issued a public notice regarding its intent to prepare an EIS. The NOI and public notice requested public scoping comments be submitted to the USACE by August 31, 2009. As part of its scoping for this document, the USACE held two public scoping meetings in Rancho Cordova on July 30, 2009. Appendix E of this Draft EIS contains public meeting materials and comments provided during the scoping period.

On July 2, 2010 the Draft EIS was been distributed for public review and comment in accordance with NEPA and its implementing regulations (40 CFR Parts 1500 – 1508). Copies of the EIS were submitted to the USEPA and appropriate information repositories. A Notice of Availability to review and comment on the Draft EIS was issued for a 45-day public review period on July 2, 2010. The comment period was later extended to August 18, 2010.

Public comments and responses to the Draft EIS were compiled and addressed in the Final EIS. A Notice of Availability of the Final EIS was published on October 15, 2010 in the Federal Register and local newspapers stipulating that it is available for a 30-day review, prior to the signing of a Record of Decision (ROD). The ROD is a written, public record explaining the reasons the USACE chose a particular course of action. The selected action and all mitigation measures will be identified in the ROD. No DA permit will be issued, reissued or revoked until the ROD is signed.

1.6 INTENDED USE OF THIS DOCUMENT

This document is designed to programmatically analyze the six projects comprising the Sunridge Properties and be responsive to the Court Preliminary Injunction Order. Specifically, the USACE intends to use this document to make one or more of the following decisions:

1. To determine whether one or more of the five DA permits issued for the Anatolia IV, Sunridge Village J, Grantline 208, Douglas Road 98 and Douglas Road 103 projects, should be reinstated after supplementing site-specific environmental assessments tiered from this EIS;

2. To modify the conditions of one or more of the five DA permits issued for the Anatolia IV, Sunridge Village J, Grantline 208, Douglas Road 98 and Douglas Road 103 projects, after supplementing site-specific environmental assessments tiered from this EIS;

3. To initiate revocation procedures for one or more of the DA permits issued for the Anatolia IV, Sunridge Village J, Grantline 208, Douglas Road 98 and Douglas Road 103 projects, not allowing for discharge of fill material into waters of the U.S.; and

4. To make a DA permit decision for the Arista del Sol project, after preparing a site-specific NEPA document tiered from this EIS.

1.7 AUTHORITY

Because the Proposed Action involves discharges of fill material to waters of the US, including wetlands, the USACE is required to review and make permit decisions on the actions under Section 404 of the CWA. Under its Regulatory Program, the USACE has the authority to review and issue DA permits (33 USC §1344). The USACE review process is described at 33 CFR Parts 320 through 332. In its regulatory capacity, the USACE is neither a proponent nor opponent of a project seeking permission.

Under NEPA, the USACE is the lead agency responsible for preparing the EIS for the six Sunridge Properties (the "major federal action"), including analyzing and disclosing the environmental effects of the Proposed Action. Both the USEPA and USFWS were invited to participate as cooperating agencies but declined.

1.8 PURPOSE AND NEED

1.8.1 NEED FOR THE PROPOSED ACTION

The County has been undergoing continuous growth, and increased housing needs have been identified as part of community planning efforts addressed in the Sacramento County General Plan, Sunrise-Douglas Community Plan, Sunridge Specific Plan, and the City of Rancho Cordova. The Proposed Action is necessary to meet a portion of the identified housing needs and to address housing shortages projected for the Sacramento region in the above-mentioned plans. In accordance with the planned growth for south Sacramento County, six developers purchased property within the Sunridge Specific Plan Area with the intent to develop the property for residential purposes to meet the identified housing needs.

1.8.2 PURPOSE OF THE PROPOSED ACTION

NEPA regulations (40 CFR §1502.13) require that an EIS contain a statement of purpose and need that "briefly specify the underlying purpose and need to which the agency is responding in proposing the alternatives, including the proposed action." The statement of purpose and need is important under NEPA in helping the USACE to develop and assess a reasonable range of alternatives to the Proposed Action in the EIS.

In addition to NEPA requirements related to the purpose and need, the USEPA Guidelines impose additional requirements on USACE's definition of purpose and need for the permit actions under the CWA. The USEPA Guidelines further sub-divide the project purpose into a basic project purpose, which is used to determine if an action is water dependent and must be located in or near an aquatic site, and the overall project purpose, which more narrowly defines the project purpose and considers the needs of the permit applicant.

The basic project purpose of the Proposed Action is to construct a residential development. Residential development is not a "water dependent" activity. As such, under the Guidelines, alternatives which do not involve special aquatic sites (wetlands) are presumed to exist unless clearly demonstrated otherwise.

The overall purpose of the Proposed Action is to construct a large residential development, including supporting infrastructure, in southeast Sacramento County.

The evaluation of a reasonable range of practicable alternatives to meet the overall project purposes is discussed in Chapter 2 of this EIS.

1.9 SIGNIFICANT ISSUES

Vernal pools, a type of wetland, are of particular concern to resource agencies and special interest groups due to the historical reduction of their extent. Vernal pools occupy land that first was conducive to agricultural and now community development. In California, the approximately 7 million acres of vernal pool landscapes that were estimated to be present in the 1800s have been reduced to less than 967,600 acres, an 87% decrease (Holland, 1998). Based on observed species distribution profiles and habitat loss estimates of 50% to 85%, modeling has predicted that 15% to 33% of the original biodiversity of Central Valley vernal pool crustaceans has been lost since the 1800s (King, 1998). Any development that impacts vernal pools continues the trend for habitat loss (see Figure 4-4). The Proposed Action includes compensatory mitigation for the loss of vernal pools, consisting of a combination of the creation /restoration of vernal pools and the preservation of existing vernal pools. The mitigation plans associated with each of the projects of the Proposed Action are reviewed by the USACE to ensure a high likelihood of success. However, a USFWS analysis of constructed vernal pools indicates that replacement habitat may not achieve the quality of the original vernal pool habitat (USFWS, 2005c).

1.10 THE PRIMARY STUDIES AND REPORTS USED TO DEVELOP THIS EIS

It should be noted that this list is not exhaustive of primary studies and reports used to develop this draft EIS. Other relevant documents were consulted as cited in the Draft EIS.

A Conceptual Level Strategy for Avoiding, Minimizing, & Preserving Aquatic Resource Habitat in the Sunrise-Douglas Community Area. June 2004 (Conceptual Strategy).

Clean Water Act §404(b)(1) Alternatives Supplemental Submittal Sunrise Douglas Arista del Sol Property April, 2006.

Department of the Army Permit Evaluation and Decision Document: Douglas Road 98, Application No. 200200568, Douglas Road 98 Village J.

Department of the Army Permit Evaluation and Decision Document: Centex and Pulte LLC, Application No. 200100448, Montelena Project.

Department of the Army Permit Evaluation and Decision Document: Cresleigh Homes Corporation, Application No. 200100230, Sunridge Village J.

Department of the Army Permit Evaluation and Decision Document: Jim Galovan, Grantline Douglas 103 Investors, LLC, Application No. 199700006, Douglas Road 103.

Department of the Army Permit Evaluation and Decision Document: Grantline Investors, LLC, Application No. 199400365, Grantline 208 Project.

Department of the Army Permit Evaluation and Decision Document: Application No. 199400218, North Douglas Project.

Department of the Army Permit Evaluation and Decision Document: Sunridge, L.L.C., Mark Enes, No. 199400210, Anatolia IV.

ECORP. 2004. Biological Resource Assessment for North Douglas. Report prepared for Lennar Communities, Inc.

ECORP. 2004. Biological Resource Assessment for Sunridge Ranch. Report prepared for Centex Homes.

Foothill Associates. 2004. Anatolia IV Biological Assessment. Report prepared for Pappas Investments..

Foothill Associates. 2005. Arista del Sol Biological Assessment. Report prepared for U.S. Fish and Wildlife Service on Behalf of Sunridge LLC.

Foothill Associates. 2005. Douglas Road 103 Biological Assessment. Report prepared for Woodside Homes.

Foothill Associates. 2004. Douglas Road 98 Biological Assessment. Report prepared for U.S. Fish and Wildlife Service on Behalf of Woodside Homes of California.

Foothill Associates. 2005. Grantline 208 Biological Assessment. Report prepared for River West Investments.

Foothill Associates. 2004. Sunridge Village J Biological Assessment. Report prepared for USFWS on behalf of Cresleigh Homes.

Holland 1998b. As referenced in Holland, Robert F. Ph.D. 2009. Great Valley Vernal Pool Distribution; Rephotorevised 2005. Prepared for Placer Land Trust, Auburn, CA. September 2009.

Holland, R.F. 2009. Great Valley Vernal Pool Distribution Rephoto, revised 2005. Prepared for Placer Land Trust, September.

King, Jamie L. 1998. Loss of Diversity as a Consequence of Habitat Destruction in California Vernal Pools. Ecology, Conservation, and Management of Vernal Pool Ecosystems-Proceedings from a 1996 Conference. California Native Plant Society, Sacramento, CA. 1998. pp 119-123.

Sunrise-Douglas Community Plan Environmental Impact Report, 2001.

Sunrise-Douglas Community Plan/Sun Ridge Specific Plan Project Environmental Impact Report, County of Sacramento, March 1999.

USFWS Section 7 Consultation documents on the Proposed Douglas Road 103 Project. March, 2006.

USFWS Section 7 Consultation documents for the Proposed Grantline 208 Project. May, 2006.

USFWS Section 7 Consultation documents on the Proposed Arista del Sol Project. June, 2006.

USFWS Section 7 Consultation documents for the Proposed Sunridge Park Project. January, 2005a.

USFWS Section 7 Consultation documents for the Proposed Sunridge Village J Project. December, 2004.

USFWS Formal Endangered Species Consultation documents on the Proposed Douglas Road 98 Project. January, 2005b.

USFWS Region 1. Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon. Portland, Oregon. 2005c.

USFWS Formal Section 7 Endangered Species Consultation documents on the North Douglas Project. December, 2004.

USFWS Formal Endangered Species Consultation documents on the Proposed Anatolia IV Project. December, 2004.

1.11 REPORT ORGANIZATION

This EIS has been organized to present information regarding the Proposed Action and alternatives, and the effects associated with implementing the alternatives. The EIS follows the recommended EIS format and conforms to other NEPA requirements for evaluating potential effects on the environment.

This EIS is organized in the following manner:

- Volume 1, "Final Environmental Impact Statement," reflecting revisions made in response to comments received on the Draft EIS.
- Volume 2, "Final Environmental Impact Statement, Appendices A-G," contains Appendices A-G of the FEIS reflecting changes made in response to comments received on the Draft EIS. Appendix G itself is the Comments and Responses.

Volume 1 is further organized in the following manner:

- The cover sheet provides lead agency and contact information, an abstract of the EIS, and comment submission information.
- The executive summary presents an overview of the project and alternatives, environmental impacts, mitigation measures, and conclusions about the net effects.
- Chapter 1 introduces the project and provides the background for the preparation of this EIS.
- Chapter 2 describes the proposed action and alternatives.
- Chapter 3 describes the existing environmental conditions for the Area of Analysis along with the environmental effects of implementation of the proposed project and alternatives to the proposed action.
- Chapter 4 presents the cumulative effects analysis and provides disclosures required by NEPA and the CEQ.
- Chapter 5 provides the discussion on how implementation of the proposed project or alternatives would address compliance with applicable laws and regulations.
- Chapter 6 provides the public participation aspects of this EIS.
- Chapter 7 provides the list of preparers of this EIS.

2 PROPOSED ACTION AND ALTERNATIVES

Chapter 2 describes the process used for developing alternatives to the Proposed Action, the alternatives considered, and the screening criteria and principles used to retain and eliminate alternatives. The alternatives that were considered during the preparation of this environmental impact statement (EIS) are described, including the rationale for why certain alternatives were not carried forward in the evaluation. Three alternatives were selected to be carried forward for analysis in the EIS.

2.1 NEPA REQUIREMENTS

The Council on Environmental Quality (CEQ) Regulations require that the evaluation of alternatives in an EIS include (40 Code of Federal Regulations (CFR) §1502.14):

- An objective evaluation of reasonable alternatives;
- Identification of the alternatives considered but eliminated from detailed study, along with a brief discussion of the reasons that these alternatives were eliminated;
- Information that would allow reviewers to evaluate the comparative merits of the proposed action and the alternatives considered in detail;
- Consideration of a no action alternative;
- Identification of the agency's preferred alternative, if any; and
- Appropriate mitigation measures not already included in the proposed action or alternatives.

Additionally, under its National Environmental Policy Act (NEPA) implementing regulations, the USACE is required to identify and consider a "no permit" alternative. The no permit alternative is one that would not require a DA permit to construct the project (33 CFR Part 325, Appendix B). The no permit alternative in this EIS serves as the No Action Alternative.

Alternatives to the Proposed Action that were considered and evaluated in this EIS are described below. NEPA requires the analysis of alternatives to occur at a substantially similar level of detail as that devoted to the proposed action. The NEPA regulations require agencies to rigorously explore and objectively evaluate all reasonable alternatives and to devote substantial treatment to each alternative considered, including the proposed action.

The CEQ provides guidance on the range of alternatives to be analyzed (see CEQ's Forty Most Asked Questions Concerning CEQ's National Environmental Policy Act, Nos. 1a, 1b, and 2a). The range of alternatives must include all reasonable alternatives. Reasonable alternatives include "those that are practical or feasible from the technical and economic standpoint" and that are based on "common sense, rather than simply desirable from the standpoint of the applicant." Where there are a large number of possible alternatives, only a reasonable number that cover the spectrum of alternatives must be analyzed and compared in the EIS.

2.2 USEPA SECTION 404 (b) (1) GUIDELINES

The United States Environmental Protection Agency (USEPA) Section 404(b)(1) Guidelines for Specification of Disposal Sites for Dredged or Fill Material (USEPA Guidelines) enumerate the substantive criteria to be used by the U.S Army Corps of Engineers (USACE) in evaluating discharges of fill material into waters of the U.S. under Section 404 of the Federal Clean Water Act (CWA). For USACE actions subject to NEPA, "the analysis of alternatives required for NEPA environmental documents will in most cases provide the information for the evaluation of alternatives" under the USEPA Guidelines (40 CFR §230.10(a)(4)). The USEPA Guidelines were developed as the substantive environmental standards by which all applications for DA permits under Section 404 CWA are evaluated. The USEPA Guidelines specifically require that "no discharge of dredged or fill material shall be permitted if there is a practicable alternative to the proposed discharge which would have less adverse impact on the aquatic ecosystem, so long as the alternative does not have other significant adverse environmental consequences" (40 CFR §230.10(a)).

The key provisions of the USEPA Guidelines are listed below:

- The discharge must be the least environmentally damaging practicable alternative (LEDPA).
- For non-water dependent projects, practicable alternatives that do not involve special aquatic sites are presumed to be available to the applicant unless clearly demonstrated otherwise;
- All practicable alternatives to the proposed discharge that do not involve a discharge into a special aquatic site are presumed to have less adverse impacts on the aquatic ecosystem, unless clearly demonstrated otherwise;
- The discharge must not violate any water quality standard or toxic effluent standard, or jeopardize the continued existence of a threatened or endangered species;
- The discharge must not result in a significant degradation of the waters of the U.S.; and
- Unavoidable impacts on the aquatic ecosystem must be mitigated.

In contrast to the reasonable range of alternatives under NEPA, the USEPA Guidelines define practicable alternatives as "available and capable of being done after taking into consideration cost, existing technology, and logistics in light of the overall project purposes" (40 CFR §231.10 (a)(2)). Practicable alternatives under the USEPA Guidelines are considered a subset of the more broadly defined reasonable alternatives under NEPA. The range of alternatives carried forward for detailed analysis in the EIS are those that meet the need and overall project purpose, and are considered reasonable under NEPA and practicable under the USEPA Guidelines. The practicability analysis and determination will be made in the record of Decision.

2.3 DEVELOPMENT AND SCREENING OF ALTERNATIVES

The Proposed Action is to develop six properties in the Sunridge Specific Plan Area ("Sunridge Properties"). As indicated in Chapter 1, the overall purpose of the Proposed Action is to construct a large residential development, including supporting infrastructure, in southeast Sacramento County. Alternatives to the Proposed Action were developed based on the following considerations:

- NEPA alternatives development and principles [40 CFR §1502.14; CEQ Forty Questions];

- USEPA alternatives development and screening criteria under the USEPA Guidelines;
- Need for and purpose of the Proposed Action;
- Existing NEPA documents prepared for projects in the Sunrise-Douglas Community Plan Area;
- Comments submitted during the public scoping process;
- Review of potential off-site alternatives; and
- The Conceptual-Level Strategy for Avoiding, Minimizing, and Preserving Aquatic Resource Habitat in the Sunrise-Douglas Community Plan Area (Conceptual Strategy) developed by the USACE, USFWS, and USEPA.

An initial set of potential alternatives was evaluated to determine whether they were reasonable. The criteria and principles used to evaluate and screen alternatives to the Proposed Action include:

- USACE regulatory authority under the CWA;
- Availability of land;
- Ability to meet the overall purpose;
- Site topography and other physical barriers to development;
- Potential impacts to waters of the U.S., including wetlands;
- Potential effects on special status species; and
- Aquatic habitat and corridor continuity

2.4 ALTERNATIVES CONSIDERED DURING PREPARATION OF THIS EIS

This section describes alternatives that were developed for the Sunridge Properties during preparation of the EIS using the principles and criteria defined in Section 2.3, and which are eliminated or carried forward for evaluation.

2.4.1 ALTERNATIVES CONSIDERED BUT NOT CARRIED FORWARD

This section describes alternatives that were considered during development of the EIS that were not carried forward for analysis. Alternatives were not carried forward if they were deemed not reasonable, or had greater adverse environmental effects. The rationale follows the description of each alternative evaluated.

2.4.1.1 CALIFORNIA NATIVE PLANT SOCIETY 500-FOOT SETBACK ALTERNATIVE

On August 31, 2009, the California Native Plant Society (CNPS) submitted a comment letter requesting "that an alternative that is even more protective of resources than the [Proposed Project Alternative] be analyzed in the EIS for the [Sunridge Properties]. Specifically, we request that the tributaries to Morrison and Laguna Creeks be fully buffered by at least 500 feet on both [sides]. Furthermore, the edges of the

proposed onsite avoidance area must be smoothed in order to minimize edge effects." The intent of this alternative is to protect the headwaters of Laguna Creek, as well as a portion of Morrison Creek, and would include a 500-foot setback on each side of Morrison and Laguna Creeks, as well as a tributary to Laguna Creek. The 500-foot setback lies on the Douglas 98, Douglas 103, Grantline 208 and Arista del Sol project sites (Figure 2-1).

The CNPS alternative would likely result in the fill of approximately 23 acres of vernal pools and approximately 16,900 linear feet of stream. Furthermore, the 500-foot setback from Morrison and Laguna Creeks, while protective of the headwaters and vernal pools immediately adjacent to creeks, also does not encompass a large number of high-quality vernal pools in other locations within the project sites. Specifically, the CNPS alternative would result in the loss of a large assemblage of vernal pools in the western portions of the Grantline 208 and Arista del Sol project sites. These wetlands are identified for preservation in the Conceptual Strategy, as well as the Proposed Project Alternative.

The CNPS alternative includes preserving a large upland area on the Douglas 98 site with two very small ephemeral tributaries and only a few wetlands. The relative hydrological and biological contribution of these aquatic resources to the Morrison Creek watershed appears to be extremely minor. The proposed preserve extends into Douglas 103, which supports the primary headwaters for Morrison Creek and a substantially greater density of vernal pools.

An alternative referred to as the Reduced Footprint Alternative was developed in part to address CNPS concerns. This alternative does not strictly focus on the Laguna and Morrison Creek headwater corridors, but is balanced with greater vernal pool preservation. The Reduced Footprint Alternative, described in Section 2.4.2.3, includes a larger preserve area and incorporates a setback that is hydrologically sensitive to the primary tributaries of Morrison and Laguna Creeks. In particular, the Laguna Creek Preserve under the Reduced Footprint Alternative is very similar to the alternative put forth by CNPS. The Reduced Footprint Alternative also recognizes the very limited value to the watershed provided by the small tributaries and low number of vernal pools on the Douglas 98 site.

Under the CNPS alternative, the acreage of vernal pools and streams impacted would be greater than that filled under the Reduced Footprint Alternative. The CNPS alternative would also result in greater direct impacts to vernal pools than the Proposed Project Alternative.

ELIMINATION RATIONALE SUMMARY

- CNPS concerns incorporated into the Reduced Footprint Alternative which is carried forward in the analysis;
- Entails filling a large number of high quality vernal pools in the western portion of the Grantline 208 and Arista del Sol sites; and
- Greater quantity of filled acreage of aquatic resources than the Reduced Footprint Alternative, and greater impact to vernal pools than the Proposed Project Alternative.

Figure 2-1 California Native Plant Society 500-Foot Setback Alternative

WETLAND FEATURES

- Seasonal Wetland*/Drainage Swale
- Vernal Pool
- Seasonal Marsh
- Seep
- Ephemeral Drainage/Intermittent Drainage
- Pond*
- Ditch*

OTHER FEATURES

- 500 ft Setback on Creeks Preserve
- Area to be Developed

Source:
Wetland data: Foothill Associates
Map: Arista del Sol Biological Assessment
Appendix B, Figure 5

Data from Road Improvement projects not included.

N

0 500 1,000 2,000 Feet

FILE: \\Bcsac-nas01\GIS\USACE\USACE_Sunridge_EIS\ARCMAPS\WORKING\Figure 2-1 - CA Native Plant Society Suggested 500 ft Buffer Alternative.mxd

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2.4.1.2 NO DEVELOPMENT AT ARISTA DEL SOL ALTERNATIVE

This alternative involves development of the five permitted projects but no development of the proposed Arista del Sol project (Figure 2-2). This alternative was initially considered because Arista del Sol is the only project for which a decision on a Department of the Army (DA) permit is still pending.

Although the six Sunridge Properties projects are considered collectively in this EIS, each has independent utility and could be constructed and implemented absent the other projects. This alternative was not carried forward in this EIS because it would not meet the "reasonable" test under NEPA. No development at this site would also fail to meet the development objectives of the applicant for the Arista del Sol project.

This alternative is primarily focused on reducing the overall acreage of vernal pool and stream impacts through the convenience of eliminating the one project for which a DA permit decision has not been made. Not developing Arista del Sol would avoid reducing vernal pool acreage by 13.9 acres. However, it is not sensitive to natural resources in the area since it does not seek to specifically preserve the continuity of vernal pool assemblages, maintain headwater streams or provide corridors for wildlife movement. For instance, under this alternative, a portion of the Laguna Creek headwaters would not be filled; however, upstream headwaters would be filled in.

With no development on the Arista del Sol site, cattle grazing would likely continue and result in on-going grazing-related direct and indirect environmental effects, such as, fecal contamination in the vernal pools, and loss of continuity of wetlands, without any preservation and management of the aquatic resources that would be required as a result of a DA permit. Previously approved developments to the north (Grantline 208, Douglas 98 and Douglas Road 108) and west (Anatolia IV and Sunridge Village J) would likely result in indirect impacts to aquatic resources on the Arista del Sol site through edge effects and hydrologic modification.

Development of the Arista del Sol site under a no permit scenario is included in the No Action Alternative discussed later in this EIS. The no action/no permit alternative will also be considered in the project-specific alternatives analysis prepared during the DA permit review process for the Arista del Sol project site.

ELIMINATION RATIONALE SUMMARY

- The applicant's objectives for the Arista del Sol project would not be met;
- The No Action Alternative largely captures this analysis.
- Without preservation and management of the site, indirect effects on vernal pools, streams and other waters of the U.S. from continued cattle grazing at the site and adjacent land development could be substantial.

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FILE: \\Bcsac-nas01\GIS\USACE\USACE_Sunridge_EIS\ARCMAPS\WORKING\Figure 2-2 - No Development in Arista Del Sol Alternative.mxd

Figure 2-2 No Development at Arista del Sol Alternative

WETLAND FEATURES

- Seasonal Wetland*/Drainage Swale
- Vernal Pool
- Seasonal Marsh
- Seep
- Ephemeral Drainage/Intermittent Drainage
- Pond*
- Ditch*

OTHER FEATURES

- Arista del Sol Preserve
- Area to be Developed

Data from Road Improvement projects not included.

Source:
Wetland data: Foothill Associates
Map: Arista del Sol Biological Assessment
Appendix B, Figure 5

N

0 500 1,000 2,000 Feet

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2.4.1.3 NO DEVELOPMENT IN "THE EASTERN STRIP" ALTERNATIVE

Expanding upon the preserve areas under the Proposed Project Alternative, this alternative adds a rectangular preserve area along the eastern side of the Douglas 98, Grantline 208, and Arista del Sol sites, and immediately adjacent to Grant Line Road (Figure 2-3). This additional preservation area was considered given the quantity and density of vernal pools and the Laguna Creek headwaters found here (approximately 15 acres). Development in the remaining portions of the six parcels outside the preserve areas would still occur.

Because of the location and rectangular nature of the eastern strip preserve area, this alternative inadequately accounts for logistical and development feasibility factors. For instance, and most importantly, the eastern strip would negate any access to the three development sites from Grant Line Road, including access needed for emergency services. Furthermore, the alternative is not sensitive to the landscape or hydrology in the area. Development would essentially cut through some of the largest vernal pools along upper Laguna Creek, causing indirect effects to what remains. In addition, aquatic resources that form the headwaters of Morrison Creek on the Douglas 98 site would be preserved but would become isolated with no hydrologic connection to downstream reaches.

In contrast, the Reduced Footprint Alternative, which is being carried forward in the EIS, is intended to address the intent of the Eastern Strip alternative to protect important aquatic resources along Grant Line Road with the removal of logistical constraints to site development. The Reduced Footprint Alternative is sensitive to the landscape and the location of vernal pools and streams while allowing site access from Grant Line Road. The Eastern Strip Alternative is also less protective of wetlands and headwaters than the Reduced Footprint Alternative because the Reduced Footprint Alternative expands the Proposed Project Alternative preserve area to the south to protect additional headwaters of Laguna Creek. In contrast, the Eastern Strip Alternative would directly impact approximately 1,000 more additional linear feet of streams than the Reduced Footprint Alternative. Consequently, the Eastern Strip Alternative was not carried forward because of logistical considerations because it is less protective of the aquatic environment than the Reduced Footprint Alternative.

ELIMINATION RATIONALE SUMMARY

- Rectilinear nature of proposed Eastern Strip preserve does not adequately consider site topography and other logistical considerations;
- Rectilinear nature of proposed Eastern Strip preserve is not sensitive to the landscape and hydrology of the area;
- More direct impacts to key streams than Reduced Footprint Alternative;
- Reduced preservation of Laguna Creek headwaters compared to Reduced Footprint Alternative; and
- Many of the concerns that drove the development of this alternative are addressed by the Reduced Footprint Alternative, which is carried forward in the EIS.

2.4.1.4 OFF-SITE ALTERNATIVES

As required by 40 CFR Part 230.10(a)(3), practicable alternatives that do not involve special aquatic sites are presumed to be available to the applicant unless clearly demonstrated otherwise. Practicable

alternatives that would occur at an area not presently owned by the applicant, which could be reasonably obtained, utilized, expanded or managed to fulfill the basic project purpose, may be considered.

In consideration of the overall project purpose, the analysis of off-site alternatives was limited to those parcels within southeastern Sacramento County that could practicably accommodate a large residential development. For the purpose of this analysis, the boundaries of southeastern Sacramento County were considered to be Highway 50 to the north, the Sacramento County boundary to the east and south, and Highway 99 to the west. With the footprint of the Proposed Project Alternative at 588.5 acres, potentially available parcels of approximately 450 to 750 acres were considered as they would accommodate a similar level of development. To be considered potentially available, parcels needed to be within Sacramento County's Urban Services Boundary (USB) and Urban Policy Area (UPA), and not currently proposed for development by others, under construction, substantially built-out, or restricted by conservation easements or similar legal instruments.

USACE evaluated the off-site alternatives presented in the Sares Regis Group Report (1994) for the Sunrise-Douglas project, which was submitted to USACE for five of the Sunridge Properties proponents as information regarding regional off-site alternatives. Most of the parcels evaluated in the Sares Regis Group Report were determined to be unavailable. Others were outside of the USB or southeastern Sacramento County. In fact, only alternative 33 of the report, the Kendall property, is within the USB and UPA; has not been developed, proposed for development, or set aside as a nature preserve; and is within the size and geographic range established above.

The approximately 667-acre Kendall property is located east of Grantline Road at the terminus of Douglas Road (see Figure 2-4). Based on remote sensing, approximately 36 acres of vernal pools and 4 acres of intermittent or ephemeral streams exist on the parcel. Therefore, full build-out of the parcel would result in greater direct impacts to vernal pools and other aquatic habitats than would the Proposed Project Alternative, which would result in the loss of 19.19 acres of vernal pools and 10.61 acres of other waters. A partial avoidance development, which includes a 179-acre preserve around the main stream and vernal pool complex, was also considered for the Kendall site. The resulting 488-acre development area would directly impact approximately 21 acres of vernal pools and 0.5 acres of intermittent or ephemeral streams. Direct effects of the partial avoidance development for the Kendall site would be less than the Proposed Project Alternative and similar to the estimated 20.3 acres of impact expected to result from the Reduced Footprint Alternative. USACE inquired into the availability of this property for development and was informed from several sources that the owner has been approached in the past by interests seeking to purchase his land for development or mitigation purposes and is unwilling to sell. Therefore, this alternative was eliminated from further consideration as it is currently unavailable.

Although not considered in the Sares Regis Group Report, the approximately 467-acre Tracy property initially appeared available and is within the size and geographic range of this analysis. The Tracy property is connected to the Kendall property to the south and an aggregate mining operation to the north (see Figure 2-4). Based on aerial photograph interpretation, approximately 30 acres of vernal pool habitat exist on the site. Full development of this parcel would be necessary to support a development consistent with the overall project purpose. Furthermore, USACE was informed the owner of this site is an unwilling seller. This alternative was eliminated from further consideration as it would result in a higher acreage of impact to vernal pool habitats than the Proposed Project Alternative and it is unavailable.

As such, off-site alternatives were eliminated from further consideration in this EIS, as they were determined to be unavailable or would result in an equal or greater amount of impacts to the aquatic system than the Proposed Project Alternative.

Figure 2-3 No Development in Eastern Strip Alternative

WETLAND FEATURES

- Seasonal Wetland*/Drainage Swale
- Vernal Pool
- Seasonal Marsh
- Seep
- Ephemeral Drainage/Intermittent Drainage
- Pond*
- Ditch*

OTHER FEATURES

- Preserve Area
- Eastern Strip Preserve
- Area to be Developed

Source:
Wetland data: Foothill Associates
Map: Arista del Sol Biological Assessment
Appendix B, Figure 5

Data from Road Improvement projects not included.

N

0 500 1,000 2,000 Feet

FILE: \\Bcsac-nas01\GIS\USACE\USACE_Sunridge_EIS\ARCMAPS\WORKING\Figure 2-3 - No Development in Eastern Strip Alternative.mxd

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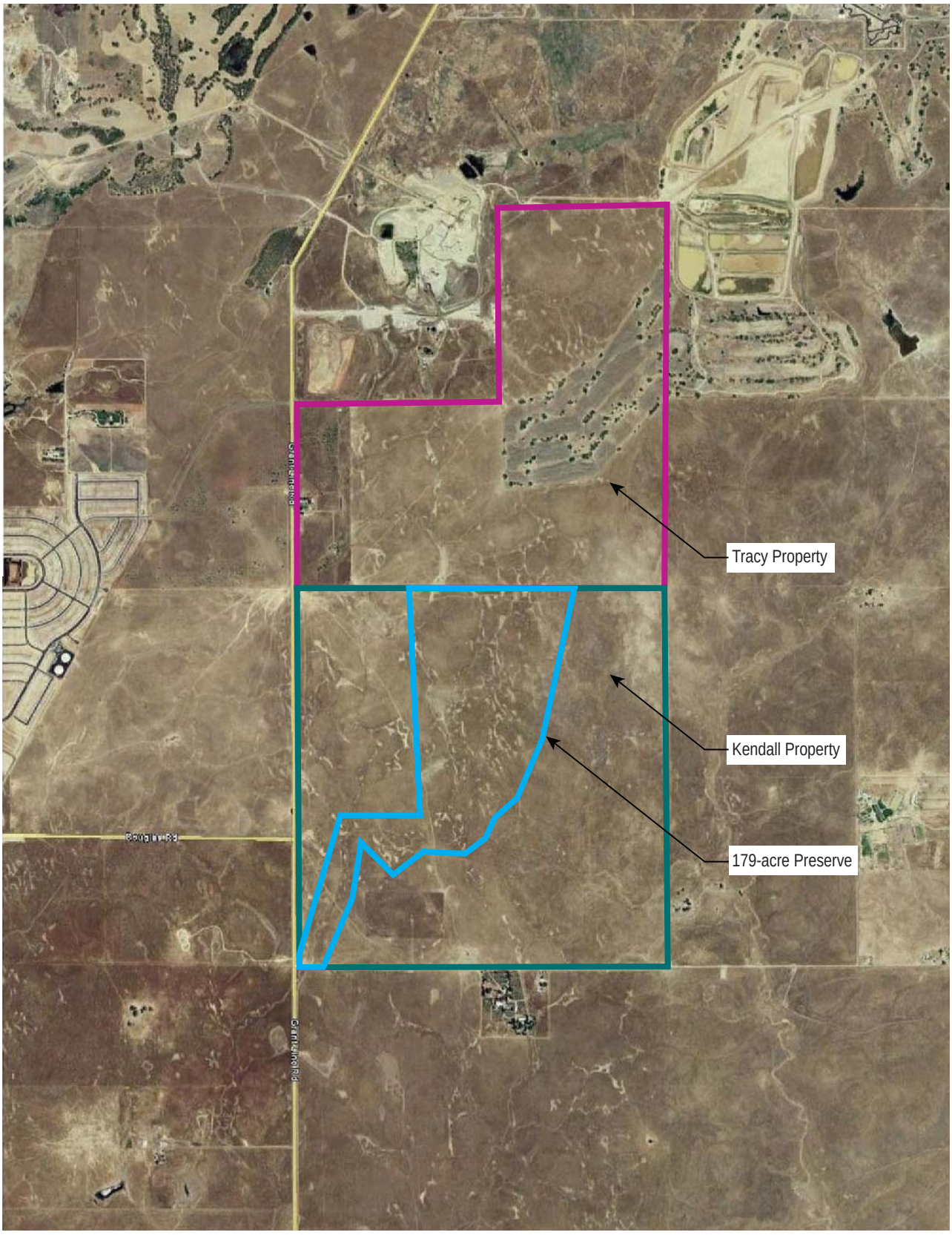

Figure 2-4. Off-Site Alternative Properties

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For the five projects which received DA permits, project-level off-site alternatives were evaluated by the USACE before the DA permits were issued. For the Anatolia IV, Douglas Road 98, Douglas Road 103, and Grantline 208 projects, off-site alternatives, including a number within the Sunridge Specific Plan Area, were analyzed. After considering eight potential alternative sites, USACE determined that there were no practicable alternative locations for these projects because the considered properties were either unavailable for purchase, of insufficient size to meet the applicants' needs and/or would have equal or greater amounts of impact to aquatic ecosystems compared to the proposed project sites. For the Sunridge Village J project, fifteen alternative sites were analyzed during the DA permit process. USACE found that all were not practicable or would result in an equal or greater amount of impact to the aquatic environment than the proposed development. Because a permit decision is pending, a project-level alternatives analysis under NEPA and the USEPA Guidelines still needs to be completed for the Arista del Sol project. The analysis will include an evaluation of off-site alternatives.

2.4.2 ALTERNATIVES CONSIDERED AND CARRIED FORWARD

This section describes alternatives that were considered during preparation of this EIS and were carried forward in the analysis. Acreage estimates referenced in the tables within this section were obtained from several sources and methods. Total project size, on-site preserve area, and developed area acreages were estimated using Geographical Information System (GIS) files, and the acreages of individual project features (parks, roads, etc.) were obtained from decision documents for the five previously permitted projects and the Arista del Sol application for a DA permit. These estimated acreage totals may not always coincide. However, any discrepancies between total acreages are typically small and do not substantively alter the analysis presented in this EIS.

2.4.2.1 NO ACTION ALTERNATIVE

The No Action Alternative would avoid all direct impacts to waters of the U.S., including wetlands, on the six properties (Figure 2-5). Under this alternative, the existing DA permits would be revoked and the permit application for the Arista del Sol project would be denied. Although DA permitting requirements are only triggered by placement of dredged or fill material into waters of the U.S., it was assumed for evaluation purposes that no development activities would occur within a 25-foot setback around waters of the U.S., including wetlands, under the No Action Alternative. (The USFWS generally assumes development with 25 feet of wetlands would result in direct impacts; a 25-foot setback provides a factor of safety.) Areas outside of waters of the U.S., referred to as "uplands," beyond the 25-foot setback would be developed by the project proponents. Since land development activities that occur outside waters of the U.S. are not regulated under Section 404 of the CWA, the USACE has no authority over development activities occurring entirely in the uplands. Therefore, the No Action Alternative analyzed in this EIS is a no permit alternative and is not a "No Project Alternative."

Because the existing DA permits would be revoked under this alternative for the five previously permitted projects and no permit would be issued for the Arista del Sol project, the Endangered Species Act (ESA) compliance and incidental take provisions provided in the existing six Biological Opinions (BOs) issued during the Section 7 ESA consultation process would no longer be valid. Additionally, addressing potential impacts to ESA-listed species under Section 7 would not be possible for the Arista del Sol project since there would be no federal nexus (i.e., no DA permit). Given the 25-foot setback assumed for the No Action Alternative, and the likelihood for incidental take of ESA-listed species from construction activities within 250 feet of vernal pools, each of the project proponents would presumably need to prepare a project-level Habitat Conservation Plan (HCP) under Section 10 of the ESA and obtain Incidental Take Permits directly from the USFWS for each of the six projects, including Arista del Sol. Alternatively, the projects may be able to achieve compliance with ESA through the South Sacramento

HCP (SSHCP), a regional HCP which includes this area, once the SSHCP has been approved by the USFWS. At this time, it is uncertain when the SSHCP will be completed.

For each of the five projects permitted by USACE, a site-specific No Action Alternative was analyzed in the initial EAs. The No Action Alternative included a 250-foot setback around vernal pools and, in each of the five EAs, was determined to result in insufficient available land to economically construct a residential development. However, USFWS uses the 250-foot zone around vernal pools only to assess indirect impacts to listed species, not to prohibit development. Under the No Action Alternative, it is unlikely the USFWS would impose a 250-foot setback from all vernal pools in a project-level HCP and Incidental Take Statement. BOs issued for the six projects allowed the filling of multiple acres of vernal pools. Therefore, the analysis in this EIS relies on a 25-foot setback rather than the 250-foot setback to provide meaningful comparison between a reasonable No Action Alternative scenario and the other action alternatives.

Based on wetland delineations conducted for the Sunridge Properties project sites and a 25-foot setback, the potential area for development is reduced when compared to the Proposed Project Alternative for all six sites. Compared to the Proposed Project Alternative, the development area would be reduced by 19% for Anatolia IV, 8% for Sunridge Village J, 45% for Grantline 208, 18% for Douglas Road 98, 60% for Douglas Road 103 and 50% for Arista del Sol. Under the No Action Alternative, approximately 2,060 homes over 303 acres are estimated to be developed, using the same proportion of homes to acreage for each development that is proposed under the Proposed Project Alternative. This alternative assumes that access roads for Grant Line Road can be bridged over waters of the U.S.

Table 2-1 provides development and wetland acreage information for the No Action Alternative.

2.4.2.2 PROPOSED PROJECT ALTERNATIVE

The Proposed Project Alternative, which is the preferred alternative of the project proponents, would consist of developing 589 acres of the six project sites (Anatolia IV, Sunridge Village J, Grantline 208, Douglas Road 98, Douglas Road 103, and Arista del Sol) as residential space, neighborhood parks, road improvements, drainage basins, and commercial space. Approximately 3,258 homes would be constructed. The Proposed Project Alternative would fill about 30 acres of waters of the U.S. and create 477 acres of residential development, 45 acres of neighborhood parks, 28.5 acres of road improvements, 19.2 acres of drainage basin, 21.2 acres of commercial space, and 153.6 acres of onsite wetland preserve. The Proposed Project Alternative would also include creation of 34.2 acres of vernal pool habitat off-site as compensatory mitigation, and 52.7 acres of vernal pool habitat preserved off-site as mitigation. The boundaries of the wetland preserve are similar to those of the Conceptual Strategy.

The Conceptual Strategy was one of ten preserve configurations/development scenarios analyzed in the Regional Alternatives Information Sunridge Specific Plan Subarea report (Foothill Associates 2005). The Conceptual Strategy alternative (Alternative 9) was determined to offer fewer impacts to aquatic ecosystems and lower project costs while maintaining net developable acreage.

The Proposed Project Alternative is shown in Figure 2-6 and information about the alternative is in Table 2-2. Table 2-3 indicates the wetlands impacts associated with the Proposed Project Alternative, identified by type of wetlands. Compensatory mitigation for the loss of waters of the U.S. required by existing DA permits has been completed for Anatolia IV, Douglas Road 98, and Sunridge Village J. For Grantline 208 and Douglas 103, compensatory mitigation has not been initiated. The last project of the Sunridge Properties, Arista del Sol, is pending a DA permit decision by the Corps. The projects are described below.

Table 2-1
No Action Alternative Detail

Property Name	Total Project Size (acres)[1]	Waters of the U.S. Impacted (acres)[2]	Preserve Area (acres)[1]	Developed Area (acres)[1]	Neighborhood Park (acres)[2]	Road Improvements (acres)[2]	Single Family Homes (acres)[2]	Single Family Homes (count)[2]	Drainage Basin (acres)[2]	Commercial Space[2]	Compensatory Mitigation Off-site Vernal Pool Habitat Created	Preservation Mitigation Off-site Vernal Pool Habitat Purchased for Preserve
Anatolia IV	23.9	0.0	0.0	19.4	2.1	1.7	15.6	109	0.0	0.0	0.0	0.0
Sunridge Village J	81.3	0.0	0.0	74.8	7.9	4.0	62.8	339	0.0	0.0	0.0	0.0
Grantline 208	210.7	0.0	0.0	78.4	combined	2.6	71.8	470	4.0	0.0	0.0	0.0
Douglas Road 98	104.9	0.0	0.0	86.0	11.8	4.1	70.1	568	3.2	0.0	0.0	0.0
Douglas Road 103	106.4	0.0	0.0	25.0	combined	2.9	16.0	120	0.0	6.2	0.0	0.0
Arista del Sol	214.9	0.0	0.0	86.7	9.7	2.5	66.8	453	4.1	2.8	0.0	0.0
Total	**742.0**	**0.0**	**0.0**	**370.3**	**31.5**	**17.8**	**303.0**	**2060**	**11.2**	**9.0**	**0.0**	**0.0**

Notes:

1. Acreage determined from Geographic Information Systems analysis

2. Acreage calculated from property Environmental Assessment

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Table 2-2
Proposed Project Alternative Detail

Property Name	Total Project Size (acres)[1]	Waters of the U.S. Impacted (acres)[2]	Preserve Area (acres)[3]	Vernal Pool Acreage Preserved On-Site[3]	Developed Area (acres)[1]	Neighborhood Park (acres)[2]	Road Improvements (acres)[2]	Single Family Homes (acres)[2]	Single Family Homes (count)[2]	Drainage Basin (acres)[2]	Commercial Space[2]	Compensatory Mitigation Off-site Vernal Pool Habitat Created[4]	Preservation Mitigation Off-site Vernal Pool Habitat Purchased for Preserve[4]
Anatolia IV	23.9	1.4	0.0	0.0	23.9	2.6	2.1	19.2	134	0.0	0.0	1.4	2.7
Sunridge Village J	81.3	3.0	0.0	0.0	81.3	8.6	4.3	68.2	369	0.0	0.0	3.4	9.2
Grantline 208	210.7	5.7	68.1	4.7	142.6	combined	4.8	130.6 (park/school/ residences combined)	855	7.2	0.0	6.2	6.9
Douglas Road 98	104.9	3.9	0.0	0.0	104.9	14.4	5.0	85.5	693	3.9	0.0	3.9	7.8
Douglas Road 103	106.4	2.0	43.8	0.7	62.4	combined	7.3	40 (park/residences combined)	301	0.0	15.6	7.3	5.9
Arista del Sol	214.9	13.9	41.1	3.5	173.4	19.4	5.0	133.5	906	8.1	5.6	12.0	20.2
Total	**742.0**	**29.9**	**153.0**	**8.9**	**588.5**	**45.0**	**28.5**	**477.0**	**3,258**	**19.2**	**21.2**	**34.2**	**52.7**

Notes:
1. Acreage determined from Geographic Information Systems analysis
2. Acreage reported from property Environmental Assessment, except for Arista del Sol acreages reported from the DA permit application materials
3. Acreage reported from Biological Opinions, except for Arista del Sol acreages obtained from the Biological Opinion
4. Acreage reported from property's issued 404 permit, except for Arista del Sol acreages obtained from the Biological Opinion

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Table 2-3
Wetlands and Waters of the U.S. Impacts of the Proposed Project Alternative

Property Name	Total Waters of the U.S. Impacted (acres)	Vernal Pool (acres)	Depressional Seasonal Wetland (acres)	Riverine Seasonal Wetland (acres)	Seep (acres)	Ephemeral Drainage (acres)	Pond (acres)	Ditch (acres)	Seasonal Wetland (acres)	Intermittent Drainage (acres)
Anatolia IV	1.36	1.36	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sunridge Village J	2.99	1.88	0.00	0.22	0.00	0.00	0.89	0.00	0.00	0.00
Grantline 208	5.70	5.22	0.04	0.36	0.00	0.08	0.00	0.00	0.00	0.00
Douglas Road 98	3.91	3.70	0.00	0.00	0.00	0.08	0.00	0.00	0.13	0.00
Douglas Road 103	1.98	NA[1]	NA[1]	NA[1]	NA[1]	NA[1]	NA[1]	NA[1]	NA[1]	NA[1]
Arista del Sol	13.88	5.37	0.08	0.67	0.03	0.17	7.56	0.01	0.00	0.00
Total	**29.8**	**17.53**	**0.12**	**1.25**	**0.03**	**0.33**	**8.45**	**0.01**	**0.13**	**0.00**

Notes:
NA = Not Available
Source: DA Permits for Anatolia IV, Sunridge Village J, Grantline 208, Douglas Road 98, and Douglas Road 103, and the permit application for Arista del Sol.
1. The breakdown of waters of the U.S. into type was not provided in the DA Permit for Douglas Road 103.

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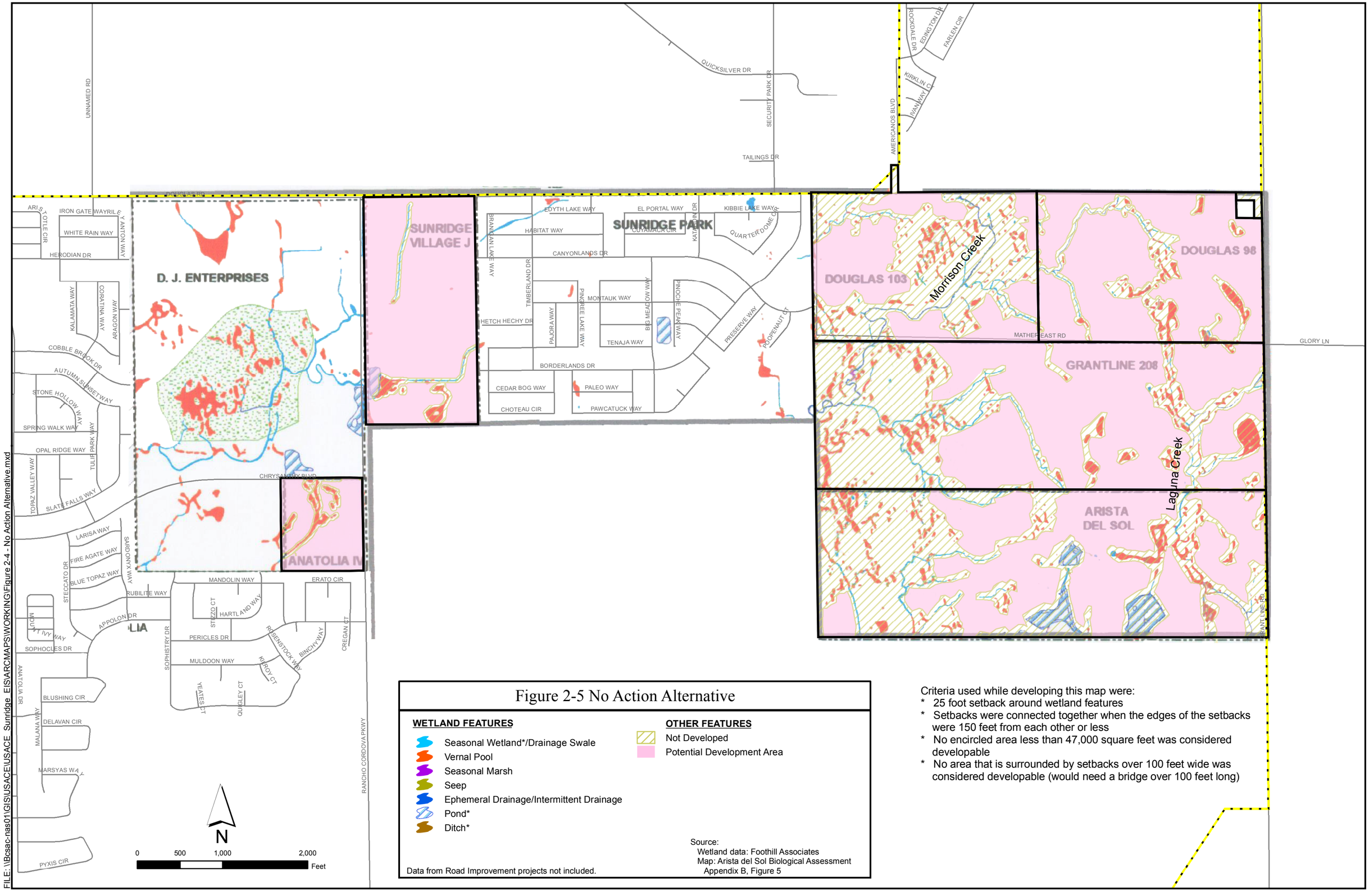

FILE: \\Bcsac-nas01\GIS\USACE\USACE_Sunridge_EIS\ARCMAPSWORKING\Figure 2-4 - No Action Alternative.mxd

Figure 2-5 No Action Alternative

WETLAND FEATURES

- Seasonal Wetland*/Drainage Swale
- Vernal Pool
- Seasonal Marsh
- Seep
- Ephemeral Drainage/Intermittent Drainage
- Pond*
- Ditch*

OTHER FEATURES

- Not Developed
- Potential Development Area

Data from Road Improvement projects not included.

Source:
Wetland data: Foothill Associates
Map: Arista del Sol Biological Assessment
Appendix B, Figure 5

Criteria used while developing this map were:

* 25 foot setback around wetland features
* Setbacks were connected together when the edges of the setbacks were 150 feet from each other or less
* No encircled area less than 47,000 square feet was considered developable
* No area that is surrounded by setbacks over 100 feet wide was considered developable (would need a bridge over 100 feet long)

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Figure 2-6 Proposed Project Alternative

WETLAND FEATURES

- Seasonal Wetland*/Drainage Swale
- Vernal Pool
- Seasonal Marsh
- Seep
- Ephemeral Drainage/Intermittent Drainage
- Pond*
- Ditch*

OTHER FEATURES

- Preserve
- Area to be Developed

Source:
Wetland data: Foothill Associates
Map: Arista del Sol Biological Assessment
Appendix B, Figure 5

Data from Road Improvement projects not included.

N

0 500 1,000 2,000 Feet

FILE: \\Bcsac-nas01\GIS\USACE\USACE_Sunridge_EIS\ARCMAPSWORKING\Figure 2-5 - Proposed Project Alternative.mxd

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ANATOLIA IV

The Anatolia IV project would consist of filling 1.4 acres of waters of the U.S., all vernal pool, to construct 134 single-family homes (19.2 acres), a neighborhood park (2.6 acres), and road improvements (2.1 acres) on an approximately 24-acre parcel. Prior to the initiation of site work for the Anatolia IV project, the site was generally comprised of level to gently rolling terrain, consisting mostly of non-native grasslands. Vernal pools lie within the grasslands. The majority of the site has been used historically as grazing land; however, more recently, the southern and eastern portions of the site have been used for construction staging and earth stockpiling. There is also a single residence located along the southern boundary of the property. Prior to the suspension of the DA permit, the site's vernal pools were disturbed in anticipation of development. Some vernal pools may have reformed in the center of the site, per March 24, 2010, site visit observation by Brown and Caldwell staff. Compensatory mitigation for impacts to waters of the U.S., which consisted of restoration and/or creation of 1.4 acres of vernal pools and swale habitat, and preservation of 2.7 acres of vernal pool habitat, has been completed for this project.

SUNRIDGE VILLAGE J

The Sunridge Village J project would consist of filling 3.0 acres of waters of the U.S., including wetlands (1.88 acres of vernal pool), to construct 369 single-family homes (68.2 acres), 3 neighborhood parks (8.6 acres), and road construction/improvements (4.3 acres) on an 81.3-acre parcel. The site is comprised of gently rolling terrain, consisting mostly of non-native grasslands. Prior to the initiation of site work for Sunridge Village J vernal pools, swales, and a pond lie within the grasslands. Historically, the majority of the site had been rural residential with horse boarding facilities (watering areas, barns, and stables). Currently, there are no aboveground structures situated on the site except a few ancillary farming stationary equipment (i.e., a water heater, water well pump, four concrete stacks, and an electric motor) (see Photos 2.2-1 and 2.2-1). Prior to the suspension of the DA permit, some of the site's vernal pools were disturbed by installation of a large diameter server line along the western boundary of the property, as well as spurs from west to east at two central locations on the property (see Photo 2.2-3). Compensatory mitigation for impacts to waters of the U.S., which consisted of restoration and/or creation of 3.4 acres of vernal pools and preservation of 9.2 acres of wetlands, has been completed for this project.

Photo 2.2-1 – Existing water pressure tank and water well pump at Sunridge Village J.

Photo 2.2-2 – Existing concrete irrigation stand pipes and Fairbanks-Morse™ unidrive motor at Sunridge Village J; background is Sunridge Park development.

Photo 2.2-3 – Looking east toward Sunridge Village J from Jaegar Road: foreground includes uncultivated farmland and sewer manhole; background includes non-native trees and a housing development.

GRANTLINE 208

The Grantline 208 project site encompasses 210.7 acres. The planned uses would include construction of approximately 130.6 acres of residential, park, parkway, school, and detention basin. Additionally, the project would include major road improvements, including construction of Americanos Boulevard and the expansion of Grant Line Road (approximately 4.8 acres), and the construction of a drainage basin along Grant Line Road (approximately 7.2 acres). The project would also include the establishment of an on-site wetland preserve of approximately 68.1 acres. The site is comprised of gently rolling terrain, consisting mostly of non-native grasslands. Vernal pools lie within the grasslands. The majority of the site has been used historically as grazing land. Compensatory mitigation required by the DA permit but not yet initiated for this project includes restoring and/or creating 6.2 acres of vernal pools and preserving 6.9 acres of vernal pool branchiopod habitat.

DOUGLAS 98

The Douglas 98 project would consist of filling 3.9 acres of waters of the U.S., including wetlands (3.7 acres of vernal pools), to construct 693 single-family homes (85.5 acres), three neighborhood park sites (14.4 acres), and road improvements to Douglas and Grant Line Roads (approximately 5 acres). The site is comprised of level to gently rolling terrain, consisting mostly of non-native grasslands. Vernal pools lie within the grasslands. The majority of the site has been used historically as grazing land. There are no structures situated on the site. Compensatory mitigation required by the DA permit for this project was completed and includes constructing or restoring 3.9 acres of vernal pools and preserving 7.8 acres of vernal pool habitat.

DOUGLAS 103

The Douglas 103 project site encompasses 106.4 acres. The planned uses would include construction of approximately 40 acres of residential, park, and parkway development, 15.6 acres of commercial space, 7.3 acres of major roads, and a 43.8-acre wetland and habitat preserve. The site is comprised of level to gently rolling terrain, consisting mostly of non-native grasslands, and is located within the headwaters of the Morrison Creek watershed. Vernal pools lie within the grasslands. The majority of the site has been used historically as grazing land. There are no structures situated on the site except overhead power lines of the Sacramento Municipal Utility District (SMUD). Compensatory mitigation for the loss of water of the U.S. is required by the DA permit for this project, including restoring and/or creating 7.3 acres of vernal pools and preserving 5.9 acres of existing vernal pool habitat. The compensatory mitigation has not been initiated.

ARISTA DEL SOL

The Arista del Sol project site would encompass 214.9 acres. The planned uses would include construction of approximately 133.5 acres of residential development, 19.4 acres of neighborhood parks, 5.6 acres of commercial mixed use development, 8.1 acres of drainage corridor and detention/water quality basin, and 41.1 acres of open space/wetland preserve. The site is comprised of gently rolling terrain, consisting mostly of non-native grasslands. According to the BO issued for the project, approximately 2.3 acres of vernal pool crustacean habitat would be preserved on-site, 20.2 acres would be preserved off-site, and 12.0 acres would be restored or created off-site.

2.4.2.3 REDUCED FOOTPRINT ALTERNATIVE

In consideration of CNPS's concerns about Laguna and Morrison Creeks and the issues identified during evaluation of the Eastern Strip Alternative, the Reduced Footprint Alternative was developed (Figure 2-7). This alternative seeks to protect the headwaters of Laguna and Morrison Creeks, taking into account topography, hydrologic barriers, and existing vernal pools.

The Reduced Footprint Alternative would consist of developing about 456 acres as residential space, neighborhood parks, road improvements, drainage basins and commercial space. This is an approximately 133-acre reduction in development from the Proposed Project Alternative. The wetland preserve acreage and location is consistent with the Conceptual Strategy, but acreage is added to the preserve in the vicinity of Laguna Creek. Additional preserve area is added at the southern end of the preserve identified in the Conceptual Strategy to protect additional headwaters of Laguna Creek and its nearby vernal pool areas.

Acreage developed and filled has been estimated using the Proposed Project Alternative as a baseline. The percent of the total project site that would be developed under the Reduced Footprint Alternative for the Anatolia IV, Sunridge Village J and Douglas Road 103 sites is the same as under the Proposed Project Alternative. The Reduced Footprint Alternative would contain 35% less development at the Grantline 208 site, 11% less development at the Douglas Road 98 site, and 41% less development at the Arista del Sol site. The reduced area available for development consequently reduces the number of acres developed for parks, roads, homes, drainage basins, and commercial space.

The alternative would result in the filling of approximately 20.3 acres of waters of the U.S., and create 367 acres of residential development, 35.5 acres of neighborhood parks, 24.2 acres of road improvements, 12.9 acres of drainage basin, 18.9 acres of commercial space, and 286.2 acres of wetland preserve. This alternative includes 20.4 acres of vernal pool habitat created off-site as compensatory mitigation, and 40.8 acres vernal pool habitat preserved off-site as preservation mitigation. Table 2-4 indicates the acreage of each type of development associated with this alternative.

Figure 2-7 Reduced Footprint Alternative

WETLAND FEATURES

- Seasonal Wetland*/Drainage Swale
- Vernal Pool
- Seasonal Marsh
- Seep
- Ephemeral Drainage/Intermittent Drainage
- Pond*
- Ditch*

OTHER FEATURES

- Preserve Area
- Laguna Creek Preserve Area
- Additional Preserve Area
- Laguna Preserve Crossing
- Area to be Developed

Source:
Wetland data: Foothill Associates
Map: Arista del Sol Biological Assessment
Appendix B, Figure 5

Data from Road Improvement projects not included.

0 500 1,000 2,000 Feet

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FILE: \\Bcsac-nas01\GIS\USACE\USACE_Sunridge_EIS\ARCMAPSWORKING\Figure 2-6 - Reduced Footprint Alternative.mxd

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Table 2-4
Reduced Footprint Alternative Detail

Property Names	Total Project Size (acres)[1]	Waters of the U.S. Impacted (acres)[1]	Preserve Area (acres)[1]	Developed Area (acres)[1]	Neighborhood Park (acres)[2]	Road Improvements (acres)[2]	Single Family Homes (acres)[2]	Single Family Homes (count)[2]	Drainage Basin (acres)[2]	Commercial Space[2]	Compensatory Mitigation Off-site Vernal Pool Habitat Created	Preservation Mitigation Off-site Vernal Pool Habitat Purchased for Preserve
Anatolia IV	23.9	1.4	0.0	23.9	2.6	2.1	19.2	134	0.0	0.0	1.4	2.8
Sunridge Village J	81.3	3.0	0.0	81.3	8.6	4.3	68.2	369	0.0	0.0	3.0	6.0
Grantline 208	210.7	1.9	117.9	92.8	combined	3.1	84.9 (park/school/ residences combined)	556	4.7	0.0	1.9	3.8
Douglas Road 98	104.9	2.9	11.2	93.7	12.9	4.5	76.4	619	3.5	0.0	2.9	5.8
Douglas Road 103	106.4	2.0	44.0	62.4	combined	7.3	40 (park/ residences combined)	301	0.0	15.6	2.0	4.0
Arista del Sol	214.9	9.2	113.1	101.8	11.4	2.9	78.4	532	4.8	3.3	9.2	18.4
Total	**742.0**	**20.3**	**286.2**	**455.8**	**35.5**	**24.2**	**367.1**	**2,511**	**12.9**	**18.9**	**20.4**	**40.8**

Notes:

1. Acreage determined from Geographic Information Systems analysis

2. Acreage reported from property Environmental Assessment, except for Arista del Sol acreages reported from the DA permit application materials

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3 AFFECTED ENVIRONMENT, ENVIRONMENTAL CONSEQUENCES, AND MITIGATION

This section describes the environment of the areas to be affected by the alternatives under consideration, and the environmental consequences and mitigation for the resources evaluated in detail in this environmental impact statement (EIS). Many of the features described under the alternatives are at a preliminary level of design and detailed information is not available. As a result, this environmental consequences analysis is presented at a programmatic level; additional environmental review may be required prior to construction of any alternative. For each resource area, the affected environment is defined, the regulatory framework is presented, environmental consequences are analyzed, and as necessary, mitigation is presented.

Prior environmental documentation was prepared for the six Sunridge Properties in 2001 and 2005, including the *Sunrise-Douglas Community Plan/Sunridge Specific Plan Final Environmental Impact Report* prepared pursuant to the California Environmental Quality Act (County of Sacramento, 2001), and Environmental Assessments (EAs) that USACE prepared for five of the six projects. Because these documents were issued relatively recently, this section uses these documents as sources of information. Any information used from these reports, or others, has been determined to be relevant and appropriate for this EIS. Reports that are incorporated by reference into this EIS are identified as such, and are briefly summarized. Changes that have occurred since these earlier documents were prepared are identified as the information is incorporated into each resource area.

3.1 RESOURCE AREAS NOT EVALUATED IN DETAIL

There are no Indian Trust Assets within the project area. Therefore, Indian Trust Assets are not addressed in this EIS.

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3.2 BIOLOGICAL RESOURCES

This section describes the affected environment, regulatory framework, and environmental consequences and mitigation measures with respect to biological resources, including vegetation, wildlife, special-status species, and sensitive habitats including wetlands and vernal pools.

3.2.1 AREA OF ANALYSIS

The area of analysis for biological resources includes the project site, which is located within the 2,632-acre Sunridge Specific Plan Area, as well as adjacent vernal pool and upland areas (Figure 3.2-1). This section discusses biological resources at the project site based on information gathered from the Biological Assessments, Biological Opinions, Environmental Assessments (EAs) and other sources for each project site.

3.2.2 AFFECTED ENVIRONMENT

3.2.2.1 VEGETATION

The project site is comprised primarily of non-native grassland and wetland complexes, including old-terrace type vernal pools. Non-native grasslands are common in valley and foothill regions throughout the majority of California and typically at elevations below 4,000 feet. The vegetation species in this community are mostly annual grasses that are often non-native, and native herbaceous species. Dormant seeds from the previous season emerge during late fall rains, leading to flowering and seed-set from winter through spring. The plants are typically dead during the dry summer through fall seasons. Many of the non-native grasses that occur in Central Valley grasslands do not require dry conditions but rather thrive as lawn grasses (e.g., Italian ryegrass) under continual summer irrigation. Old-terrace type vernal pools include vegetation that is native and dominated by annual herbs and grasses. Dormant seeds left from previous seasons begin to sprout in winter rains. As increased spring temperatures increase evaporation from pools, concentric rings of varying vegetation remain. Soils specific to this habitat prevent water from rapidly permeating through the water table such that water primarily escapes the pool through evaporation, allowing specialized plants to survive in the rings of tiered levels of available water. These rings represent a phenological phase of a typical vernal pool flowering cycle with progressive maturation of flowering plant species in response to pool dry down. For single observations of vernal pools, the differential flowering in pools may appear ring-like. In fact, the floristic ring pattern can be highly variable. The topography also required for this community is undulating with small mounds, as occur on aggregations most commonly found on old alluvial fans ringing the Central Valley.

ANATOLIA IV

The Anatolia IV project site is approximately 24 acres. Three vegetation communities had been characterized at the project site: non-native annual grassland, vernal pools, and landscaped areas (Foothill Associates, 2004a). The non-native grassland was dominated by non-native annual grass species including wild oats (*Avena fatua*) and soft chess (*Bromus hordeaceus)*. Other species present included valley tassels (*Castilleja attenuate*), sticky tarweed (*Holocarpha virgata*), medusa-head grass (*Taeniatherum caput-medusae*), rose clover (*Trifolium hirtum*), and vetch (*Vicia* spp.) (Foothill Associates, 2004a).

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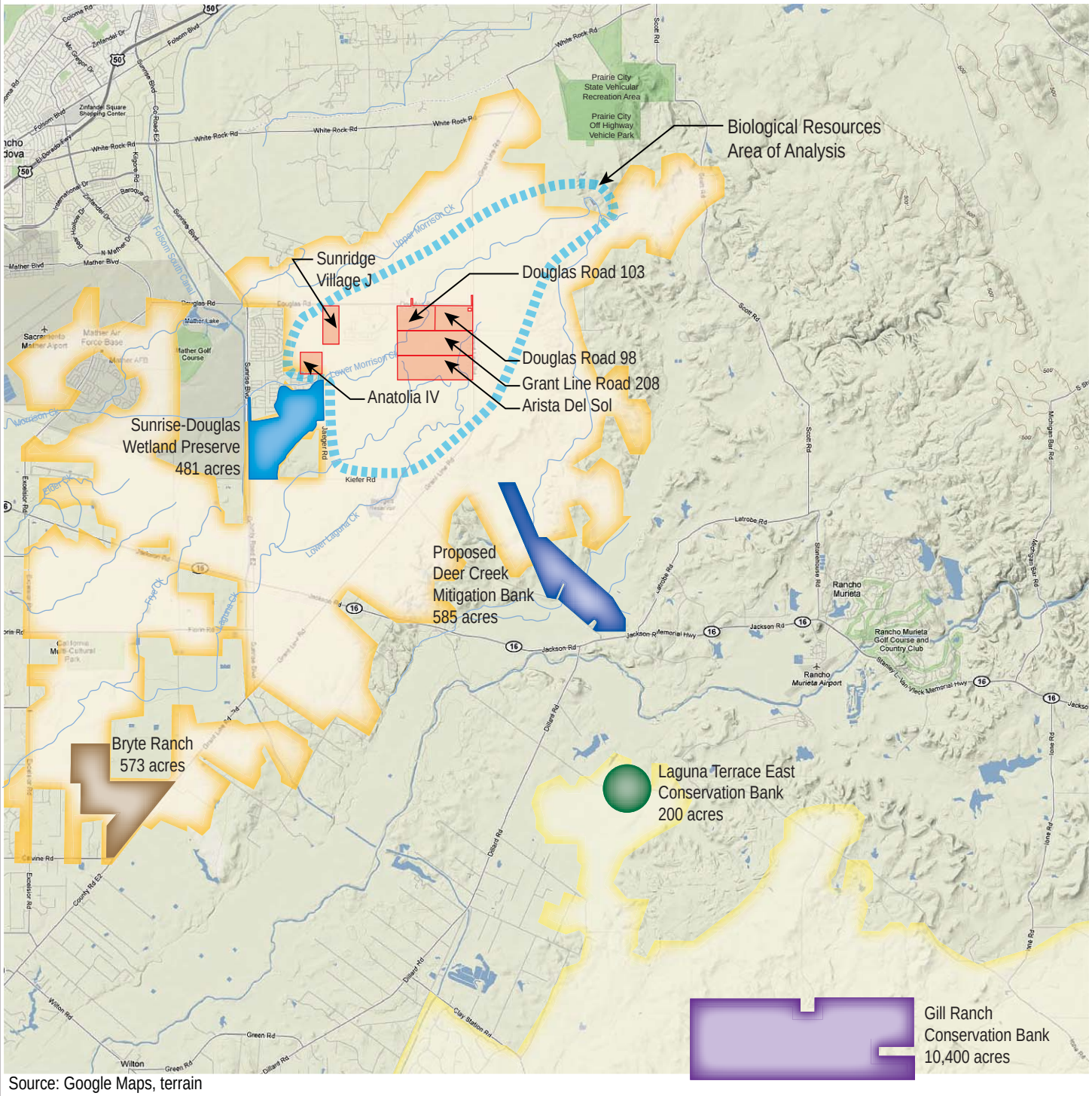

Source: Google Maps, terrain

NORTH

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Scale in Feet

Mather Core Area

Cosumnes/Rancho Seco Core Area

Figure 3.2-1. Area of Analysis for Biological Resources

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Vernal pools supported a variety of plant species including annual hairgrass (*Deschampsia danthoniodes*), downingia (*Downingia* spp.), spikerush (*Eleocharis macrostachya*), Vasey's coyote thistle (*Eryngium vaseyi*), toad rush (*Juncus bufonius*), Fremont's goldfields (*Lasthenia fremontii*), white headed navarretia (*Navarretia leucocephala*), slender popcorn flower (*Plagiobothrys stipitatus*), and dwarf woolly marbles (*Psilocarphus brevissimus*).

Landscaped areas include areas associated with rural residential dwellings. Plants found here include Italian cypress (*Cupressus simpervirens stricta*), palms (*Washingtonia* spp.) and Modesto ash (*Fraxinus oxicarpa*) (see Photo 3.2-1).

Since the vegetation was characterized some site work has occurred on the property. Based on the visual survey conducted on March 24, 2010 most of the vegetation communities were affected by the site work but were re-establishing or persisting on the site. In particular, wetlands appear to be reforming near the center of the parcel, and grasses cover the site.

SUNRIDGE VILLAGE J

The Sunridge Village J project site is approximately 81 acres. Vegetation on the site is primarily non-native annual grassland, historically used for grazing cattle and horses, the site is now vacant. Residences, horse stables, watering areas, barns, and pens have been removed in anticipation of development, although several trees, including ornamentals are still present. In addition, based on the DA permit, some of the aquatic resources on the site were affected by disking and filling and the installation of a trunk sewer line. The stock pond that had been used for watering livestock is no longer present. The large mound on the site is a soil stockpile created during the trenching for the sewer line. Despite the work on the site, vernal pools can still be found in the southern portion of the property (see Photo 3.2-2 and 3-2-3).

Non-native grassland plant species at the site include perennial rye (*Lolium perenne*), rip-gut brome (*Bromus diandrus*), tarweed, filaree (*Erodium botrys*), and Mediterranean barley (*Hordeum hystrix*) (Foothill Associates, 2004b). Although impacted by recent development activities, wet swales are located in linear drainages on the site and support vernal pool and seasonal wetland plant species including Carter's buttercup (*Ranunculus alveolatus*), manna grass (*Glyceria* spp.), toadrush, spikeweed (*Hemizonia* spp.), and annual bluegrass (*Poa annua*). Vernal pools at the site also support swamp timothy (*Crypsis schoenoides*), slender popcorn flower, goldfields, and downingia. The stock pond supported a mix of vernal pool and seasonal wetland vegetation (Foothill Associates, 2004b).

Photo 3.2-1 – Looking at southwest corner of Anatolia IV: foreground includes uncultivated farmland, vacant house, garage, and shed.

Photo 3.2-2 – Looking north toward Sunridge Village J; foreground includes grasses and vernal pool; background includes non native trees.

Photo 3.2-3 – Looking south within Sunridge Village J: foreground includes uncultivated farmland and existing vernal pools within Sunridge Village J; background includes existing housing developments.

GRANTLINE 208

The Grantline 208 project site is approximately 211 acres and was used for grazing cattle. Cattle were no longer present during the visual survey conducted on March 24, 2010. Non-native grassland is the predominant vegetation community on-site; seasonal wetlands, vernal pools, ephemeral drainages, and seasonal marsh also occur. A large stand of eucalyptus trees (*Eucalyptus*, spp.) is also present (Foothill Associates, 2005a).

Plant species associated with grasslands on the project site include soft chess, ripgut brome, barley, Italian ryegrass (*Lolium multiflorum*), annual fescue (*Vulpia* spp.), hawkbit (*Leontodon taraxacoides*), and clover (*Trifolium* spp.). Seasonal wetlands support spikerush, coyote thistle, Carter's buttercup, and fiddle dock (*Rumex pulcher*). Plants that occur within vernal pool on-site include water-starwort (*Callitriche* spp.), annual hairgrass, coyote thistle, manna grass, Hyssop loosestrife (*Lythrum hyssopfolia*), and popcorn flower. Seasonal marsh supports wetland plants including spike rush, cattails (*Typha* spp.), tule (*Scirpus* spp.), rush (*Juncus*, spp.), dallis grass (*Paspalum dilatatum*), and Bermuda grass (*Cynodon dactylon*) (Foothill Associates, 2005a).

DOUGLAS ROAD 98

The 105-acre Douglas Road 98 project site consists of non-native annual grassland, vernal pool, and seasonal wetland. Common plants within grasslands include soft brome, wild oat, hawkbit, filaree, valley

tassels, smooth cat's ear (*Hypochaeris glabra*), mouse-tail grass (*Vulpia*, spp.), clover, tarweed, barley, and medusa-head (Foothill Associates, 2004c).

Vernal pools on the site support plant species including manna grass, vernal pool buttercup (*Ranunculus bonariensis* var. *trisepalus*), coyote thistle, spikerush, hedge-hyssop (*Gratiola ebracteata*), white-headed navarettia, annual hairgrass, and popcorn flower (Foothill Associates, 2004c).

Plant species found within seasonal wetlands on the project site include dock (*Rumex* spp.), quaking grass (*Briza minor*), Italian ryegrass, Mediterranean barley, annual hairgrass, and Fremont's goldfields (Foothill Associates, 2004c).

DOUGLAS ROAD 103

The 106-acre Douglas Road 103 project site had been used as rangeland for grazing cattle. No cattle were present during the March 24, 2010 visual survey. Non-native grassland, vernal pools, riverine and depressional seasonal wetlands, and ephemeral and intermittent drainages are located on-site (Foothill Associates, 2005b).

Non-native grasslands consist mainly of soft brome, wild oat, and other non-native annual species. Vernal pool plants that occur on the project site include water-starwort, annual hairgrass, manna grass, Hyssop loosestrife, white-headed navarettia, and slender popcorn flower. Other wetlands support spikerush, Vasey's coyote thistle, vernal pool buttercup, and fiddle dock.

ARISTA DEL SOL

The Arista del Sol project site consists of 215 acres, used primarily as rangeland for the grazing of horses. A residence and associated outbuildings are located on-site. These buildings were still present and occupied during the visual survey conducted on March 24, 2010; however, cattle were observed, not horses.

The predominant vegetation community on the project site is non-native annual grasslands, with interspersed vernal pools, seasonal wetlands, ephemeral pools, and three stock ponds also located on-site. Grassland plants include soft chess, ripgut brome, barley, Italian ryegrass, annual fescue, hawkbit, and clover (Foothill Associates, 2005c).

Vernal pool plants include water-starwort, annual hairgrass, coyote thistle, manna grass, Hyssop loosestrife, white-headed navarettia, and slender popcorn flower. Other wetlands support spikerush, Vasey's coyote thistle, Carter's buttercup, and fiddle dock (Foothill Associates, 2005c).

3.2.2.2 WILDLIFE

The project site generally supports wildlife species that utilize non-native grasslands and vernal pools. Many bird species are known to inhabit the project site, including raptors such as white-tailed kite (*Elanus leucurus*) and red-tailed hawk (*Buteo jamaicensis*), while large mammals are generally absent. Vernal pool complexes support special-status crustaceans.

ANATOLIA IV

Vegetation communities within the project site support many wildlife species. Common birds utilizing grasslands include mourning dove (*Zenaida macroura*), western meadowlark (*Sturnella neglecta),* savannah sparrow (*Passerculus sandwichensis*), and raptors such as red-tailed hawk. Other grassland

wildlife include black-tailed jackrabbit (*Lepus californicus*), California ground squirrel (*Spermophilus beecheyi*), and western fence lizard (*Sceloporus occidentalis*).

Vernal pool habitats support several wildlife species, including killdeer (*Charadrius vociferus*), song sparrow (*Melospiza melodia*), black phoebe (*Sayornis nigricans*), coyote (*Canis latrans*), Pacific chorus frog (*Pseudacris regilla*), and invertebrates including California linderiella (*Linderiella occidentalis*). In addition, these vernal pools may support federally listed invertebrates that are discussed in the following section.

Based on the visual survey conducted on March 24, 2010, the landscaped area at the southeastern corner of the site is still present, and the remaining land is covered with grasses.

SUNRIDGE VILLAGE J

Common wildlife species that occur in non-native grasslands and vernal pools, such as those described for the Anatolia IV project, would also be expected to occur at the Sunridge Village J site. In the southern portion of the property, during the March 24, 2010 visual survey, the earth was riddled with rodent/snake holes to such an extent that not one step could be taken without encountering a hole. This indicates grading was not done in this portion of the site (see Photo 3.2-4).

Photo 3.2-4 - Typical terrain in the southern portion of the Sunridge Village J property

GRANTLINE 208

Grasslands and wetlands at the Grantline 208 project site support many bird species, including water birds such as American wigeon (*Anas americana*), cinnamon teal (*Anas cyanoptera*), and mallard (*Anas platyrhynchos*), and terrestrial birds including western meadowlark, savannah sparrow, mourning dove, killdeer, western scrub-jay (*Aphelocoma californica*), great-horned owl (*Bubo virginianus*), turkey vulture (*Cathartes aura*), white-tailed kite, American kestrel (*Falco sparverius*), and red-tailed hawk. Botta's pocket gopher (*Thomomys bottae*) is the only mammal known to occur on the site (Foothill Associates, 2005a).

DOUGLAS ROAD 98

Common species associated with grasslands on the site include mourning dove, western meadowlark, savannah sparrow, red-tailed hawk, black-tailed jackrabbit, California ground squirrel, and western fence lizard. Common wildlife that are found within vernal pool habitats on-site include killdeer, song sparrow, black phoebe, coyote, and Pacific chorus frog (Foothill Associates, 2004c).

DOUGLAS ROAD 103

Common wildlife species that occur in non-native grasslands and vernal pools, such as those described above for the adjacent parcels, would also be expected to occur at the Douglas Road 103 project site.

ARISTA DEL SOL

Vegetation communities at the Arista del Sol project site support common wildlife species including Canada goose (*Branta canadensis*), American wigeon, cinnamon teal, mallard, western meadowlark, savannah sparrow, mourning dove, killdeer, western scrub-jay, great-horned owl, turkey vulture, white-tailed kite, American kestrel, and red-tailed hawk. The Botta's pocket gopher is the only mammal known to occur on the site. Vernal pool species include California linderiella along with the federally-listed species discussed below (Foothill Associates, 2005c).

3.2.2.3 SPECIAL-STATUS SPECIES AND CRITICAL HABITAT

Special-status species with the potential to occur within the project site are listed in Table 3.2-1, based on a search of the California Natural Diversity Database (CNDDB) for the Buffalo Creek 7.5-Minute Quadrangle in which the project site is located. In addition, special-status species that have been observed in the project site as noted in the Sunrise-Douglas Community Plan/Sunridge Specific Plan EIR (County of Sacramento, 2001) are included in Table 3.2-1.

Table 3.2-1
Special-Status Species with Potential to Occur within the Project Site

Common Name	Scientific Name	Status
Birds		
Tricolored Blackbird	*Agelaius tricolor*	California Species of Concern
Golden Eagle	*Aquila chrysaetos*	California Species of Concern
Short-eared Owl	*Asio flammeus*	California Species of Concern

Table 3.2-1 Special-Status Species with Potential to Occur within the Project Site (continued)		
Common Name	**Scientific Name**	**Status**
Birds		
Burrowing Owl	*Athene cunicularia*	California Species of Concern
Ferruginous Hawk	*Buteo regalis*	Federal/California Species of Concern
Swainson's Hawk	*Buteo swainsoni*	California Threatened
Northern Harrier	*Circus cyaneus*	California Species of Concern
White-tailed Kite	*Elanus leucurus*	California Protected
Merlin	*Falco columbarius*	California Species of Concern
Prairie Falcon	*Falco mexicanus*	California Species of Concern
Loggerhead Shrike	*Lanius ludovicianus*	California Species of Concern
Long-billed Curlew	*Numenius americanus*	California Species of Concern
Reptiles		
Western Pond Turtle	*Actinemys marmorata*	Federal/California Species of Concern
Amphibians		
California Tiger Salamander	*Ambystoma tigrinum californiense*	Federal Threatened/California Threatened/California Species of Concern
Western Spadefoot	*Spea hammondii*	Federal/California Species of Concern
Mammals		
American Badger	*Taxidea taxus*	California Species of Concern
Invertebrates		
Vernal Pool Fairy Shrimp	*Branchinecta lynchi*	Federal Threatened
Vernal Pool Tadpole Shrimp	*Lepidurus packardi*	Federal Endangered
Valley Elderberry Longhorn Beetle	*Desmocerus californicus dimorphus*	Federal Threatened
Plants		
Boggs Lake Hedge-hyssop	*Gratiola heterosepala*	California Endangered/CNPS 1B.2
Ahart's Dwarf Rush	*Juncus leiospermus* var. *ahartii*	CNPS 1B.2
Legenere	*Legenere limosa*	CNPS 1B.1
Slender Orcutt Grass	*Orcuttia tenuis*	Federal Threatened/California Endangered/CNPS 1B.1
Sacramento Orcutt Grass	*Orcuttia viscida*	Federal Endangered/California Endangered/CNPS 1B.1
Sanford's Arrowhead	*Sagittaria sanfordii*	Federal Species of Concern
Source: California Department of Fish and Game Natural Diversity Database, 2010. CNPS = California Native Plant Society		

ANATOLIA IV

The threatened vernal pool fairy shrimp (*Branchinecta lynchi*) and the endangered vernal pool tadpole shrimp (*Lepidurus packardi*) have the potential to occur due to suitable vernal pool habitat at the project site (Foothill Associates, 2004a). Although focused surveys were not conducted, these two species were assumed to occur on the project site because they occur in the project vicinity and habitat on site is suitable for the species. The project site does not contain critical habitat for these species.

While the threatened California tiger salamander (*Ambystoma tigrinum californiense*) is known to occur in the vicinity of the project site, the species was not observed during surveys. In addition, due to the distance from the project site to known occurrences, the California tiger salamander was determined to be not present at the project site. Further, the project site is not within designated critical habitat for the species.

The valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*), a threatened species, was determined to be not present due to the lack of elderberry shrubs, upon which the species depends, on the project site. In addition, the project site is not within designated critical habitat for the species.

Two special-status plants, the endangered Sacramento Orcutt grass (*Orcuttia viscida*), and the threatened slender Orcutt grass (*Orcuttia tenuis*) were not found at the project site during focused surveys (Foothill Associates, 2004a). Therefore, these species were determined not to be present.

State special-status species that have the potential to occur at the project site include those listed in Table 3.2-1.

SUNRIDGE VILLAGE J

Two special-status species, the federally-threatened vernal pool fairy shrimp and the federally-endangered vernal pool tadpole shrimp have the potential to occur due to suitable vernal pool habitat at the project site (Foothill Associates, 2004a). Although focused surveys were not conducted, these two species were assumed to occur on the project site because they occur in the project vicinity and habitat on site is suitable for the species. The project site does not contain critical habitat for these species.

Other federally-listed species known to occur in the vicinity of the project site, including the California tiger salamander, valley elderberry longhorn beetle, Sacramento Orcutt grass, and slender Orcutt grass, were determined to be not present (Foothill Associates, 2004b).

State special-status species that have the potential to occur at the project site include those listed in Table 3.2-1.

GRANTLINE 208

The federally-threatened vernal pool fairy shrimp and the federally-endangered vernal pool tadpole shrimp have the potential to occur due to suitable vernal pool habitat at the project site (Foothill Associates, 2005a). The project site does not contain critical habitat for these species.

Other federally-listed species known to occur in the vicinity of the project site, including the California tiger salamander, valley elderberry longhorn beetle, Sacramento Orcutt grass, and slender Orcutt grass, were determined not to be present (Foothill Associates, 2005a).

State special-status species that have the potential to occur at the project site include those listed in Table 3.2-1.

DOUGLAS ROAD 98

Vernal pool fairy shrimp and vernal pool tadpole shrimp were found in some of the vernal pools at the project site during biological surveys (Foothill Associates, 2004b). The project site does not contain critical habitat for these species. Other federally-listed species known to occur in the vicinity of the project site, including the California tiger salamander, valley elderberry longhorn beetle, Sacramento Orcutt grass, and slender Orcutt grass, were determined not to be present (Foothill Associates, 2004b).

State special-status species that have the potential to occur at the project site include those listed in Table 3.2-1.

DOUGLAS ROAD 103

Vernal pool fairy shrimp and vernal pool tadpole shrimp have been documented as occurring on the project site (Foothill Associates, 2005b). The project site does not contain critical habitat for these species. Other federally-listed species known to occur in the vicinity of the project site, including the California tiger salamander, valley elderberry longhorn beetle, Sacramento Orcutt grass, and slender Orcutt grass, were determined not to be present (Foothill Associates, 2005b).

State special-status species that have the potential to occur at the project site include those listed in Table 3.2-1.

ARISTA DEL SOL

Vernal pool fairy shrimp and vernal pool tadpole shrimp have been documented as occurring on the project site (Foothill Associates, 2005c). The project site does not contain critical habitat for these species. Other federally-listed species known to occur in the vicinity of the project site, including the California tiger salamander, valley elderberry longhorn beetle, Sacramento Orcutt grass, and slender Orcutt grass, were determined not to be present (Foothill Associates, 2005c).

3.2.2.4 VERNAL POOLS

In the Sunridge Specific Plan Area, there are approximately 115 acres of vernal pools (Foothill Associates, 2004d). Of these, approximately 71 acres were located on the Sares-Regis property (Anatolia I, II, and III). In 1996, USACE authorized the filling of 27 acres of these vernal pools, along with preservation of approximately 44 acres within a 482-acre onsite preserve.

In May 2002, prior to the certification of the Sunrise-Douglas Community Plan/Sunridge Specific Plan EIR, the need for wetlands and endangered species permitting strategies for the entire Sunrise-Douglas Community Plan area was recognized. Over 162 acres of vernal pool habitat exists within about 4,600 acres of the Sunrise-Douglas Community Plan area. Vernal pools are shallow pools that become seasonally inundated and support specific plant and wildlife species. The dynamic nature of this habitat makes it highly sensitive to environmental factors, and the species that depend on them are specialized for periods of inundation and periods of drought. A number of plant and wildlife species that occur in wetland habitats are special-status species, and vernal pool ecosystems are considered very threatened due to rapid development of the area.

The U.S. Fish and Wildlife Service (USFWS) Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon (USFWS, 2005) (Vernal Pool Recovery Plan) establishes an ecosystem-level strategy for the conservation and recovery of vernal pools. It covers 33 plant and animal species, 20 of which are federally-listed as endangered or threatened, that occur exclusively or primarily within vernal pool ecosystems of California and southern Oregon. The objectives of the plan are to address the threats to vernal pool species and to promote the conservation and preservation of vernal pool ecosystems.

The Vernal Pool Recovery Plan defines core areas as critical sites necessary for the recovery or conservation of threatened or endangered species. Although habitat protection of remaining vernal pools and vernal pool complexes in the vernal pool regions is a long-term goal, the "Core Areas" identified are targeted as the initial focus of protection measures. Core Areas are based on the known distribution of vernal pool species and habitats and include representative sites across a given species range, or support high species diversity. Core Areas are the specific sites that are necessary to recover these endangered or threatened species or recover or to conserve the species of concern addressed in the USFWS Recovery Plan. Higher recovery priorities are assigned to: (1) species with low numbers of populations or limited geographical distributions, (2) the largest blocks of habitat, (3) the largest populations of each taxon, and (4) to those populations or species representing unique ecological conditions and genotypes.

The core areas are ranked by Zone 1, 2, or 3, with Zone 1 representing areas with the highest recovery priority. The Mather Core Area is designated Zone 1 due to the presence of Sacramento Orcutt grass (*Orcuttia viscida*), an endangered species, and a high number of other rare species. The Vernal Pool Recovery Plan identifies the percent of suitable species habitat that would need to be protected within each core area to accomplish initial habitat protection goals. Although threats vary among core areas, habitat management to promote population stability of listed species and species of concern is likely to include: (1) maintaining the hydrology of the vernal pools or vernal pool complexes; (2) controlling invasive nonnative and native plants (e.g., through appropriately managed burning or grazing or the use of specific herbicides); and (3) providing suitable upland habitat buffers to protect pollinators of vernal pool plants, dispersal of vernal pool plants and animals, and local watersheds, and sustain important predators of herbivores such as rodents and rabbits (e.g., hawks).

The Vernal Pool Recovery Plan goals for the Mather Core Area are 95% preservation of suitable habitat for slender Orcutt grass (*Orcuttia tenuis*), Sacramento Orcutt grass (*Orcuttia viscida*), and vernal pool tadpole shrimp (*Lepidurus packardi*), and 85% preservation of suitable habitat for the vernal pool fairy shrimp (*Branchinecta lynchi*). The project site is within the Mather Core Area identified in the Vernal Pool Recovery Plan.

According to the USFWS Vernal Pool Tadpole Shrimp (*Lepidurus packardi*) 5-Year Review: Summary and Evaluation (September 2007), the Mather Core Area contains approximately 74% of all the known vernal pool tadpole shrimp occurrences in the southeastern Sacramento Valley, possibly the highest density of vernal pool tadpole shrimp occurrences within the range of the species. According to the review, the area is considered part of a "sub-watershed matrix," which extends from Highway 50 to the Cosumnes River. From the Sacramento/El Dorado County Boundary on the east to Mather Field on west (paralleling Douglas Road), this "sub-watershed matrix" is further divided by the following major roads, highways, and infrastructure: Scott Road, Grantline Road, Sunrise Boulevard, Folsom South Canal, Eagles Nest Road, Excelsior Road, and Mather Field. This "sub-watershed matrix" is effectively terminated at perennial aquatic habitats including Mather Lake, Blodgett Reservoir, and various mine pits.

High rainfall events would historically connect old terrace vernal pools into large, shallow, slow-flowing, temporary lakes. This hydrologic connectivity during high flows would facilitate metapopulation recolonization of vernal pools by local populations that were subject to localized extirpation during drought years. The USFWS review states that the hydrological connectivity in this area comprises a

functioning ecosystem, underlain by old terrace soils, that is characterized by one of the densest and highest quality vernal pools areas in California. However, all occurrences within this core area are threatened by surrounding urbanization, hydrological alteration of vernal pools, potentially inappropriate management (including use of herbicides and inappropriate levels of grazing), and competition with introduced and native vegetation. Dispersal of vernal pool species now occurs primarily through the activities of waterfowl and shorebirds (USFWS, 2004a,b; 2005; 2006a,b,c,d).

3.2.3 REGULATORY FRAMEWORK

Biological resources in the project site are protected by several federal, state, and local laws and policies, as described in this section.

3.2.3.1 FEDERAL PLANS, POLICIES, REGULATIONS, AND LAWS

ENDANGERED SPECIES ACT

The Endangered Species Act (ESA) of 1973, as amended (16 United States Code (USC) §1531 *et seq*.) provides for the conservation and recovery of endangered and threatened species and the ecosystems upon which they depend. Section 7 of the ESA requires federal agencies to aid in the conservation and recovery of listed species and to ensure that their activities will not jeopardize the continued existence of listed species or adversely modify designated critical habitat. The USFWS and the National Oceanic and Atmospheric Administration are responsible for administration of the ESA.

MIGRATORY BIRD TREATY ACT

The Migratory Bird Treaty Act (MBTA) of 1918, as amended (16 USC §703 *et seq*.) decrees that all migratory birds and their parts (including eggs, nests and feathers) are fully protected. Migratory birds include geese, ducks, shorebirds, raptors, songbirds, wading birds, seabirds, and passerine birds (such as warblers, flycatchers, and swallows). Under the MBTA, taking, killing or possessing migratory birds is unlawful, and projects that are likely to result in the taking of birds protected under the MBTA would require the issuance of take permits from the USFWS. Activities that would require such a permit would include destruction of migratory bird nesting habitat during the nesting season when eggs or young are likely to be present.

CLEAN WATER ACT

The Clean Water Act (CWA) is the primary federal law in the United States governing water pollution. Commonly abbreviated as the CWA, the act established the goals of eliminating releases to water containing high amounts of toxic substances, eliminating additional water pollution by 1985, and ensuring that surface waters would meet standards necessary for human sports and recreation by 1983.

Section 401 of the CWA requires certification from the State to ensure compliance with state water quality standards for any activity that may result in a discharge to a water body. A project that would result in the discharge of any pollutant, including soil, into waters and wetlands requires coordination with the appropriate California Regional Water Quality Control Board to obtain Section 401 certification.

FISH AND WILDLIFE COORDINATION ACT

The Fish and Wildlife Coordination Act of 1934, as amended (16 USC §661 et seq.) requires consultation with the USFWS whenever the waters or channel of a body of water of the United States (U.S.) are

modified by a department or agency. The Fish and Wildlife Coordination Act provides for wildlife conservation through planning, development, maintenance and coordination of wildlife conservation and rehabilitation.

USFWS RECOVERY PLAN FOR VERNAL POOL ECOSYSTEMS OF CALIFORNIA AND SOUTHERN OREGON

As described above, the Vernal Pool Recovery Plan identifies the Mather Core Area, in which the project area is located, as having the highest priority for conservation and recovery of vernal pool species and their habitat. Recovery plans are voluntary guidance documents that broadly address conservation needs of the species by identifying research, habitat protection and restoration, and management, and all other actions that must be taken to bring a species to a state in which it may be delisted or downlisted. The ESA envisions recovery plans as the central organizing tool for guiding each species' recovery process. They should also guide federal agencies in fulfilling their obligations under Section 7(a)(1) of the ESA which call on all federal agencies to "utilize their authorities in furtherance of the purposes of this Act by carrying out programs for the conservation of endangered species and threatened species …" In addition to outlining proactive measures to achieve the species' recovery, recovery plans provide context and guidance for the implementation of other provisions of the ESA, such as Section 7(a)(2) consultations with other federal agencies and the development of Habitat Conservation Plans.

3.2.3.2 STATE PLANS, POLICIES, REGULATIONS, AND LAWS

CALIFORNIA ENDANGERED SPECIES ACT

The California Department of Fish and Game (CDFG) is responsible for administration of the California Endangered Species Act (CESA) of 1984, as amended (Fish and Game Code Section 2050 *et seq*.). Unlike the Federal ESA, there are no state agency consultation procedures under CESA. For projects that affect both a state and Federal listed species, compliance with the Federal ESA will satisfy CESA if CDFG determines that the Federal incidental take authorization is "consistent" with CESA. Projects that will result in a take of a state-only listed species require a take permit under CESA.

CALIFORNIA FISH AND GAME CODE

The CDFG has responsibility for protection of streams, water bodies, and riparian corridors through the Streambed Alteration Agreement process under Section 1601-1606 of the California Fish and Game Code. The CDFG regulates activities that would alter the flow, bed, channel or bank of streams and lakes. Wetlands under jurisdiction of USACE may or may not be included in the area covered by a Streambed Alteration Agreement obtained from CDFG.

3.2.3.3 REGIONAL AND LOCAL PLANS, POLICIES, REGULATIONS, AND LAWS

SOUTH SACRAMENTO HABITAT CONSERVATION PLAN

Pursuant to Section 10(a)(1)(B) of the ESA, the proposed South Sacramento Habitat Conservation Plan (SSHCP) presents a regional approach to protecting Federal and state endangered and threatened species in areas under development. Currently in draft, the SSHCP is a large-scale consolidated effort to protect and enhance wetlands (primarily vernal pools), aquatic, and upland habitats to provide ecologically viable conservation areas (County of Sacramento, et al., 2008). Covering 30 plant and wildlife species, including 10 that are state or Federally listed as threatened or endangered, the SSHCP will also serve to support application for Federal and state incidental take permits under the ESA and CESA. Part of the

purpose of the SSHCP is to minimize regulatory hurdles and streamline the permitting process for projects that will engage in covered activities, while consolidating environmental efforts to protect and enhance aquatic and upland habitats to provide ecologically viable conservation areas. The SSHCP will be an agreement that will allow the County and cities to extend incidental take coverage to third parties. The SSHCP is not currently in effect and is not a regulatory document.

RANCHO CORDOVA GENERAL PLAN

The City of Rancho Cordova General Plan, Natural Resources Element, sets forth goals, policies, and actions for the preservation of the City's natural resources, including wildlife and habitat, as well as supporting the SSHCP and supporting policies and actions related to preserving natural wetlands (City of Rancho Cordova, 2006).

3.2.4 ENVIRONMENTAL CONSEQUENCES AND MITIGATION MEASURES

This section describes the potential impacts on biological resources, including vegetation, wildlife, and special-status species, in the area of analysis from the project alternatives. The project area contains significant vernal pool and wetland habitat.

Vernal pool habitat has been noted by the USFWS, the California Native Plant Society (CNPS), and others as requiring protection because it is unique and supports special-status species. In 2004, USEPA, USFWS, and USACE developed the Conceptual-Level Strategy for Avoiding, Minimizing, and Preserving Aquatic Resource Habitat in the Sunrise-Douglas Community Plan Area (Conceptual Strategy) for avoiding, minimizing, and preserving aquatic resource habitat in the Sunrise-Douglas Community Plan Area. An advisory document, the Conceptual Strategy set forth ten principles and standards that should be followed during development of projects within the Sunrise-Douglas Community Plan Area in order to achieve reasonable protection and conservation of federally threatened and endangered species under the Endangered Species Act (ESA), while taking a regional approach to avoidance and minimization of impacts to waters of the U.S., including wetlands, in accordance with Section 404 (b)(1) guidelines under the CWA. The Conceptual Strategy also sought to support development of the South Sacramento County Habitat Conservation Plan which seeks to protect vernal pool habitat within the Sunrise-Douglas Community Plan area.

As part of the Conceptual Strategy, a map was developed to identify possible preserve areas that represent the minimum acceptable level of onsite preservation to maintain species and habitat connectivity and avoid impacts to waters of the U.S. To meet the goals of ESA and the CWA, the three agencies arrived at the boundaries of the "Preserve Areas" based on best professional judgment, and available information about planned actions, extent of waters of the U.S., including wetland delineations, locations of listed species and potential habitat, avoidance and minimization measures, and compensatory mitigation opportunities . Of particular focus was the preservation of vernal pool complexes and corridors for Morrison Creek and Laguna Creek.

3.2.4.1 THRESHOLDS OF SIGNIFICANCE

The National Environmental Policy Act (NEPA) requires an evaluation of potential impacts to federally-listed endangered species, the ecological importance and distribution of affected species, and the intensity of potential impacts from the project alternatives.

The thresholds for determining the significance of impacts for this analysis encompass the factors taken into account under NEPA to determine the significance of an action in terms of its context and the

intensity of its impacts. The alternatives under consideration were determined to result in a significant impact related to biological resources if they would result in any of the following:

- Have a substantial adverse effect, either directly or through habitat modification, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by CDFG or USFWS;
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by CDFG or USFWS;
- Have a substantial adverse effect on jurisdictional waters of the U.S, including wetlands, as defined by Section 404 of the CWA through direct removal, filling, hydrological interruption, or other means;
- Interfere substantially with the movement of any native resident or migratory wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance;
- Conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan; or
- Substantially reduce the habitat of a fish or wildlife species; cause a fish or wildlife population to drop below self-sustaining levels; threaten to eliminate a plant or animal community; or substantially reduce the number or restrict the range of an endangered, rare, or threatened species.

3.2.4.2 ANALYSIS METHODOLOGY

Based on the affected environment, regulatory framework, and thresholds of significance, an evaluation of project alternatives was conducted to determine if impacts to biological resources, including wildlife and plants, special-status species, and sensitive habitats, would be significant. Potential impacts were evaluated by considering where the project alternatives would overlap or encroach on habitat, and how operations of the alternatives might affect habitat and species at the project location. This evaluation included direct impacts to species, including threatened, endangered, or candidate species, and populations, as well as impacts to habitat on which these species depend. Impacts on wildlife movement and conflicts with biological resources planning documents were also evaluated.

3.2.4.3 IMPACT ANALYSIS

IMPACT3.2-1 – An adverse effect on a population of threatened endangered, or candidate species. *An adverse effect on a population of a threatened, endangered, or candidate species or the loss or disturbance of important habitat for a listed or candidate species.*

Proposed Project Alternative – Under the Proposed Project Alternative, 588.5 acres would be developed into 477 acres of residential development, 45 acres of neighborhood parks, 28.5 acres of road improvements, 19.2 acres of drainage basin, and 21.2 acres of commercial space. A total of 153 acres would be set aside as wetland preserve (Figure 2-5). There would be a total net loss of 589 acres (742-

153 acres) of non-native annual grasslands within which 29.9 acres of waters of the U.S., including 19.9 acres of vernal pools, would be filled.

Based on previous studies and focused plant and wildlife species surveys, two special-status species occur within vernal pools on the project site: the threatened vernal pool fairy shrimp (*Branchinecta lynchi*) and the endangered vernal pool tadpole shrimp (*Lepidurus packardi*). The project site is not within designated critical habitat for these species.

Significant direct and indirect impacts to the threatened vernal pool fairy shrimp and the endangered vernal pool tadpole shrimp would occur under the Proposed Project Alternative. Direct effects would occur through mortality to these species and permanent loss of vernal pool habitat, and indirect effects would occur through loss or alteration of upland and swale areas that support aquatic habitat. This alteration includes fragmentation of habitat and changes to hydrology as well as increased sediment, pollutants, and nutrients to wetlands downstream. In addition, long-term indirect effects from increased human presence would include the introduction of invasive plants, feral cats and other non-native predators to sensitive species, and hazardous and non-hazardous waste and materials. The USFWS estimates that any jurisdictional wetland or vernal pool habitat within 250 feet of project development would be indirectly impacted.

In addition, several state-listed species have the potential to occur within the project site, as listed in Table 3.2-1. Significant impacts to these species could occur under the Proposed Project Alternative, including direct mortality and permanent loss of habitat.

Therefore, **significant direct and indirect** impacts to threatened, endangered, and candidate species would result from the Proposed Project Alternative.

Reduced Footprint Alternative - The Reduced Footprint Alternative would develop 742 acres into 367 acres of residential development, 35.5 acres of neighborhood parks, 24.2 acres of road improvements, 12.9 acres of drainage basin, 18.9 acres of commercial space, and 286.2 acres of wetland preserve (Figure 2-6). There would be a total net loss of 455.8 acres (742-286.2 acres) of non-native annual grasslands within which 20.3 acres of waters of the U.S., including vernal pools, would be filled. A delineation of extent of vernal pools impacted by the Reduced Footprint Alternative was not performed. However, the Reduced Footprint Alternative reduces impacts to wetlands by approximately one-third of the Proposed Project Alternative. Therefore, impacts to vernal pools would be expected to be reduced by one-third.

Under the Reduced Footprint Alternative, the preserve area of the Proposed Project Alternative is expanded to include additional acreage at the southern end of the preserve, and near the tributaries to Laguna Creek. The increased preserve area is intended to protect the headwaters of Laguna Creek and its nearby vernal pool areas. As a result, the Reduced Footprint Alternative would contain 35% less development in the Grantline 208 portion of the project site, 11% less development in the Douglas Road 98 portion, and 41% less development in the Arista del Sol portion.

As with the Proposed Project Alternative, direct and indirect impacts to the threatened vernal pool fairy shrimp and the endangered vernal pool tadpole shrimp would occur under the Reduced Footprint Alternative. Direct effects would occur through mortality to these species and permanent loss of vernal pool habitat, and indirect effects would occur through loss or alteration of upland habitat, increased human presence, changes to hydrology, increased sediment, pollutant and nutrient influx, or other created conditions.

In addition, several state-listed species have the potential to occur within the project area as listed in Table 3.2-1. Significant impacts to these species could occur under the Reduced Footprint Alternative, including direct mortality and permanent loss of habitat.

Therefore, **significant direct and indirect** impacts to threatened, endangered, and candidate species would result from the Reduced Footprint Alternative.

No Action Alternative - As described in Chapter 2, the No Action Alternative would consist of construction of 2,060 single family homes and associated infrastructure. Construction activities would include site preparation, staging, excavation, paving, and building construction activities. No wetlands would be filled, and development would not occur within 25 feet of waters of the U.S.

As no wetlands, including vernal pools, would be filled, and no work would be conducted within 25 feet of wetlands, **no direct** impacts to threatened, endangered, or candidate species are anticipated under the No Action Alternative. However, development next to vernal pools under the No Action Alternative could have **indirect significant** impacts to threatened, endangered, or candidate species.

Mitigation Measure 3.2-1a - Compensatory Vernal Pool Habitat Creation and Preservation

Proposed Project Alternative and Reduced Footprint Alternative - To mitigate for **Impact 3.2-1**, direct and indirect impacts to threatened, endangered, and candidate vernal pool species, compensatory mitigation would include a minimum of 1:1 creation and 2:1 preservation of vernal pool habitat under a Compensatory Mitigation Plan approved by USACE and USFWS.

Under the Proposed Project Alternative, 34.2 acres of vernal pool habitat would be created off-site as compensatory mitigation, and 52.7 acres of vernal pool habitat would be preserved off-site as compensatory preservation. Under the Reduced Footprint Alternative, 20.4 acres of vernal pool habitat would be created off-site as compensatory mitigation, and 40.8 acres of vernal pool habitat would be preserved off-site as compensatory preservation. Preservation credits would be purchased at the Bryte Ranch conservation bank or other approved mitigation site. The off-site mitigation could occur at Gill Ranch in eastern Sacramento County, or other appropriate site, that consists of annual grassland with vernal pool complexes throughout. Laguna Creek runs through the Conceptual Strategy Preserve Area. With the proposed mitigation, there would be no net loss of waters of the U.S. under the Proposed Project Alternative or the Reduced Footprint Alternative. Therefore the impacts to threatened, endangered, or candidate species would be less than significant with mitigation.

All of the Reasonable and Prudent Measure and Terms and Conditions established in the USFWS BOs for the project regarding compensatory mitigation are included as special conditions of the USACE permits. Therefore, the mitigation measures called for in the BOs are requirements of both the Proposed Project Alternative and the Reduced Footprint Alternative.

Compensation wetlands shall be designed to meet or exceed the hydrophytic conditions and operating functions of the existing wetlands proposed for impact and mitigate the loss of special status species habitat including fairy/tadpole shrimp, as required by the USFWS and the CDFG.

A monitoring protocol would be required to assess whether the compensation wetlands are functioning as intended. Specific performance standards for hydrologic, floral, and faunal parameters shall be proposed to determine success of the created wetlands. The monitoring plan shall specify the corrective measures/modifications to be implemented in the event that monitoring indicates that the performance standards are not being met. Monitoring shall occur for at least five years and until success criteria are met, and as required by USACE and USFWS.

In addition, a maintenance plan would be required for the wetland preservation/mitigation areas describing the measures to be implemented to assure that they are maintained as wetland habitat in perpetuity. The maintenance plan shall address buffering from adjacent uses, fencing, access erosion control, and weed eradication.

An evaluation would be conducted of impacts related to loss of upland habitat from the creation of vernal pool habitat off-site and impacts to wildlife and plant species that occur in these uplands. As uplands are important as buffers to support aquatic habitat, it is anticipated that off-site vernal pool creation would require adequate upland habitat and that impacts related to loss of upland habitat would be less than significant.

For three of the six projects included in this EIS, Anatolia IV, Douglas Road 98, and Sunridge Village J, the off-site compensatory mitigation required by the respective DA permit to offset vernal pool impacts has been completed. For Anatolia IV, 1.36 acres of habitat credits were purchased at the Laguna Terrace Mitigation Property, and 2.72 acres of preservation credits were purchased at the Gill Ranch Open Space Preserve. For Sunridge Village J, 3.38 acres of habitat were constructed at Gill Ranch, and an additional 9.18 acres of preservation credits were purchased at the Bryte Ranch conservation bank. For Douglas Road 98, 3.91 acres of habitat were constructed at a USACE-approved location. Douglas Road 98's mitigation was not through a mitigation bank, it was permittee-responsible mitigation. Although additional monitoring is needed to determine the long-term success, the compensatory mitigation completed to date for these projects appears to adequately offset impacts to aquatic resources.

No Action Alternative –No compensatory mitigation for direct impacts to vernal pools or other waters of the U.S. occurs under Mitigation Measure 3.2-1 under the No Action Alternative.

Mitigation Measure 3.2-1b- Best Management Practices (BMPs) to Protect Vernal Pools During Construction

To reduce potential impacts to vernal pools that are to be preserved, the following Best Management Practices (BMPs) would be implemented during construction:

- The project proponent shall include a copy of the BO within its solicitations for construction of the proposed project, making the prime contractor responsible for implementing all requirements and obligations included within the BO, and to educate and inform all other contractors involved in the project as to the requirements of the BO. The project proponents shall make the terms and conditions in the BO a required item in all contracts for the project that are issued by the County to all contractors. The project proponents shall provide the Division Chief of Endangered Species (Central Valley) at the Sacramento Fish and Wildlife Office with a hardcopy of the contract(s) for this project at least ten (10) working days before it is accepted or awarded.

- At least 30 calendar days prior to initiating construction activities, the project proponents shall submit the names and curriculum vitae of the biological monitor(s) for the project.

- A USFWS-approved biologist must be on-site during all construction-related activities that occur within 250 feet of vernal pool crustacean habitat, and that could result in the take of these federally-listed species. The biologist will have the authority to halt any action that might result in take of listed species. If the biologist exercises this authority, the USFWS and the CDFG shall be notified by telephone and letter within one (1) working day.

- A Worker Environmental Awareness Training Program for construction personnel shall be conducted before the commencement of construction. The program shall provide workers with information on their responsibilities with regard to the listed vernal pool crustaceans, an overview

of the life-history of the species, information on take prohibitions, and an explanation of the relevant terms and conditions of the BO. Written documentation of the training must be submitted to the Sacramento Fish and Wildlife Office within three (3) working days of the completion of instruction.

- Prior to groundbreaking, high-visibility fencing that is at least 4 feet tall shall be placed along the boundaries of the construction zone to clearly mark this zone and to prevent construction vehicles or personnel from straying onto adjacent off-site habitat. The fencing shall be established at a minimum distance of 250 feet from the edge of the vernal pools. Such fencing will be inspected by the on-site biologist at the beginning of each work day and maintained in good condition. The fencing may be removed only when the construction of the project is completed.

- During construction operations, the number of access routes, number and size of staging areas, and the total area of the proposed project activity will be limited to the minimum necessary. Routes and boundaries will be clearly demarcated. Movement of heavy equipment to and from the project site will be restricted to established roadways to minimize habitat disturbance, and all vehicle traffic on access road will observe a speed limit of 20 miles per hour. The stockpiling of construction materials, portable equipment, vehicles, and supplies will be restricted to the designated construction staging areas and exclusive of the wetland avoidance areas. All fueling, cleaning, and maintenance of vehicles and other equipment will occur only within designated areas and at least 250 feet away from any wetland habitats. The applicant will ensure contamination of habitat does not occur during such operations. All workers will be informed of the importance of preventing spills and appropriate measures to take should a spill occur. Any spills or hazardous materials will be cleaned up immediately. Such spills will be reported in the post-construction compliance reports.

- To control erosion during and after implementation of the project, the applicant will implement BMPs as identified by the Central Valley Regional Water Quality Control Board. Erosion control measures and BMPs, which retain soil or sediment, runoff from dust control, and hazardous materials on the construction site and prevent these from entering the vernal pool complexes, will be placed, monitored, and maintained throughout the construction operations. These measures and BMPs may include, but are not limited to, silt fencing, sterile hay bales, vegetative strips, hydroseeding, and temporary sediment disposal. A Storm Water Pollution Prevention Plan (SWPPP) described in the BO shall include these and any other measures necessary to prevent the discharge of contaminated runoff onto adjacent offsite wetland habitats.

- All heavy equipment, vehicles, and supplies will be stored at the designated staging area at the end of each work period. The stockpiling of construction materials, portable equipment, vehicles, and supplies will be restricted to the designated construction staging areas and exclusive of the open space/wetland preserve and offsite wetland avoidance areas. Staging areas for construction equipment will be located so that spills of oil, grease or other petroleum by-products will not be discharged into any watercourse or sensitive habitat. All fueling, cleaning, maintenance, and staging of vehicles and other equipment will occur only within designated areas and at least 250 feet away from the open space/wetland preserve and any off-site vernal pool crustacean habitats. All machinery will be properly maintained and cleaned to prevent spills and leaks. All workers will be informed of the importance of preventing spills and appropriate measures to take should a spill occur. Any spills or hazardous materials will be cleaned up immediately in accordance with applicable local, state and/or federal regulations. Such spills will be reported in the post-construction compliance reports.

- No clearing of vegetation and scraping, or digging, of soil shall occur in the avoided/preserve area.

Mitigation Measure 3.2-1c- Special-Status Species Surveys and Implementation of a Special-Status Species Avoidance/Mitigation Plan

Proposed Project Alternative and Reduced Footprint Alternative - To mitigate for **Impact 3.2-1**, direct and indirect impacts to threatened, endangered, and candidate species, surveys for potentially occurring federal and state special-status species or their habitat would be conducted using protocol acceptable to the regulatory agencies with authority over these species. If any of the special-status species or their habitat are indicated, a detailed plan which describes the specific methods to be implemented to avoid and/or mitigate any project impacts upon special-status species to a less than significant level will be required. A detailed Special-Status Species Avoidance/Mitigation Plan shall be prepared in consultation with the USFWS and CDFG and shall emphasize a multi-species approach to the maximum extent possible.

Where project impacts include taking of a federally listed species, a Section 10 Incidental Take Permit or a Biological Opinion resulting from Section 7 Consultation with another Federal Agency shall be obtained from the USFWS and permit conditions implemented, pursuant to the federal Endangered Species Act.

Where project impacts include taking of a state listed species, an Incidental Take Permit shall be obtained from the CDFG and permit conditions implemented, pursuant to the California Endangered Species Act.

No Action Alternative –Under the No Action Alternative, it is assumed no special-status species surveys would be conducted and no avoidance/mitigation would be conducted.

The implementation of **Mitigation Measure 3.2-1a, Mitigation Measures 3.2-1b, and Mitigation Measure 3.2-1c** would be anticipated to reduce impacts at the population level such that impacts related to loss of populations of vernal pool species would be **less than significant** under the Proposed Project Alternative and the Reduced Footprint Alternative.

IMPACT3.2-2 – A net loss in the habitat value of sensitive biological habitat. *A net loss in the habitat value of a sensitive biological habitat or area of special biological significance*

Proposed Project Alternative - Habitat within the project site consists of non-native annual grassland, vernal pools, and landscaped areas. Among these, only vernal pools would be considered sensitive biological habitat or areas of special biological significance. The Conceptual Strategy specifically notes that the preservation of vernal pool complexes and corridors for Morrison Creek and Laguna Creek is important in the reasonable protection and conservation of federally threatened and endangered species under the ESA and in avoiding and minimizing impacts to waters of the U.S. under the CWA.

The Proposed Project Alternative would result in direct impacts to vernal pool habitat value from the loss of 17.53 acres of vernal pool habitat, a sensitive biological habitat. Indirect effects would occur through the loss or alteration of upland habitat areas that are important in maintaining the habitat value of vernal pools. Short-term indirect effects could include increased sediment, pollutants, and nutrients to wetlands downstream, and long-term indirect effects could include introduction of invasive plants, feral cats and other non-native predators to sensitive species, and introduction of hazardous and non-hazardous waste and materials.

Therefore, **significant direct and indirect** impacts to habitat value would result from the Proposed Project Alternative.

Reduced Footprint Alternative- Under the Reduced Footprint Alternative, impacts to habitat value would be less than under the Proposed Project Alternative, as vernal pool habitat near the headwaters of Laguna Creek would be preserved. It is assumed that loss of vernal pool habitat would be one-third less than under the Proposed Project Alternative. However, there would be direct loss of vernal pool habitat and indirect effects to upland habitat within the project site. As this vernal pool habitat supports threatened and endangered species, loss of this habitat would be considered a significant impact.

Therefore, **significant direct and indirect** impacts to habitat value would result from the Reduced Footprint Alternative.

No Action Alternative - Because the No Action Alternative would not entail construction within 25 feet of vernal pools within the project site, **no direct** impacts to the value of sensitive biological habitat or areas of special biological significance are anticipated. However, **indirect significant** impacts would occur to vernal pool habitat value.

Mitigation Measure 3.2-2a Implement a Compensatory Mitigation Plan for Impacts to Waters of the U.S., including Wetlands

Compensatory mitigation for impacts to waters of the U.S. is required to offset the loss associated with the DA permit. The goal is to achieve at least no net loss of aquatic resource functions. As stipulated in BOs prepared for the six projects permitted by the USACE, with the implementation of this mitigation, the USFWS determined the six projects were not likely to jeopardize the continued existence of the vernal pool fairy shrimp and the vernal pool tadpole shrimp (USFWS, 2004a,b; 2005b; 2006a,b,c,d). The conclusions of these BOs were based on an analysis of the effects of the individual projects in the context of the status of the species and environmental baseline at the time of issuance.

Mitigation Measure 3.2-2b- Compensatory Vernal Pool Habitat Creation and Preservation - This mitigation measure would also mitigate for **Impact 3.2-2**, impacts to habitat value, under both the Proposed Project Alternative and Reduced Footprint Alternative. Off-site mitigation could occur at Gill Ranch providing the plan is approved. Due to its large size, potential for restoration, and proximity to other conservation areas, the Preserve is considered to be an ideal location for mitigation of this type. Laguna Creek runs through the Preserve, and has been identified as having a high habitat value in the Conceptual Strategy.

Mitigation Measure 3.2-2c- Best Management Practices (BMPs) to Protect Vernal Pools During Construction

To reduce potential impacts to vernal pools that are to be preserved, the following Best Management Practices (BMPs) would be implemented during construction:

- The project proponent shall include a copy of the BO within its solicitations for construction of the proposed project, making the prime contractor responsible for implementing all requirements and obligations included within the BO, and to educate and inform all other contractors involved in the project as to the requirements of the BO. The project proponents shall make the terms and conditions in the BO a required item in all contracts for the project that are issued by the County to all contractors. The project proponents shall provide the Division Chief of Endangered Species (Central Valley) at the Sacramento Fish and Wildlife Office with a hardcopy of the contract(s) for this project at least ten (10) working days before it is accepted or awarded.

- At least 30 calendar days prior to initiating construction activities, the project proponents shall submit the names and curriculum vitae of the biological monitor(s) for the project.

- A USFWS-approved biologist must be on-site during all construction-related activities that occur within 250 feet of vernal pool crustacean habitat, and that could result in the take of these federally-listed species. The biologist will have the authority to halt any action that might result in take of listed species. If the biologist exercises this authority, the USFWS and the CDFG shall be notified by telephone and letter within one (1) working day.

- A Worker Environmental Awareness Training Program for construction personnel shall be conducted before the commencement of construction. The program shall provide workers with information on their responsibilities with regard to the listed vernal pool crustaceans, an overview of the life-history of the species, information on take prohibitions, and an explanation of the relevant terms and conditions of the BO. Written documentation of the training must be submitted to the Sacramento Fish and Wildlife Office within three (3) working days of the completion of instruction.

- Prior to groundbreaking, high-visibility fencing that is at least 4 feet tall shall be placed along the boundaries of the construction zone to clearly mark this zone and to prevent construction vehicles or personnel from straying onto adjacent off-site habitat. The fencing shall be established at a minimum distance of250 feet from the edge of the vernal pools. Such fencing will be inspected by the on-site biologist at the beginning of each work day and maintained in good condition. The fencing may be removed only when the construction of the project is completed.

- During construction operations, the number of access routes, number and size of staging areas, and the total area of the proposed project activity will be limited to the minimum necessary. Routes and boundaries will be clearly demarcated. Movement of heavy equipment to and from the project site will be restricted to established roadways to minimize habitat disturbance, and all vehicle traffic on access road will observe a speed limit of 20 miles per hour. The stockpiling of construction materials, portable equipment, vehicles, and supplies will be restricted to the designated construction staging areas and exclusive of the wetland avoidance areas. All fueling, cleaning, and maintenance of vehicles and other equipment will occur only within designated areas and at least 250 feet away from any wetland habitats. The applicant will ensure contamination of habitat does not occur during such operations. All workers will be informed of the importance of preventing spills and appropriate measures to take should a spill occur. Any spills or hazardous materials will be cleaned up immediately. Such spills will be reported in the post-construction compliance reports.

- To control erosion during and after implementation of the project, the applicant will implement BMPs as identified by the Central Valley Regional Water Quality Control Board. Erosion control measures and BMPs, which retain soil or sediment, runoff from dust control, and hazardous materials on the construction site and prevent these from entering the vernal pool complexes, will be placed, monitored, and maintained throughout the construction operations. These measures and BMPs may include, but are not limited to, silt fencing, sterile hay bales, vegetative strips, hydroseeding, and temporary sediment disposal. A Storm water Pollution Prevention Plan (SWPPP) described in the BO shall include these and any other measures necessary to prevent the discharge of contaminated runoff onto adjacent offsite wetland habitats.

- All heavy equipment, vehicles, and supplies will be stored at the designated staging area at the end of each work period. The stockpiling of construction materials, portable equipment, vehicles, and supplies will be restricted to the designated construction staging areas and exclusive of the

open space/wetland preserve and offsite wetland avoidance areas. Staging areas for construction equipment will be located so that spills of oil, grease or other petroleum by-products will not be discharged into any watercourse or sensitive habitat. All fueling, cleaning, maintenance, and staging of vehicles and other equipment will occur only within designated areas and at least 250 feet away from the open space/wetland preserve and any off-site vernal pool crustacean habitats. All machinery will be properly maintained and cleaned to prevent spills and leaks. All workers will be informed of the importance of preventing spills and appropriate measures to take should a spill occur. Any spills or hazardous materials will be cleaned up immediately in accordance with applicable local, state and/or federal regulations. Such spills will be reported in the post-construction compliance reports.

- No clearing of vegetation and scraping, or digging, of soil shall occur in the avoided/preserve area.

With implementation of the proposed Mitigation Measures 3.2-2a, b and c, direct and indirect impacts to habitat value of vernal pools under the Proposed Project Alternative and the Reduced Footprint Alternative would be **less than significant**.

IMPACT3.2-3 – Substantial impedance to the movement or migration of fish or wildlife. *Substantial impedance to the movement or migration of wildlife resulting in substantial loss to the population of any native wildlife species*

Proposed Project Alternative - The Proposed Project Alternative would result in the loss of vernal pool habitat and upland grassland habitat in the project site. Historically, these vernal pool complexes provided dispersal of vernal pool crustaceans during large scale flooding which allowed these species to colonize different vernal pools and vernal pool complexes. However, due to the alteration of natural hydrology through flood control measures, dispersal of vernal pool species now occurs primarily through the activities of waterfowl and shorebirds (USFWS, 2004a,b; 2005b; 2006a,b,c,d).

The loss of vernal pool habitat and hydrologic isolation of avoided complexes within the project site would result in reduced dispersal of vernal pool species. This would be offset by the creation of large preserves that would be permanently protected and managed as vernal pool habitat. Therefore, impacts to wildlife migration would be **less than significant** under the Proposed Project Alternative.

Reduced Footprint Alternative - The loss of vernal pool habitat within the project site under the Reduced Footprint Alternative would result in reduced dispersal of vernal pool species, albeit less than that under the Proposed Project Alternative, with the preservation of vernal pool habitat near the headwaters of Laguna Creek. This loss would be further offset by the creation of large preserves that would be permanently protected and managed as vernal pool habitat. Therefore, impacts to wildlife migration would be **less than significant** under the Reduced Footprint Alternative.

No Action Alternative - The project site is located in an area of open space in close proximity to several wetland preserves. This open space is recognized by the South Sacramento Habitat Conservation Plan (SSHCP) as valuable habitat. The project site is located within the Urban Services Boundary, and substantial development has already occurred within this area which reduces its value as a migration corridor for wildlife. As additional future development is anticipated to occur, the project site would play a less significant role in the migration of wildlife species compared to the open space areas to the south and east of the project site.

Although the hydrologic connection to habitat north and south of the project site could be maintained, there would be some fragmentation of habitat for wildlife that currently use this corridor. Therefore, **less than significant impacts** on the migration of wildlife are anticipated.

Mitigation Measure 3.2-3a - Compensatory Vernal Pool Habitat Creation and Preservation would also mitigate for **Impact 3.2-3**, impacts to migration of wildlife, under both the Proposed Project Alternative and Reduced Footprint Alternative. Through the creation and preservation of vernal pool habitat off-site, movement of vernal pool species would not be substantially impeded, as dispersal of vernal pool species now occurs primarily through the activities of waterfowl and shorebirds.

Therefore, impacts to migration of wildlife under the Proposed Project Alternative and the Reduced Footprint Alternative would be **less than significant** with mitigation.

Proposed Project Alternative and Reduced Footprint Alternative- Mitigation Measure 3.2-3 would be required to mitigate for potential direct and indirect effects on raptors such as white-tailed kites and red-tailed hawks that have been observed nesting within the project site and to address **Impact 3.2-3- Migration of Wildlife** under both the Proposed and Reduced Footprint Alternatives.

Prior to each phase of grading and construction, a preconstruction survey will be performed between April 1 and July 31 to determine if active raptor nesting is taking place in the area. If nesting is observed, consultation with CDFG will occur in order to determine the protective measures which must be implemented for the nesting birds of prey. If nesting is not observed, further action is not required.

With implementation of **Mitigation Measure 3.2-3a**, impacts related to movement or migration of raptors under both the Proposed and Reduced Footprint Alternatives would be **less than significant**.

No Action Alternative –No mitigation occurs under mitigation measure 3.2-3 under the No Action Alternative.

IMPACT3.2-4 – Substantial population loss of any native fish, wildlife, or vegetation. *Substantial loss to the population of any native fish, wildlife, or vegetation. For purpose of this analysis, substantial is defined as a change in population or habitat that is detectable over natural variability for a period of five years or more*

Proposed Project Alternative - The Proposed Project Alternative would result in substantial loss to populations of vernal pool plant and animal species, including special-status vernal pool crustaceans. Direct effects would occur through displacement and mortality of these species and permanent loss of vernal pool habitat. Indirect effects would occur through loss or alteration of upland and swale areas that support aquatic habitat. Short-term indirect effects could include increased sediment, pollutants, and nutrients to wetlands downstream, and long-term indirect effects could include introduction of invasive plants, feral cats and other non-native predators to sensitive species, and introduction of hazardous and non-hazardous waste and materials.

In addition, direct and indirect impacts could occur to wildlife species, including several state special-status raptors such as the Swainson's Hawk that utilize upland grassland habitat. Loss of trees and other vegetation could result in impacts to raptors during the nesting season. Impacts to native trees, including oaks, could also occur.

Therefore, **significant** impacts related to population loss would result under the Proposed Project Alternative.

Reduced Footprint Alternative - Under the Reduced Footprint Alternative, there would be less loss of populations of vernal pool plant and animal species than under the Proposed Project Alternative. However, direct effects would still occur through displacement and mortality of vernal pool species and permanent loss of vernal pool habitat. Indirect effects would occur through loss or alteration of upland habitats and swale areas that support aquatic habitat.

In addition, loss of upland grassland habitat could impact wildlife species that utilize this grassland. Loss of trees and other vegetation could result in impacts to migratory birds, including raptors, during the nesting season. Impacts to native trees, including oaks, could also occur.

Therefore, **significant** impacts related to population loss would result under the Reduced Footprint Alternative.

No Action Alternative - As described in Section 3.2.1, vegetation and wildlife within the project site consists of those species that occur in non-native annual grasslands with vernal pool complexes. Under the No Action Alternative, no vernal pools would be filled and no work would be conducted within 25 feet of vernal pools. Thus, there would be **no direct** impact on populations of plant or wildlife species found in vernal pools. However**, indirect significant and unavoidable** impacts to these populations would be anticipated.

In addition, loss of grassland habitat would occur under the No Action Alternative. Although this non-native grassland habitat is not considered a sensitive habitat, there would be direct and indirect impacts to wildlife species that utilize this grassland, as even small-scale development would displace some animals. Loss of trees and other vegetation could result in impacts to migratory birds, including raptors, during the nesting season. Impacts to native trees, including oaks, could also occur. Therefore, **direct and indirect significant and unavoidable** impacts to populations of native fish, wildlife, or vegetation would be anticipated.

Mitigation Measure 3.2-4a - Compensatory Vernal Pool Habitat Creation and Preservation would also mitigate for **Impact 3.2-4**, impacts to population loss, under both the Proposed Project Alternative and Reduced Footprint Alternative. The creation and preservation of vernal pool habitat off-site would reduce the numbers of vernal pool plant and animal species lost such that effects at the population level would be reduced.

Mitigation Measure 3.2-4b- Best Management Practices (BMPs) to Protect Vernal Pools During Construction

To reduce potential impacts to vernal pools that are to be preserved, the following Best Management Practices (BMPs) would be implemented during construction:

- The project proponent shall include a copy of the BO within its solicitations for construction of the proposed project, making the prime contractor responsible for implementing all requirements and obligations included within the BO, and to educate and inform all other contractors involved in the project as to the requirements of the BO. The project proponents shall make the terms and conditions in the BO a required item in all contracts for the project that are issued by the County to all contractors. The project proponents shall provide the Division Chief of Endangered Species (Central Valley) at the Sacramento Fish and Wildlife Office with a hardcopy of the contract(s) for this project at least ten (10) working days before it is accepted or awarded.

- At least 30 calendar days prior to initiating construction activities, the project proponents shall submit the names and curriculum vitae of the biological monitor(s) for the project.

- A USFWS-approved biologist must be on-site during all construction-related activities that occur within 250 feet of vernal pool crustacean habitat, and that could result in the take of these federally-listed species. The biologist will have the authority to halt any action that might result in take of listed species. If the biologist exercises this authority, the USFWS and the CDFG shall be notified by telephone and letter within one (1) working day.

- A Worker Environmental Awareness Training Program for construction personnel shall be conducted before the commencement of construction. The program shall provide workers with information on their responsibilities with regard to the listed vernal pool crustaceans, an overview of the life-history of the species, information on take prohibitions, and an explanation of the relevant terms and conditions of the BO. Written documentation of the training must be submitted to the Sacramento Fish and Wildlife Office within three (3) working days of the completion of instruction.

- Prior to groundbreaking, high-visibility fencing that is at least 4 feet tall shall be placed along the boundaries of the construction zone to clearly mark this zone and to prevent construction vehicles or personnel from straying onto adjacent off-site habitat. The fencing shall be established at a minimum distance of 250 feet from the edge of the vernal pools. Such fencing will be inspected by the on-site biologist at the beginning of each work day and maintained in good condition. The fencing may be removed only when the construction of the project is completed.

- During construction operations, the number of access routes, number and size of staging areas, and the total area of the proposed project activity will be limited to the minimum necessary. Routes and boundaries will be clearly demarcated. Movement of heavy equipment to and from the project site will be restricted to established roadways to minimize habitat disturbance, and all vehicle traffic on access road will observe a speed limit of 20 miles per hour. The stockpiling of construction materials, portable equipment, vehicles, and supplies will be restricted to the designated construction staging areas and exclusive of the wetland avoidance areas. All fueling, cleaning, and maintenance of vehicles and other equipment will occur only within designated areas and at least 250 feet away from any wetland habitats. The applicant will ensure contamination of habitat does not occur during such operations. All workers will be informed of the importance of preventing spills and appropriate measures to take should a spill occur. Any spills or hazardous materials will be cleaned up immediately. Such spills will be reported in the post-construction compliance reports.

- To control erosion during and after implementation of the project, the applicant will implement BMPs as identified by the Central Valley Regional Water Quality Control Board. Erosion control measures and BMPs, which retain soil or sediment, runoff from dust control, and hazardous materials on the construction site and prevent these from entering the vernal pool complexes, will be placed, monitored, and maintained throughout the construction operations. These measures and BMPs may include, but are not limited to, silt fencing, sterile hay bales, vegetative strips, hydroseeding, and temporary sediment disposal. A Storm Water Pollution Prevention Plan (SWPPP) described in the BO shall include these and any other measures necessary to prevent the discharge of contaminated runoff onto adjacent offsite wetland habitats.

- All heavy equipment, vehicles, and supplies will be stored at the designated staging area at the end of each work period. The stockpiling of construction materials, portable equipment, vehicles, and supplies will be restricted to the designated construction staging areas and exclusive of the open space/wetland preserve and offsite wetland avoidance areas. Staging areas for construction equipment will be located so that spills of oil, grease or other petroleum by-products will not be discharged into any watercourse or sensitive habitat. All fueling, cleaning, maintenance, and staging of vehicles and other equipment will occur only within designated areas and at least 250 feet away from the open space/wetland preserve and any off-site vernal pool crustacean habitats. All machinery will be properly maintained and cleaned to prevent spills and leaks. All workers will be informed of the importance of preventing spills and appropriate measures to take should a spill occur. Any spills or hazardous materials will be cleaned up immediately in accordance with

applicable local, state and/or federal regulations. Such spills will be reported in the post-construction compliance reports.

- No clearing of vegetation and scraping, or digging, of soil shall occur in the avoided/preserve area.

Mitigation Measure 3.2-4c- Perform Nesting Bird Surveys for Swainson's Hawk and Implement Swainson's Hawk Mitigation Plan

To mitigation for loss of Swainson's hawk foraging habitat, nesting bird surveys shall be conducted for active nest sites within the project site prior to construction. Based on the results of these surveys, one of the following shall be implemented:

a) For projects within a one mile radius of an active nest site, the project proponent shall preserve 1.0 acre of similar habitat for each acre lost within a ten mile radius of the project site. For projects within a one to five mile radius of an active nest site, the project proponent shall preserve 0.75 acre of similar habitat for each acre lost within a ten mile radius of the project site. For projects within a 5 to 10 mile radius of an active nest site, the project proponent shall preserve 0.5 acre of similar habitat for each acre lost within a ten mile radius of the project site. This land shall be protected through fee, title or conservation easement (acceptable to CDFG).

b) The project proponent shall, to the satisfaction of CDFG, prepare and implement a Swainson's hawk mitigation plan that will include preservation of Swainson's hawk foraging habitat.

c) The project proponent shall submit payment of a Swainson's hawk impact mitigation fee per acre impacted to the Department of Planning and Community Development in the amount as set forth in Chapter 16, 130 of the Sacramento County Code as such may be amended from time to time and to the extent that said Chapter remains in effect.

d) The project proponent shall implement mitigation measures pursuant to the Swainson's Hawk Mitigation program, administered by the Sacramento County Department of Planning and Community Development.

Mitigation Measure 3.2-4d – Perform Nesting Bird Surveys and Implement Protective Measures, if Necessary

Prior to each phase of grading and construction, a preconstruction survey shall be performed between April 1 and July 31 to determine if active raptor nesting is taking place in the area. If nesting is observed, consultation with CDFG shall occur in order to determine the protective measures which must be implemented for the nesting birds of prey. If nesting is not observed, further action is not required.

With implementation of **Mitigation Measures 3.2-4a – 3.2-4d**, impacts related to population loss under the Proposed Project Alternative and the Reduced Footprint Alternative would be **less than significant** with mitigation.

Mitigation Measure 3.2-4e - Perform Tree Survey and Avoid or Replace Native Oak Trees and Other Native Trees Scattered Throughout the Project Sites

Proposed Project Alternative and Reduced Footprint Alternative - Mitigation Measure 3.2-4b would be required to mitigate for potential direct and indirect effects on any native oak or other landmark tree species to address **Impact 3.2-4- Population Loss** under both the Proposed and Reduced Footprint Alternatives.

A survey identifying the specific type, size, and location of all existing on-site trees will be conducted. Existing on-site trees will be protected and preserved to the maximum extent feasible. Consistent with General Plan policies, the removal of any native oak tree measuring six inches or greater in diameter at breast height (dbh) and the removal of any non oak native tree (excluding cottonwoods and willows) other non-native landmark size trees measuring 19 inches or greater dbh necessary to accommodate future development will be mitigated by planting replacement trees (in-kind species on an inch-for-inch basis) within the project site.

With implementation of **Mitigation Measure 3.2-4e**, impacts related to loss of populations of native trees under both the Proposed and Reduced Footprint Alternatives would be **less than significant**.

No Action Alternative –No mitigation occurs under mitigation measure 3.2-4 under the No Action Alternative.

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3.3 HYDROLOGY, WATER QUALITY, WATER SUPPLY, AND GROUNDWATER

Information presented for the affected environment for hydrology, water quality, water supply, and groundwater is based upon studies prepared for the Sunrise-Douglas Community Plan/Sunridge Specific Plan (Sunridge Specific Plan) as well as recent surface and groundwater management plans pertaining to Zone 40, and corresponding environmental documents. This section also includes a description of the relationship of the project to recent decisions in California case law with regard to long-term water supplies.

The water supply plan proposes sole reliance on the North Vineyard Well Field to serve near-term development, and conjunctive use supply over the long-term through the Zone 40 system. The North Vineyard Well Field is located off-site, approximately five miles southwest of the Sunridge Specific Plan area near the intersection of Florin and Excelsior Roads. The water is conveyed through a pipe network to the Sunridge Specific Plan area. The water supply plan is intended to avoid the possibility of contamination of the North Vineyard Well Field by known contaminant plumes, and to prevent groundwater extraction from having an effect on the migration of known contaminant plumes.

A Surface Water Supply Investigation (SWSI) evaluated a range of water demand scenarios which reflect logical increments of water demand tied to existing and project water demand from the Proposed Project Alternative, and adjacent developments. Water service to the Sunridge Specific Plan area would be provided by the Sacramento County Water Agency, which is governed by the Sacramento County Board of Supervisors. Subsequent to preparation of the SWSI, the County's Water Resources Division (WRD) prepared a water supply investigation which guided the development of the SWSI water demand scenarios. The WRD also conducted a water supply assessment to determine if sufficient supplies are available (County of Sacramento, 2001). The assessment identified and reviewed eight replacement water supply alternatives, and determined that the North Vineyard Well Field was the only alternative that could be implemented in the near-term, meet regulatory requirements, be consistent with County water policy, and be able to provide a long-term reliable source of water. According to the City of Rancho Cordova Planning Department, the City gave tentative reapproval to the Sunridge Specific Plan, which includes all the Sunridge Properties, based on the County's determination of the availability of water (Pers. Comm., Mr. Bill Campbell, City of Rancho Cordova Planning Department, June 2010).

Ultimately, the proposed well field would be integrated into the planned Zone 40 surface and groundwater conjunctive use program prescribed by the Water Forum Plan. Surface and groundwater supply considerations are described more fully in Section 3.3.2, Affected Environment.

3.3.1 AREA OF ANALYSIS

The area of analysis for hydrology, water quality, water supply, and groundwater is defined as the land and water bodies within the project sites, as well as Lower Morrison Creek and Upper Laguna Creek downstream of the project sites, the Zone 40 planning area, and the Central Sacramento County Groundwater Basin (Central Basin) (Figure 3.3-1). The Sacramento County Water Agency (SCWA) Zone 40 planning area encompasses most of the Central Basin. The North Vineyard well field, the immediate water supply source, is located 5 miles southwest of the project sites. The long-term water supply being developed for the entire Zone 40 area is a diversion from the Sacramento River at Freeport. The area of analysis includes these off-site water supply sources and facilities.

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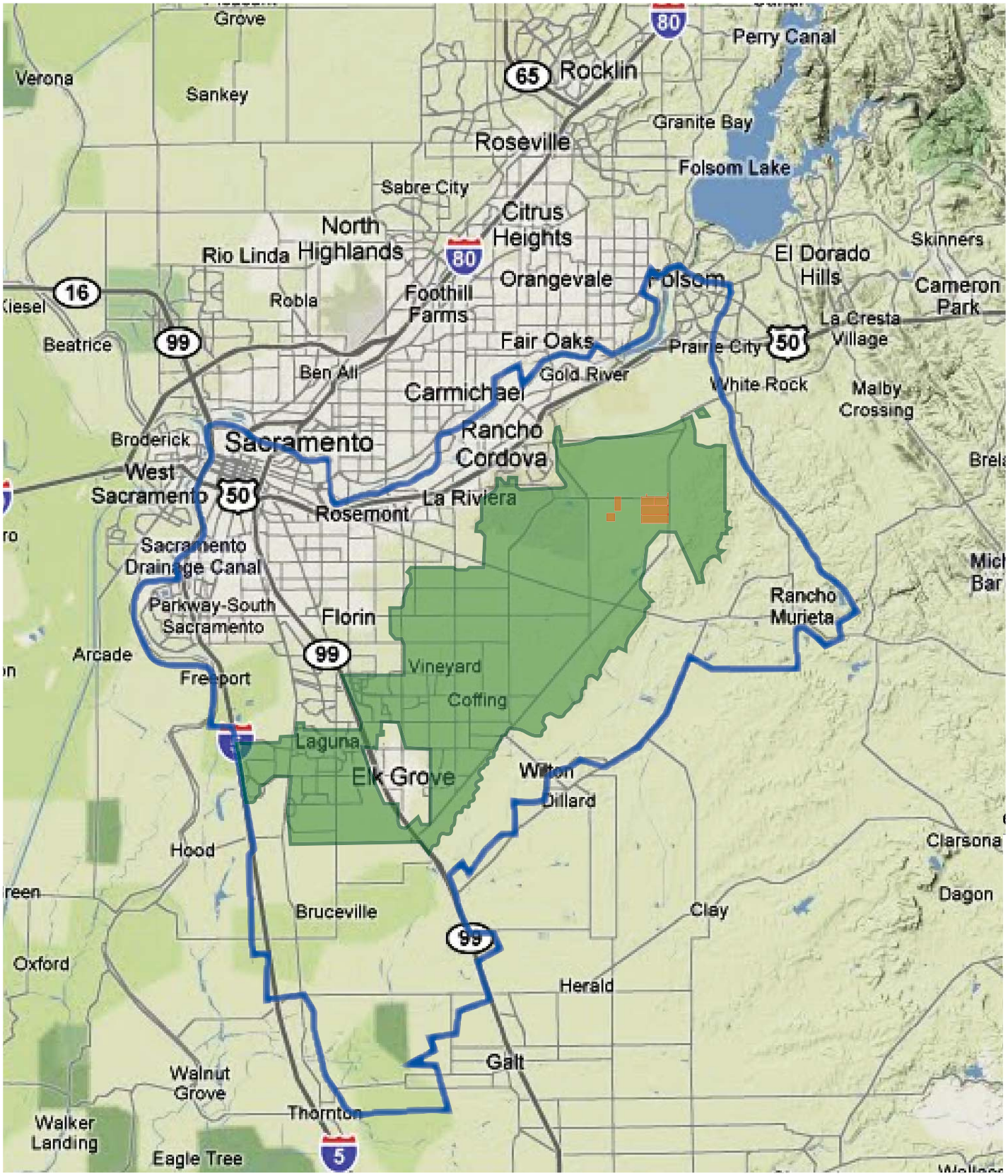

Figure 3.3-1. Surface and Groundwater Planning Boundaries

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3.3.2 AFFECTED ENVIRONMENT

HYDROLOGY

Lower Morrison Creek and Upper Laguna Creek cross the site from northeast to southwest. From the headwaters, Morrison Creek conveys storm flows southwest through the project area towards Mather Field. Laguna Creek conveys storm flows southwest towards the junction of Sunrise Boulevard and Jackson Highway. Downstream, these two waterways receive urban runoff from large portions of Sacramento County, as well as the City of Sacramento, and convey stormwater to the Beach-Stone Lakes Wildlife Area in western Sacramento County to the Sacramento River.

The hydrologic regime on the site is dominated by seasonal stormwater run-off and precipitation, primarily between November and March. Throughout the project sites, drainage occurs to the south and southwest through surface or near surface flows. Hydrologic features identified throughout the project sites include vernal pools, depressional seasonal wetlands, riverine seasonal wetlands, and intermittent drainages.

FOLSOM SOUTH CANAL

The Folsom South Canal, which conveys American River water from Lake Natoma to 27 miles to the south, is located immediately west of Sunrise Boulevard, outside the area of analysis. Where the various branches of Morrison Creek encounter the canal, concrete overchutes convey flows over the canal. The upper (northern) branch of Morrison Creek crosses the canal by means of a 14 foot x 9 foot (width x height) overchute with a capacity of 720 cubic feet per second (cfs), and flows to Mather Lake. The lower (southern) branch of Morrison Creek crosses the canal via overchutes of 12 foot x 6 foot and 8 foot x 4.25 foot with capacities of 400 cfs and 175 cfs, respectively. Existing 100-year peak flows exceed the capacities of all three overchutes and any flows exceeding the capacity of the overchutes spill into the Folsom South Canal. The overchutes present a constraint in development east of Sunrise Boulevard because of their limited capacities. Enlargement of the overchutes was determined not to be feasible; therefore, the ultimate drainage system cannot exceed the capacities of the overchutes.

Where the Laguna Creek channel encounters the Folsom South Canal, the canal conveys flows under the creek by means of a double 16 foot x 16 foot concrete siphon structure. Development east of Sunrise Boulevard in the Laguna Creek drainage is restricted to the existing conditions 100-year flows, consistent with the County Water Resources Department Upper Laguna Creek Drainage Master Plan.

SURFACE WATER QUALITY

Currently, there are no water quality data available for the streams within the project area. The cattle grazing within the study area have access to the wetlands and would be expected to increase turbidity and fecal contaminants to the wetlands.

GROUNDWATER QUALITY

Within the Central Basin, the shallow aquifer generally provides the highest quality groundwater, while the deeper aquifer typically requires treatment for the reduction of iron and manganese concentrations that exceed California drinking water secondary standards related to aesthetic concerns. However, portions of the Central Basin have been contaminated and do not meet the California primary drinking water quality standards. This groundwater contamination is described in Section 3.10, Hazardous, Toxic, and Radioactive Waste. Groundwater contamination and the potential for movement of contaminant plumes

in the Aerojet and Mather areas severely limits the opportunity to develop additional groundwater pumping facilities, and wells cannot be constructed in developing areas, including the project sites, located above or near the contaminant plume.

SURFACE WATER SUPPLY

The SCWA has developed the Freeport Regional Water Project to acquire additional surface water entitlements to enable conjunctive use of groundwater in Zone 40, and to provide facilities through which SCWA can deliver existing and anticipated surface water entitlements to the Zone 40 area. The Freeport Regional Water Project, the long-term water supply source identified in the 2005 Water Supply Master Plan to serve Zone 40, diverts water from the Sacramento River for joint use by SCWA and the East Bay Municipal Utilities District (EBMUD) (MWH, 2005). The Freeport Regional Water Project includes both surface and groundwater supplies, but relies primarily on a variety of surface water supplies (i.e., "Fazio," Sacramento Municipal Utility District (SMUD) 1 and 2, American River Place of Use (POU) water, appropriative, and other water supplies) for direct supply. The potential shortages inherent with the planned surface water supplies are handled by a redundancy in facilities (i.e., groundwater production facilities). The Freeport Regional Water Project intake facility was completed in early 2010. The Vineyard Surface Water Treatment Plant is under construction with an expected completion date of November 2011.

The SCWA and Sacramento County concluded that reliance solely on groundwater to serve development authorized by the 1993 Sacramento County General Plan will deplete the Central Basin, resulting in shallow wells drying up, degradation of groundwater quality, increased pumping costs, land subsidence, and potential changes to local flood plains, and that the provision of surface water is necessary to meet the anticipated demand. Relying solely on groundwater for water supply under buildout conditions of the Sacramento County General Plan would cause groundwater levels to decline an additional 160 feet. To avoid adversely affecting groundwater by maintaining the sustainable yield of the Central Basin, as stipulated in the Water Forum Agreement, it is necessary to use surface water supplies in conjunction with available groundwater supplies to meet the projected buildout demands in Zone 40 (Jones & Stokes, 2003).

According to the Draft EIR/EIS for the Freeport Regional Water Project, as Zone 40 approaches buildout conditions in the future, more reliance on other sources of water or methods of supplementing groundwater yields will be necessary to comply with long-term average operational groundwater yield limitations while meeting build-out demand (Jones & Stokes, 2003). Possible options for meeting this demand could involve the following actions:

- Supplementing natural recharge with existing supplies during wet years,
- Acquiring water through transfers from other water users upstream of SCWA diversion points,
- Using the City of Sacramento's American River entitlements in that area of Zone 40 that is within the City's authorized American River Place of Use,
- Using reclaimed water from the Sacramento Regional Wastewater Treatment Plant (SRWWTP) on an exchange basis, or
- Acquiring additional appropriated water.

GROUNDWATER SUPPLY WITHIN SCWA ZONE 40

Sacramento County water purveyors, including Zone 40 water purveyors, draw groundwater from both shallow and deep aquifer systems. Private domestic wells in the analysis area draw from the shallow aquifer.

Groundwater in the Central Basin is classified as occurring in a shallow aquifer zone or in an underlying deeper aquifer zone. Within Zone 40, the shallow aquifer extends to approximately 200-300 feet below the ground surface; in general, the water quality in this zone is considered good, except for the occurrence of low levels of arsenic in some locations. The shallow aquifer is typically used for private domestic wells and requires no treatment unless naturally occurring arsenic is encountered.

The deep aquifer is semiconfined by and separated from the shallow aquifer by a discontinuous clay layer. The base of the deep aquifer averages approximately 1,400 feet below the ground surface. Water at the base of the deep aquifer has higher concentrations of total dissolved solids. Iron and manganese typically found in the deep aquifer are at levels requiring treatment. Groundwater used in Zone 40 is supplied from both the shallow and deeper aquifer systems.

Groundwater in the analysis area moves from sources of recharge to areas of discharge. Most recharge to the local aquifer system occurs along active stream channels where extensive sand and gravel deposits exist. Consequently, the highest groundwater elevations typically occur near the American River and Sacramento River channels, and to a lesser extent, the Cosumnes River channel. Other sources of recharge within the analysis area include subsurface recharge from fractured geologic formations to the east, as well as deep percolation from applied surface water and precipitation.

Groundwater elevations through much of the Central Basin generally declined from the 1950s to about 1980 by about 20 to 30 feet. From 1980 to 1983, water levels recovered by about 10 feet and remained stable until 1987, which was the beginning of the 1987 to 1992 drought period. From 1987 to 1995, water levels declined by about 15 feet. From 1995 to 2003, most water levels recovered to higher levels than before the 1987 to 1992 drought period. Much of this recovery can be attributed to increased use of surface water in the Central Basin and the fallowing of previously irrigated agricultural lands for development of urban uses. In some locations, this recovery continued through 2008 (SCGA, 2008).

Limited groundwater recharge occurs in the area. Groundwater recharge that does occur on the project sites is primarily along the Morrison Creek drainage, and along an ephemeral drainage in the northeast section of the project sites (Douglas Road 98). Soils and underlying hardpan on the project sites result in little infiltration from the remaining undeveloped portions of the Sunridge Properties. Aquifer recharge from the project sites is minimal because of these site conditions.

3.3.3 REGULATORY FRAMEWORK

3.3.3.1 FEDERAL LAWS, REGULATIONS, POLICIES, AND PLANS

CLEAN WATER ACT

Federal and state laws protect water quality from point and nonpoint sources. The federal Clean Water Act (CWA) requires states to adopt water quality standards and to submit those standards for approval by the US EPA. For point source discharges to surface water, the CWA authorizes the USEPA or approved states to administer the National Pollutant Discharge Elimination System (NPDES) Program. In California, the State Water Resources Control Board (SWRCB) and nine Regional Water Quality Control Boards (RWQCBs) administer many of the CWA's provisions.

When the CWA was enacted in 1972, point source pollution was considered the most significant problem affecting water quality in rivers and streams, and extensive programs were established to implement point source controls. Nonpoint source pollution is now recognized as the leading cause of water quality impairment in California (CVRWQCB, 2004). Past SWRCB and RWQCB programs tended to be directed at end-of-pipe facilities and other point sources. However, with diffuse nonpoint sources of pollutants, a new regulatory approach was created, changing the focus from site-specific problems to a watershed-based approach.

It is the responsibility of the SWRCB and RWQCBs to preserve and enhance the quality of the State's waters through the development of water quality control plans and the issuance of waste discharge requirements. The RWQCBs regulate point source discharges (i.e., discharges from a discrete conveyance) under the Porter-Cologne Act primarily through issuance of NPDES and waste discharge requirement permits. NPDES permits serve as waste discharge requirements for surface water discharges. A NPDES permit is required for municipal, industrial and construction discharges of wastes to surface waters. Waste discharge requirements and NPDES permits within the Sacramento-San Joaquin Delta falls under the jurisdiction of the Central Valley Regional Water Quality Control Board (CVRWQCB).

Anyone discharging or proposing to discharge materials to land in a manner that allows infiltration into soil and percolation to groundwater (other than to a community sanitary sewer system regulated by an NPDES permit) must file a report of waste discharge to the local RWQCB (or receive a waiver). Following receipt of a report of waste discharge, the RWQCB issues waste discharge requirements that prescribe how the discharge is to be managed.

Section 401 of the CWA requires certification from the state to ensure compliance with state water quality standards for any activity that may result in a discharge to a water body. A project that would result in the discharge of any pollutant, including soil, into waters and wetlands requires coordination with the appropriate RWQCB to obtain Section 401 certification.

3.3.3.2 STATE LAWS, REGULATIONS, POLICIES, AND PLANS

The Porter-Cologne Water Quality Control Act is the principal state law water quality protection statute in California. The Porter-Cologne Act established a comprehensive program to protect water quality and the beneficial uses of surface water and groundwater. The statute establishes the SWRCB and nine RWQCBs which are charged with implementing its provisions and have primary responsibility for protecting water quality in California. The SWRCB generally provides statewide permitting, program guidance and oversight, allocates funds, and reviews RWQCB decisions. The RWQCBs have primary responsibility for individual permitting, inspection, and enforcement actions within each respective hydrologic region. The Sacramento-San Joaquin Delta falls under the jurisdiction of the Central Valley RWQCB. The RWQCBs regulate point source discharges under the Porter-Cologne Act primarily through issuance of NPDES and waste discharge requirement permits. The SWRCB and RWQCBs also have numerous nonpoint source-related responsibilities.

CALIFORNIA DEPARTMENT OF PUBLIC HEALTH REQUIREMENTS

The California Department of Public Health (CDPH), Office of Drinking Water, is authorized by USEPA to implement the federal drinking water standards in California. The department also implements the more stringent California public drinking water standards. The California Code of Regulations (CCR), Title 22, Division 4 contains the State's requirements for production, discharge, distribution, and use of public drinking water.

The CDPH has requirements that specify the minimum distance, or the minimum "travel" time, between known contaminant plumes and municipal groundwater extraction well sites. The intent is to place municipal production wells a sufficient distance from known contaminant plumes to reduce or eliminate the possibility of contamination of extracted groundwater. This requirement would be enforced by implementation of CDPH Drinking Water Source and Assessment Program (DWSAP). Under the DWSAP, all new and existing drinking water sources must undergo a drinking water source assessment prior to being permitted (Montgomery Watson, 2000). The general elements of the assessment include: a) Delineation of an area around a drinking water source through which contaminants might move and reach the source, b) An inventory of possible contaminating activities (PCAs) that might lead to the release of microbiological or chemical contaminants within the delineated area, and c) A determination of the PCAs to which the drinking water source is most vulnerable.

SENATE BILLS 610 AND 221

The State of California has enacted legislation that is applicable to the consideration of larger projects under CEQA. Senate Bill (SB) 610 (Chapter 643, Statutes of 2001)) requires the preparation of water supply assessments (WSAs) for large developments (i.e., more than 500 dwelling units or nonresidential equivalent), such as the Sunridge Properties (Public Resources Code §21151.9; Water Code §10910 et seq.). The WSAs prepared by "public water systems" responsible for serving designated areas (e.g., SCWA) address whether existing and projected water supplies are adequate to serve the project while also meeting existing urban and agricultural demands and the needs of other anticipated development in the service area in which the project is located. If the most recently adopted Urban Water Management Plan (UWMP) accounted for the projected water demand associated with the project, the public water system may incorporate the requested information from the UWMP. If the UWMP did not account for the project's water demand, or if the public water system has no UWMP, the project's WSA shall discuss whether the system's total projected water supplies (available during normal, single-dry, and multiple-dry water years during a 20-year projection) would meet the project's water demand in addition to the system's existing and planned future uses, including agricultural and manufacturing uses.

Where a WSA concludes that insufficient supplies are available, the public water system must provide to the city or county considering the development project its plans for acquiring and developing additional water supplies. Based on all the information in the record relating to the project, including all applicable WSAs and all other information provided by the relevant public water systems, the city or county must determine whether sufficient water supplies are available to meet the demands of the project, in addition to existing and planned future uses. Where a WSA concludes that insufficient supplies are available, the WSA must lay out the steps that would be required to obtain the necessary supply. The WSA is required to include (but is not limited to) identification of the existing and future water supplies over a 20-year projection period. This information must be provided for average normal, single-dry, and multiple-dry years. The absence of an adequate current water supply does not preclude project approval, but it does require a lead agency to address a water supply shortfall in its project findings.

If the project is approved, additional complementary statutory requirements; SB 221(2001), would apply to the approval of tentative subdivision maps for more than 500 residential dwelling units (Government Code §66473.7). This statute requires cities and counties to include, as a condition of approval of such tentative maps, the preparation of a "water supply verification." The verification, which must be completed by no later than the time of approval of final maps, is intended to demonstrate that there is a sufficient water supply for the newly created residential lots. The statute defines sufficient water supply as follows:

> *... the total water supplies available during normal, single-dry, and multiple-dry years within a 20-year projection period that would meet the projected demand associated with the*

proposed subdivision, in addition to existing and planned future uses, including, but not limited to, agricultural and industrial uses.

A number of factors must be considered in determining the sufficiency of projected supplies:

- The availability of water supplies over a historical record of at least 20 years;
- The applicability of an urban-water-shortage contingency analysis that includes action to be undertaken by the public water system in response to water supply shortages;
- The reduction in water supply allocated to a specific water-use sector under a resolution or ordinance adopted or a contract entered into by the public water system, as long as that resolution, ordinance, or contract does not conflict with statutory provisions giving priority to water needed for domestic use, sanitation, and fire protection; and
- The amount of water that the water supplier can reasonably rely on receiving from other water supply projects, such as conjunctive use, reclaimed water, water conservation, and water transfer, including programs identified under federal, state, and local water initiatives.

VINEYARD AREA CITIZENS FOR RESPONSIBLE GROWTH V. CITY OF RANCHO CORDOVA

The water supply for the Sunridge Properties has been identified as the North Vineyard Well Field, five miles southwest of the project sites. There were drawdown contaminant migration and river dewatering issues related to that proposed well field that resulted in a legal challenge. The Sunrise-Douglas Community Plan/Sunridge Specific Plan EIR was the subject of a lawsuit, *Vineyard Area Citizens for Responsible Growth v. City of Rancho Cordova*, with regard to the planned water supply. The case was appealed to the California Supreme Court which issued its ruling in September 2007. The Sunrise-Douglas Community Plan/Sunridge Specific Plan EIR concluded that, based on implementation of the Water Forum Plan, there would be sufficient long-term water supplies available for the project. The plaintiffs objected to this conclusion, arguing that unless long-term water supplies are essentially guaranteed, it is a violation of California law to approve a land use plan for significant new development. The Supreme Court disagreed with the plaintiffs that water supplies must be essentially guaranteed, acknowledging that water planning is by nature an uncertain business and that no guarantees are available. However, a city must demonstrate a "reasonable likelihood" that a projected water source will be available to supply a development project. Thus, a city may approve new large developments in the face of uncertain long-term water supplies as long as the city:

- Evaluates alternative long-term supplies for those developments;
- Acknowledges any uncertainties associated with those alternative long-term water supplies; and
- Identifies any environmental impacts associated with securing and delivering those alternative supplies.

The court also held that the Sunrise-Douglas Community Plan/Sunridge Specific Plan EIR did not comply with the requirements of CEQA on the following points:

- Internal inconsistencies with regarding to the amount of long-term supply available;
- The extent to which the document was tiering off of the Water Forum EIR;

- All the impacts of a large development project must be evaluated up front before the project is approved; and

- Decision-makers were not adequately informed about the long-term cumulative impact of development on water supplies, because it failed to show at least an approximate long-term sufficiency in total supply to serve projected growth.

The court also held against the plaintiffs on several points. The court agreed that the Sunrise-Douglas Community Plan/Sunridge Specific Plan EIR failed to alert the public in a timely way to potential impacts that use of the well field might have on the Cosumnes River and its salmon population, but held that the availability of the well field supplies was adequately disclosed, as were the groundwater impacts of withdrawing the anticipated supply. The court also determined that the Sunrise-Douglas Community Plan/Sunridge Specific Plan EIR adequately informed decision-makers about the methods and impacts of delivering the well field supply to the project and the uncertainties about this supply's long-term viability because of competition from other groundwater users.

In November 2009, in response to the lawsuit, the City of Rancho Cordova began preparing a Revised EIR for the Sunrise-Douglas Community Plan/Sunridge Specific Plan (City of Rancho Cordova, 2009). The revised EIR will specifically respond to the lawsuit in the following expanded or new analyses:

- Analyze alternative sources of water and the impacts of obtaining these alternative sources for the long-term water supply analysis, if the analysis shows the water supply is not "reasonably likely." New or revised standards of significance may be revised to reflect these changed standards.
- Analyze public trust resources as they relate to the Cosumnes River.
- Update mitigation measures to reflect the mitigating policies of the City of Rancho Cordova's General Plan and Infrastructure Element.
- Prepare a Fisheries Resources chapter to address Cosumnes River issues, as well as issues associated with fishery resources within the Sacramento River. Changed water supply/water management conditions in the region will be described, as well as the effect of these changed conditions on fisheries resources. Document the latest data and information regarding fishery resources in the Sacramento River, the status of water diversions upstream and downstream of the Freeport Water Intake Structure, and the latest information available regarding the Central Valley Project Operations Criteria and Plan and potential changes in response to judicial decisions.
- Comprehensively address the cumulative water supply actions that are ongoing within the region. Incorporate, as appropriate, analysis contained in the Zone 40 Water Supply Master Plan EIR, the Freeport Regional Water Supply Project EIR, and Eastern County Replacement Water Supply Project Draft EIR. Provide a cumulative context for water supply deliveries in the Sacramento River and Sacramento-San Joaquin Delta.

As a NEPA document, this EIS is not required to comply with a California Supreme Court opinion offered in a decision over a challenge to a CEQA document, even for an EIS prepared for the same project. The lawsuit did not generally point to errors in the water supply analysis, but called for an assessment of long-term supplies, and identification of uncertainties related to those supplies. To maintain a consistent approach in the environmental documentation, however, a threshold of significance has been incorporated into the water supply analysis of: reasonable likelihood of long-term water supply projects. The related analysis evaluates whether there would be an increased need for development of long-term regional surface and groundwater supplies, and identifies progress made toward long-term water supply projects that would provide water to the project area.

3.3.3.3 REGIONAL AND LOCAL LAWS, REGULATIONS, POLICIES, AND PLANS

RANCHO CORDOVA GENERAL PLAN

An updated analysis of the proposed project's and alternatives' consistency with applicable goals and policies from the 2006 Rancho Cordova General Plan (City General Plan) relating to water supply, and requirements imposed by Rancho Cordova, are provided below.

Policy ISF.2.4 - Ensure that water supply and delivery systems are available in time to meet the demand created by new development, or are guaranteed to be built by bonds or securities.

Action ISF.2.4.1 - The following shall be required for all legislative-level development projects, including community plans, general plan amendments, specific plans, rezonings, and other plan-level discretionary entitlements, but excluding tentative subdivisions maps, parcel maps, use permits, and other project-specific discretionary land-use entitlements or approvals:

- Proposed water supplies and delivery systems shall be identified at the time of development project approval to the satisfaction of the City. The water agency or company proposing to provide service (collectively referred to as "water provider") to the project may provide several alternative methods of supply and/or delivery, provided that each is capable individually of providing water to the project. The project applicant or water provider shall make a factual showing prior to project approval that the water provider or providers proposing to serve the development project has or have legal entitlements to the identified water supplies or that such entitlements are reasonably foreseeable by the time of subsequent, project-specific discretionary land-use entitlements or approvals. This factual showing shall also demonstrate that the water provider's identified water supply is reasonably reliable over the long term (at least 20 years) under normal, single-dry and multiple-dry years.

- All required water treatment and delivery infrastructure for the project shall be in place at the time of subsequent, project-specific discretionary land-use entitlements or approvals, or shall be assured prior to occupancy through the use of bonds or other sureties to the City's satisfaction. Water infrastructure may be phased to coincide with the phased development of large-scale projects.

Action ISF.2.4.2 - The following shall be required for project-specific discretionary land-use entitlements and approvals including, but not limited to, all tentative subdivision maps, parcel maps, or use permits.

- An assured water supply and delivery system shall be available or reasonably foreseeable at the time of project approval. The water agency providing service to the project may provide several alternative methods of supply and/or delivery, provided that each is capable individually of providing water to the project.

- The project applicant, water agency (or agencies), or water company (or companies) providing water service to the project site shall make a factual showing consistent with, or the City shall impose conditions similar to, those required by Government Code §66473.7 in order to ensure an adequate water supply for development authorized by the project. Prior to recordation of any final subdivision map, or prior to City approval of any similar project- specific discretionary land use approval or entitlement required for nonresidential uses, the project applicant or water provider shall demonstrate the

availability of a long-term, reliable water supply for the amount of development that would be authorized by the final subdivision map or project-specific discretionary non-residential approval or entitlement. This assurance of water supply shall identify that the water provider has legal entitlement to the water source and that the water source is reasonably reliable (at least 20 years) under normal, dry and multiple dry years. Such demonstration shall consist of a written certification from the water provider that either existing sources are available or that needed improvements will be in place prior to occupancy.

- Off-site and onsite water infrastructure sufficient to provide adequate water to the subdivision shall be in place prior to the issuance of building permits or their financing shall be assured to the satisfaction of the City prior to the approval of the Final Map, consistent with the requirements of the Subdivision Map Act, or prior to the issuance of a similar, project-level entitlement for non-residential land uses.

- Off-site and onsite water distribution systems required to serve the subdivision shall be in place and contain water at sufficient quantity and pressure prior to the issuance of any building permits. Model homes may be exempted from this policy as determined appropriate by the City, and subject to approval by the City.

WATER FORUM PLAN AND SUCCESSOR EFFORT

The Water Forum Plan (WFP) process brought together a diverse group of stakeholders that included water managers, business, and agricultural leaders, environmentalists, citizen groups, and local governments to evaluate water resources and future water supply needs of the Sacramento metropolitan region. The coequal objectives of the Water Forum Plan are to: (1) Provide a reliable and safe water supply for the region's economic health and planned development through the year 2030; and (2) Preserve the fishery, wildlife, recreational, and aesthetic values of the Lower American River. The first objective is to be met by additional diversions of surface water, increased conjunctive use of surface water and groundwater, expanded water conservation, and water reclamation. The second objective includes development of responsible and feasible alternatives to improve fish flow patterns, reduce daily flow fluctuations, and improve in-stream harvest.

Development of the WFP to meet the coequal objectives involved substantial scientific review and input, environmental analysis, and consensus-building with various stakeholders. The WFP included a comprehensive package of linked actions which, when implemented, are intended to meet the coequal objectives. These linked actions would require the support of each of the stakeholders in the public policy decision making process and through implementation in order to successfully achieve the coequal objectives.

These linked actions include adhering to agreed upon long-term average operational yield limits (sustainable yields) for each of the three geographic subareas of the groundwater basin within Sacramento County. These agreed upon limits are 131,000 acre-feet (af) for the North Area (i.e., the area north of the American River); 273,000 af for the Sacramento Central Groundwater Basin (Central Basin) (i.e., the area between the American and Cosumnes Rivers); and 115,000 af for the Galt Area (i.e., the area south of the Cosumnes River).

Within the Central Basin (which includes the Sunrise-Douglas Community Plan/Sunridge Specific Plan project area and the North Vineyard Well Field area), the agreed upon limit of 273,000 acre-feet per year (af/yr) represents an amount equal to the projected 2005 groundwater pumping rates. Because of limits placed on the extraction of groundwater by the WFP, delivery of additional surface water to the Central

Basin would be required to meet total water demand in 2030. Based on an assumption that a 25.6% level of water conservation is achievable (with 1990 serving as the base year), approximately 63,857 af of surface water would be delivered to the South Area on an average annual basis. A portion of this delivery (approximately 32,625 af/yr) is expected to be a firm, dry year supply. The remainder would be available dependent upon hydrologic year type. It should be noted that the ultimate geographic distribution of groundwater and surface water deliveries throughout the South Area sub-basin greatly influences the capacity and construction timing of the water conveyance facilities required to serve the water demand within the analysis area.

The WFP proposed an equilibrium condition around which the groundwater system would be allowed to fluctuate and determined the allowable average annual groundwater extraction (or safe-yield) necessary to maintain that equilibrium condition. Therefore, any proposed water supply project must maintain or improve upon the groundwater conditions specified within the WFP for the 2030 projected level of development.

The Final EIR for the Water Forum Plan was prepared in October of 1999 and the City of Sacramento and County of Sacramento, acting as co-lead agencies, certified the Final EIR and adopted the Water Forum Plan in late 1999. Each of the stakeholder groups' governing bodies subsequently adopted the WFP in early 2000. Upon adoption, the WFP became the Water Forum Agreement, which is embodied in a Memorandum of Understanding between the City of Sacramento, the County of Sacramento and the various stakeholder groups.

In February 2006, the Central Sacramento County Groundwater Forum and the Water Forum Successor Effort accepted the Central Sacramento County Groundwater Management Plan. The Groundwater Management Plan provides for the review of current and future water supply and demands and contains Basin Management Objectives (BMOs). Each BMO focuses on managing and monitoring the basin to benefit all groundwater users within the basin. The Groundwater Management Plan also contains "trigger points" and remedies to ensure full implementation of the individual BMOs. The five BMOs are described below:

- Maintain the long-term average groundwater extraction rate at or below 273,000 af/yr;
- Maintain specific groundwater elevations within all areas of the basin consistent with the Water Forum "solution";
- Protect against any potential inelastic land surface subsidence by limiting subsidence to no more than 0.007 feet per 1 foot of drawdown in the groundwater basin;
- Protect against any adverse impacts to surface water flows in the American, Cosumnes, and Sacramento Rivers; and
- Meet water quality objectives, including:
    - Total Dissolved Solids (TDS) concentration of less than 1,000 milligrams per liter (mg/l),
    - Nitrate concentration of less than 45 mg/l, and Volatile Organic Compounds (VOC) - any measurable trace of VOC in a private or public well should be considered significant and action taken.

The Sacramento Central Groundwater Authority was formed on August 29, 2006 through a Joint Powers Agreement (JPA) signed by the Cities of Elk Grove, Folsom, Rancho Cordova, and Sacramento and the County of Sacramento to manage the Sacramento Central Groundwater Basin.

SACRAMENTO COUNTY WATER AGENCY ZONE 40 PLANNING

The SCWA was formed in 1952 for the express purpose of making water available for beneficial use of lands and inhabitants, and to produce, store, transmit, and distribute groundwater. The SCWA is governed by the Sacramento County Board of Supervisors, acting as SCWA's Board of Directors.

In 1985, SCWA was given the authority to establish groundwater management zones for the purpose of distributing surface water to replenish the groundwater basin and to stabilize groundwater levels within the influence area of the Elk Grove cone of depression. A groundwater management zone is authorized to be formed in any area that would benefit from the importation and distribution of surface water for municipal and industrial uses. Zone 40 was formed for the purpose of constructing facilities for the production, conservation, transmittal, distribution, and sale of surface water and groundwater for conjunctive use in the Zone 40 area.

Management of groundwater is also an important goal in Zone 40 to ensure the long-term viability of groundwater supplies in the region. Historical groundwater use in Zone 40 comprised agricultural, rural, and municipal pumping. Long-term reliance on groundwater has formed a groundwater cone of depression, known as the "Elk Grove cone of depression," within Zone 40. Groundwater in the Central Basin moves toward the center of the cone of depression, and groundwater extracted from the basin contributes to further declines at the cone of depression. Management of the Central Basin is being considered under a successor process to the Sacramento Area Water Forum Agreement known as the Central Sacramento County Groundwater Forum. SCWA is a major sponsor and stakeholder in this broadly shared process.

In 1987, SCWA adopted a Zone 40 Water Supply Master Plan, a long-term plan for meeting future water needs in the newly developing Laguna and Vineyard areas, which have historically depended on groundwater. In 1993, Sacramento County approved a general plan that changed the land use designation of large areas of central Sacramento County from agricultural use to residential, commercial, and industrial uses. As a result, in 1999, SCWA expanded the boundary of Zone 40 to include the urban policy area of the County's general plan and areas studied in previous master planning efforts. Zone 40's boundaries were expanded from 17,200 acres (1987 Plan) to 86,000 acres. In 2003, SCWA updated their Water Supply Master Plan based on these new boundaries.

The 1999 Water Forum EIR evaluated SCWA's water supply needs in combination with other water supply needs in the region. The SCWA agreed to a series of actions and commitments related to diversions of surface water, dry-year supplies, fishery flows, habitat management, water conservation, and groundwater management. The 2030 demand and water supplies identified in the Water Forum EIR were used by the County in its role as a land use agency to describe an area of development that could be served by these supplies. The Water Forum EIR evaluated the provision of water for a 30-year planning period based on land use projections. The 2005 Zone 40 Water Supply Master Plan (WSMP) relied on the County of Sacramento General Plan to identify where urban development would occur within the county, consistent with Water Forum Agreement (WFA) purveyor-specific agreements for water service to those areas.

The WFA includes estimates of sustainable groundwater yield that are supported by more extensive hydrologic and hydrogeologic information for the Central Basin underlying Zone 40 than that available for the 1987 Plan. In Sacramento County, three groundwater subbasins—the North Area (the area north

of the American River), Central Area (roughly the area between the American and Cosumnes Rivers), and South Area (generally the area south of the Cosumnes River)—have been identified. Zone 40 lies entirely within the Central Area. Technical studies conducted in support of the WFA provided a basis for defining the negotiated sustainable yield for each of the three Sacramento County subbasins. Based on negotiated levels of acceptable impacts associated with operating the basins at specified extraction volumes, the WFA negotiated a sustainable long-term average annual yield for the Central Area of 273,000 af/yr, including groundwater pumping in the Central Basin. Within the context of this sustainable yield, the Water Supply Master Plan identifies and projects groundwater demands within the 2030 analysis area.

SCWA undertook a comprehensive update of its water supply planning process in response to the requirements of the WFA through the Zone 40 WSMP, which was adopted in February 2005 (MWH,2005a). The purpose of the Zone 40 WSMP was to identify available water and the infrastructure necessary to deliver water to a subarea within Zone 40 known as the 2030 Study Area. The 2030 Study Area encompasses approximately 46,600 acres (including portions of the cities of Elk Grove and Rancho Cordova) where development of industrial, commercial, office, and residential land uses is expected to occur and where demand for water is expected to be concentrated during the planning horizon of the WSMP (i.e., 2030).

The most significant changes reflected in the 2005 Water Supply Master Plan include (1) a major modification of the Central Valley Project's (CVP) contracting policy that occurred as a result of the Central Valley Project Improvements Act (CVPIA); (2) the signing of the Water Forum Agreement; and (3) the adoption of the 1993 Sacramento County General Plan update that substantially increased the area designated for urban growth in the County. Significantly, the 2005 Water Supply Master Plan has as its foundation the Water Forum Agreement and its objectives. The 2005 Plan is also based on an updated set of assumptions regarding urban development patterns, water use demand patterns, groundwater availability, and surface water availability.

During development of the Zone 40 WSMP, the general plans for the newly incorporated Cities of Elk Grove and Rancho Cordova were not available; therefore, the County of Sacramento General Plan (County of Sacramento 1993) was the planning document used to project growth and development anticipated to occur within an area defined as the Urban Policy Area (UPA). The County's UPA is defined as the area anticipated to be built out with urban development within the planning horizon of the general plan (year 2024). This area is known as the 2030 Study Area. The southern boundary of the 2030 Study Area generally coincides with the County's UPA. The 2030 Study Area was delineated based on the County's identified growth areas and the area of land that was planned to be served by the negotiated firm water supply identified in the WFA. Because of the time frame of the Zone 40 WSMP and the likelihood that the UPA would be expanded during the next general plan update (currently under way), SCWA identified four likely areas outside the UPA where urban expansion was logical and could occur. The areas included in the 2030 Study Area were selected based on their proximity to the UPA. The 2030 Study Area also captured active projects and included the newly incorporated City of Rancho Cordova.

As a signatory to the WFA, SCWA has agreed to ensure that water conservation and demand management-necessary steps to achieve WFA objectives-are integrated into future growth and water planning activities in its service area. The Zone 40 WSMP provides a flexible plan of water management options that can be implemented and modified if conditions that affect the availability and feasibility of water supply sources change in the future. The goal of the Zone 40 WSMP is to carry out a conjunctive-use program, which is defined as the coordinated management of surface water and groundwater supplies to maximize the yield of available water resources. The conjunctive-use program for Zone 40 includes the use of groundwater, surface water, remediated water, and recycled water supplies. It also includes a financing program for the construction of a new surface-water diversion structure; surface-water treatment plant; water conveyance pipelines; and groundwater extraction, treatment, and distribution

facilities. The Zone 40 WSMP evaluates several options for facilities to deliver surface water and groundwater to development within Zone 40, as well as the financing mechanisms to provide water to the 2030 Study Area.

Changed conditions regarding groundwater contamination and remediation efforts now underway in the County also affect water planning for Zone 40. Remediation efforts currently underway by Aerojet General Corporation (Aerojet) and Boeing (formerly McDonnell Douglas Corporation) have resulted in the East Sacramento County Replacement Water Supply Project.

RELATED GROUNDWATER SUPPLY PROJECTS AND AGREEMENTS

Since approval of the Zone 40 WSMP (MWH, 2005a), SCWA has pursued and is in various stages of planning several groundwater projects that would implement specific elements of the WSMP. In addition, SCWA has entered into agreements that require delivery of water to purveyors and for beneficial uses. These agreements are briefly summarized below. These projects and agreements are briefly summarized below.

CENTRAL SACRAMENTO COUNTY GROUNDWATER MANAGEMENT FORUM

The Central Sacramento County Groundwater Forum was initiated in 2002 by the Water Forum Successor Effort to carryout a portion of the Water Forum's mission to develop a groundwater management program to protect the health and viability of the central Sacramento County groundwater basin for both current users and future generations.

The Central Sacramento County Groundwater Forum developed the Central Sacramento County Groundwater Management Plan (MWH, 2006), which sets forth objectives for managing the groundwater basin underlying Zone 40 and establishes parameters for monitoring the performance of the management strategies. The forum is intended to adapt to changing conditions within the groundwater basin and to be updated and refined to reflect progress made in achieving the Central Sacramento County Groundwater Management Plan objectives.

EAST SACRAMENTO COUNTY REPLACEMENT WATER SUPPLY PROJECT

Groundwater contamination emanating from the Aerojet site, the Inactive Rancho Cordova Test Site, and the Mather Field site has significantly impacted groundwater resources in the Rancho Cordova area. In some instances, groundwater supplies have been impacted so severely that all wells within a purveyor's service area have been shut down. Aerojet and Boeing have been directed by various regulatory agencies to implement a groundwater remediation program that would stop the spread of contamination and perhaps remove it entirely. To ensure that the overall impact of groundwater remediation would not affect the estimated long term average annual pumping limit of the basin, SCWA has entered into agreements with Aerojet and Boeing to ensure that the remediated groundwater does not leave the basin.

The project includes: 1) extracting contaminated groundwater, 2) treating the contaminated groundwater to meet NPDES permit requirements, 3) discharging the treated groundwater to the American River, and 4) reusing the treated groundwater in the Central Basin. Reuse has been prioritized in the agreement as follows: 1) replacement of municipal groundwater supplies lost due to contamination, 2) water supply service to "Aerojet Lands," 3) new development in Zone 40, and 4) environmental uses.

Since the above agreements have been approved, additional agreements have been reached that more fully delineate how the replacement water will be used. These agreements include an agreement with EBMUD regarding use of the Folsom South Canal for delivery of replacement water supplies to Golden State

Water Company and delivery of environmental water to the Cosumnes River, an agreement with SMUD on water quality in the Folsom South Canal, an agreement with Golden State Water Company for replacement water supply, and an agreement with The Nature Conservancy and South Sacramento County Agricultural Water Authority on delivery of environmental water to the Cosumnes River. Currently, no agreement exists between SCWA and California American Water on how much water will be needed to meet their replacement water supply needs.

ZONE 40 GROUNDWATER MANAGEMENT PLAN

The SCWA prepared a groundwater management plan (MWH, 2004) for Zone 40. Although groundwater management plans are typically prepared for entire groundwater basins (in this case the Central Basin), SCWA's groundwater management plan addresses only the boundaries of Zone 40, which encompasses most but not all of the Central Basin. The goal of the plan is to ensure a viable groundwater resource for beneficial uses, including water for adjacent purveyors; and agricultural, residential, industrial, and municipal supplies that support the WFA's coequal objectives of providing a reliable and safe water supply and preserving the fishery, wildlife, recreational, and aesthetic values of the lower American River. In addition, the plan promotes the enhancement of maintaining ecological flows in the Cosumnes River. The Zone 40 groundwater management plan is now superseded by the Central Sacramento County Groundwater Management Plan. However, before the Central Sacramento County Groundwater Management Plan, groundwater management within Zone 40 by SCWA was based on the Zone 40 groundwater management plan.

SURFACE WATER SUPPLIES FOR DRY YEARS

In wet and normal water years, SCWA would divert surface water from the American and Sacramento Rivers consistent with the entitlement contracts described above. The underlying groundwater basin would be replenished in wet years as a result of this reliance on surface water. In dry water years, SCWA's surface water could be reduced based on recommended dry-year cutback volumes outlined in the WFA—those volumes that purveyors have agreed not to divert from the American River during dry years. During dry years, SCWA would increase groundwater pumping so that it could continue to meet customers' water demand, and it would implement a water-shortage contingency plan that would result in a 28% reduction in water demand (MWH, 2005a).

GROUNDWATER SUPPLIES IN SCWA ZONE 40

The SCWA currently exercises and will continue to exercise its rights as a groundwater appropriator and will extract water from the Central Basin for the beneficial use of its customers. As a signatory to the WFA, SCWA is committed to adhering to the long-term average sustainable yield of the Central Basin (i.e., 273,000 af/yr recommended in the WFA. Total groundwater pumping (i.e., urban and agricultural pumping) within the Central Basin is approximately 248,500 af/yr, of which approximately 59,700 af/yr is pumped within Zone 40 (agricultural demand, 21,900 af/yr; urban demand, 37,800 af/yr (MWH, 2005a). The remaining groundwater is pumped by the City of Sacramento, Elk Grove Water Service, California American Water, Golden State Water Company, and private and agricultural pumpers. Projected groundwater pumping volumes from the Central Basin in 2030 would range from 235,000 af/yr to 253,000 af/yr for urban and agricultural demands (MWH, 2005a). Of that amount, it is projected that SCWA Zone 40 would pump an average of 40,900 af/yr to meet urban water demand within Zone 40 through 2030 (MWH, 2005a).

GROUNDWATER EXTRACTION AND TREATMENT - REMEDIATED GROUNDWATER

Aerojet currently extracts and treats groundwater for contaminants at various groundwater extraction and treatment (GET) facilities at or near its property in Eastern Sacramento County. The GET facilities are operated under one or more directives from the USEPA, the Central Valley RWQCB, and DTSC. These directives require extraction of contaminated groundwater, treatment of the groundwater, and appropriate discharge of treated groundwater, principally to the American River. The GET facilities currently extract, treat, and discharge to the American River approximately 15,000 af/yr of GET-Remediated Water; the facilities are being expanded under government oversight over the next several years to extract, treat, and discharge more than 26,000 af/yr. Additionally, there are two other GET facilities (also under environmental agency oversight) that presently discharge to Morrison Creek, but that can discharge to the American River if new pipelines are constructed. One of the GET facilities discharging to Morrison Creek is operated by Boeing. Boeing and Aerojet are responsible parties to remediate groundwater migrating from portions of property formerly owned by Boeing and currently owned by Aerojet. Upon completion of all planned GET facilities, and if the water currently discharging to Morrison Creek is redirected to the American River through pipelines, more than 35,000 af/yr of treated groundwater would be discharged to the river. Approximately 15,000 af/yr of GET-remediated groundwater is currently discharged to the American River and is currently available for diversion at the Freeport Regional Water Project on the Sacramento River under the terms of an agreement between Aerojet and SCWA.

RELATED SURFACE WATER SUPPLY PROJECTS AND AGREEMENTS

Since approval of the Zone 40 WSMP (MWH, 2005a), SCWA has pursued and is in various stages of planning several surface water projects that would implement specific elements of the WSMP. In addition, SCWA has entered into agreements that require delivery of water to purveyors and for beneficial uses. These agreements are briefly summarized below. These projects and agreements are briefly summarized below.

FREEPORT REGIONAL WATER PROJECT

The FRWA was created by exercise of a joint-powers agreement between SCWA and EBMUD. The Freeport Regional Water Authority's basic purpose is to increase the reliability of water service for customers, reduce rationing during droughts, and facilitate conjunctive use of surface-water and groundwater supplies in central Sacramento County. The Freeport Regional Water Authority developed the Freeport Regional Water Project to meet the objectives of SCWA and EBMUD.

The Freeport Regional Water Project involves construction of a 185-million-gallon-per-day (mgd) intake facility and pumping plant located on the Sacramento River, a reservoir and water treatment plant (WTP), a terminal facility located at the point of delivery to the Folsom South Canal, a canal pumping plant located at the terminus of the Folsom South Canal, an aqueduct pumping plant and pretreatment facility near the Mokelumne Aqueducts/Camanche Reservoir area, and pipelines to deliver water from the intake facility to the Zone 40 Vineyard Surface WTP and to the Mokelumne Aqueduct.

The project is currently under construction and estimated to be operation in late 2009 or early 2010. Once operational, the Freeport Regional Water Project will provide SCWA with up to 85 mgd of surface water from the Sacramento River that would be conveyed by Freeport Regional Water Authority to SCWA's Vineyard Surface WTP. The remaining 100 mgd of the 185 mgd diverted from the Sacramento River would be conveyed past the Vineyard Surface WTP by EBMUD to the Folsom South Canal, which would convey the water to the Mokelumne Aqueduct for use within EBMUD's service area during dry years.

VINEYARD SURFACE WATER TREATMENT PLANT

The SCWA is constructing the Vineyard Surface WTP and associated water supply facilities to provide potable water to existing and approved future development within the SCWA Zone 40 area. The Vineyard Surface WTP will be located west of the intersection of Florin and Excelsior Roads, at the northeast corner of Florin and Knox Roads in Sacramento County. Construction is estimated to be completed in 2011, with full buildout by 2029.

The objective of constructing the Vineyard Surface WTP is to provide capacity for treating 100 mgd of raw surface water and remediated groundwater, and to serve approved land uses in the Zone 40 service area. Water would be diverted from the Sacramento River via the FRWP facilities and conveyed to the Vineyard Surface WTP for treatment and delivery to SCWA Zone 40. After the water is treated at the Vineyard Surface WTP, it would be delivered to the project sites through the North Service Area Pipeline Project (NSAPP).

NORTH SERVICE AREA PIPELINE PROJECT

Water would be conveyed from the Vineyard Surface WTP to the North Service Area via the NSAPP. The preferred alignment would begin at the Vineyard Surface WTP and continue east along Florin Road. At the intersection of Florin Road and Eagles Nest Road, the pipeline would head north along Eagles Nest Road, which transitions into Zinfandel Road at the intersection of Douglas Road. The pipeline continues north along Zinfandel Road to a storage tank and pump station just north of Douglas Road and adjacent to the east side of the Folsom South Canal. In addition to providing water supplies to the project (including the Cal-Am portion where wholesale Zone 40 water supplies would be delivered), the NSAPP would also serve the Mather, Sunrise Corridor, Sunrise-Douglas, and Westborough areas. The date that this pipeline would be in service is estimated as 2014.

ZONE 40 WATER SYSTEM INFRASTRUCTURE PLAN

To build on the 2005 Zone 40 WSMP, SCWA prepared the Zone 40 Water System Infrastructure Plan (SCWA/MWH, 2006) (Zone 40 WSIP) that addresses how identified 2030 water supplies addressed in the Zone 40 WSMP would be allocated among users within its service area. The WSIP provides the most up-to-date information on Zone 40's water supplies, demands, and infrastructure; provides project-level detail that is necessary for implementation of the preferred pipeline alignment alternatives; and it also fills in the gaps of associated smaller infrastructure requirements, including a description of facility construction and phasing as well as operational requirements from existing conditions through ultimate buildout of the water system. As such, it is not a document that is formally adopted, and the plan is not required to go through environmental review pursuant to CEQA.

The Zone 40 WSIP divides the Zone 40 service area into three major subareas for planning purposes. From east to west, these areas are identified as the North Service Area, the Central Service Area, and the South Service Area. A portion of the City's planning area, including the areas identified as Mather, Rio del Oro, Sunrise Corridor, Sunrise-Douglas, and Westborough, are located within the boundary of the North Service Area.

2005 ZONE 41 URBAN WATER MANAGEMENT PLAN

The 2005 Zone 41 Urban Water Management Plan (Zone 41 UWMP) (MWH, 2005b) was prepared by SCWA and adopted by the SCWA Board of Directors on December 6, 2005. The plan addresses water supply and demand issues, water supply reliability, water conservation, water shortage contingencies, and recycled-water usage for the areas within Sacramento County where Zone 41 provides retail water

services, including the Zone 40 service area and other areas outside of Zone 40 where Zone 41 has contracts to provide water (e.g., Zone 50, Sacramento Suburban Water District). Zone 41 is responsible for the operations and maintenance of all the water supply facilities within the defined service area and retails and wholesales water to its defined service area and to agencies where agreements are in place to purchase water from SCWA. The water demands for the proposed project, which were identified in the Zone 40 WSMP, are included in the Zone 41 UWMP.

Because SCWA's conjunctive-use groundwater program would be implemented only within Zone 40, the Zone 41 UWMP presents information about projected water supply and demand separately for areas within Zone 40 and areas outside of Zone 40. However, the Zone 41 UWMP does not specifically describe how projected future water supplies would be allocated within the Zone 40 region (e.g., how water would be allocated to the City of Rancho Cordova).

LOWER COSUMNES RIVER ENVIRONMENTAL AND WATER MANAGEMENT MOA

The Memorandum of Agreement for the Management for Water and Environmental Resources Associated with the Lower Cosumnes River has been entered into by SCWA, the Southeast Sacramento County Agricultural Water Authority, and The Nature Conservancy. The goal of the memorandum of agreement (MOA) is to restore and maintain key functions of the Cosumnes River corridor while furthering conjunctive use in the agricultural areas between the American and Cosumnes Rivers and from the Cosumnes River to the southern boundary of Sacramento County. The signatories to the MOA seek to ensure the viability of both the agricultural economic base and ecosystems associated with the Cosumnes River. Through the MOA, the signatories are committed to working together to enhance conjunctive use within the region to reduce groundwater pumping and improve flow conditions in the Cosumnes River. The proposed project would make available approximately 5,000 af/yr to SCWA, which would make the water available to The Nature Conservancy. The Nature Conservancy would need to obtain the necessary agreements to divert the water from Folsom South Canal to the Cosumnes River for supplemental flows on a schedule that is beneficial for fisheries enhancement and groundwater recharge.

The Water Forum has defined conjunctive use as "the planned joint use of surface and groundwater to improve overall water supply reliability." Since its formation, Zone 40 has had as its goal the development of a conjunctive-use water supply system. As such, the areas inside Zone 40 are served conjunctively with groundwater (pumped from the Central Basin), surface water, recycled water, and remediated water. Available surface-water supplies would be maximized in wet years; groundwater supplies would be maximized in dry years through increased pumping at SCWA's groundwater facilities. In all consecutive dry years, water-demand management programs would be implemented to a higher degree (e.g., greater conservation, reduced outdoor use) to reduce the potential impacts from increased extraction of groundwater.

The following discussion identifies and characterizes the water supply sources that will be used to meet projected demands within Zone 40 (not including GET-Remediated Water).

SMUD ASSIGNMENT OF CENTRAL VALLEY PROJECT WATER SUPPLY

Under the terms of a three-party agreement (SCWA, SMUD, and the City of Sacramento), the City of Sacramento provides surface water to SMUD for use at two of SMUD's cogeneration facilities. SMUD, in turn, has assigned 15,000 af/yr of its CVP contract water to SCWA for municipal and industrial use. Each of these contracts remains in effect until they expire in 2010.

SMUD's WFA purveyor-specific agreements directs SMUD to assign a second 15,000 af/yr of surface water to SCWA for municipal and industrial uses, and to enable SCWA to construct groundwater

facilities to provide water needed to meet SMUD's demand of up to 10,000 af/yr at its cogeneration facility during water shortages in dry years.

CENTRAL VALLEY PROJECT WATER (PUBLIC LAW 101-514 ["FAZIO WATER"])

In April 1999, SCWA executed a CVP water-service contract pursuant to Public Law 101-514 (referred to as "Fazio water") that provides a permanent water supply of 22,000 afy, with 15,000 afy allocated to SCWA and 7,000 afy allocated to the City of Folsom. SCWA began taking delivery of the Fazio water in 1999 at the City of Sacramento's Franklin connection through a long-term wheeling agreement with the City of Sacramento. This contract remains in effect until it expires in 2024. Pursuant to the biological opinion issued by NMFS, the water diversion amount was limited to 7,200 afy until new fish screens were installed at the City of Sacramento's Sacramento River water treatment plant. Construction of a fish screen was completed in 2004 for the City of Sacramento's municipal intake facility along the Sacramento River, and now the full contract amount of 15,000 afy is available and authorized through the contract.

SCWA'S PLANNED ENTITLEMENTS TO SURFACE WATER SUPPLY

APPROPRIATIVE WATER SUPPLIES

SCWA has submitted an application to the SWRCB for appropriation of water from the Sacramento River (the County Board of Supervisors authorized submittal of this application on June 13, 1995). This water is considered "intermittent water" that typically would be available during normal years or wet years (i.e., years when rainfall, and hence water supply, are greater than average). This water could be used to meet system demand, and it could possibly be used for future groundwater recharge through recharge-percolating groundwater basins or direct injection of surface water into the aquifer. The maximum, minimum, and average annual use of appropriative water is 71,000 af, 0 af, and 21,700 af, respectively. In close to 30% of the years, 12,000 af or less of appropriative water is used. The FRWP and Vineyard Surface WTP would be used to deliver the surface water.

CITY OF SACRAMENTO'S AMERICAN RIVER PLACE OF USE AGREEMENT

The SCWA is pursuing an agreement under which the City of Sacramento would wholesale American River water to SCWA for use in a portion of the SCWA 2030 Study Area that lies within the City of Sacramento's American River POU. The estimated long-term average volume of water that would be used by SCWA within this POU would be approximately 9,300 afy.

3.3.4 ENVIRONMENTAL CONSEQUENCES AND MITIGATION MEASURES

The three alternatives are evaluated for their impacts on water resources, including hydrology, surface and groundwater quality, and surface and groundwater supply.

3.3.4.1 THRESHOLDS OF SIGNIFICANCE

The alternatives were evaluated for impacts related to water issues. The thresholds for determining the significance of impacts for this analysis are based on both construction and long-term impacts to hydrology, surface and groundwater quality, and surface and groundwater supply. The thresholds for determining the significance of impacts for this analysis encompass the factors taken into account under NEPA to determine the significance of an action in terms of its context and the intensity of its impacts. The Proposed Action and alternatives under consideration were determined to result in a significant

impact related to hydrology, water quality, water supply, and groundwater if they would result in any of the following:

- Change the rate and amount of surface runoff, such that post-development peak flows exceed pre-development peak flows, a violation of County guidelines.

- Construction or long-term discharges into surface waters or other alterations of surface water quality which violate water quality standards or waste discharge requirements.

- Substantial changes in the groundwater surface contours in and around the Elk Grove cone of depression.

- Substantial changes in the groundwater surface contours in and around the proposed North Vineyard Well Field.

- Substantial changes in the groundwater surface contours in and around the vicinity of known contaminant plumes.

- Substantial increases in groundwater movement rates such that the travel times of known contaminant plumes are affected.

- Substantial vertical migration of lower quality (higher TDS) groundwater in Aquifer 2 upwards to Aquifer 1 (vertical elevation differentials, gradients, and flow rates). It is a Sacramento County Water Resources Department goal to maintain the groundwater in Aquifer 1 at an elevation 10 feet higher than the piezometric surface elevation in Aquifer 2. The objective is to minimize or prevent migration of lower quality (that is, higher TDS) groundwater in Aquifer 2 upwards into Aquifer 1.

- North Vineyard Well Field Groundwater Supply not meeting California SDWA Standards set forth in Title 22 of the California Code of Regulations.

- Groundwater production activities which exceed the Water Forum Plan agreed-upon safe yield for the South County groundwater basin, and an associated decline in the groundwater surface stabilization levels identified in the Water Forum Plan.

- Reasonable likelihood of implementation of long-term water supply projects.

With regard to changes in groundwater elevations, the County does not have an adopted quantitative threshold to determine what constitutes a significant change in groundwater surface elevations. However, the Sacramento County Water Resources Department has historically used a 10-foot drop in groundwater elevation as a generally meaningful threshold indicator of unacceptable groundwater response, because certain parameters (e.g., groundwater lift (power) costs, existing well and pump depth) can become noticeably affected at this level. As such, a 10-foot drop in groundwater elevation may be noticeable to operators of existing shallow domestic wells, in that such a decline in groundwater levels could increase groundwater pumping costs and/or require the deepening of existing wells to obtain water. Therefore, for purposes of this EIS, a decline of 10 feet or greater in groundwater elevation is considered to have a potentially significant impact upon groundwater conditions.

3.3.4.2 ANALYSIS METHODOLOGY

The water supply analysis summarized below incorporates by reference the discussion in the Sunrise-Douglas Community Plan/Sunridge Specific Plan Final Environmental Impact Report (County of Sacramento, 2001). The analysis summarized in this chapter is based on modeling runs using the Sacramento County Integrated Groundwater and Surface Water Model (IGSM). The Sacramento County IGSM was originally developed as a site-specific model to investigate groundwater resources underlying the City of Sacramento's authorized POU for its Sacramento River and American River surface water rights. The Sacramento County IGSM was subsequently expanded on behalf of SCWA to investigate groundwater on a countywide basis. The model in its current form was developed to complete groundwater impact analyses as part of the Water Forum Plan effort. The Sacramento County IGSM continues to be relevant and appropriate for this assessment.

Groundwater and surface water modeling was conducted using the IGSM for the Sunrise-Douglas Community Plan/Sunridge Specific Plan Final Supplemental Water Supply Investigation (SWSI), (MWH, 2000). Two versions of the Sacramento County IGSM were used for the analysis: the "1990 Water Demand" model and the "2030 Water Forum Plan Solution" model. These models were obtained from the Sacramento County Water Resources Department (WRD) and the results were analyzed in the Sunridge EIR.

The Sunridge Properties represent only a portion of the water usage modeled in the SWSI. The SWSI modeled not just the Sunridge Specific Plan Area, but the larger Sunrise-Douglas Community Plan Area, as well as current demands from Mather Field, Security Park and the Sunrise Corridor. The Sunridge Properties involve the development of 7,829 equivalent dwelling units (EDUs). The Sunridge Specific Plan Area includes the development of 11,358 EDUs. The Sunrise-Douglas Community Plan includes the development of an additional 18,040 EDUs. The Sunridge Specific Plan Area represents 38.6% of the EDUs for the Sunrise-Douglas Community Plan (11,358 of 29,398 EDUs). In addition, the seven demand scenarios included different permutations and portions of these projects.

Consideration of the modeling results must also take into account that the project alternatives represent a relatively small portion of the Sunrise-Douglas Community Plan water supply that was modeled. The Sunridge Properties would involve the development of only 18% of the Sunrise-Douglas Community Plan dwelling units. The No Action Alternative and Reduced Footprint Alternative represent even smaller numbers of dwelling units, 11% and 14%, respectively of the Sunrise-Douglas Community Plan dwelling units.

MODELING APPROACH

Groundwater impacts are defined as incremental changes between groundwater conditions resulting from a "baseline condition" and groundwater conditions resulting from various demand/groundwater extraction scenarios. Seven demand scenarios were defined and analyzed in the SWSI. The demand scenarios analyzed represent benchmarks in a logical progression of total annual average water demand as replacement water supplies are provided to the Mather Field and Sunrise Corridor areas for capacity lost as a result of groundwater contamination in those areas, and as buildout of the eastern portion of Sacramento County (which includes the Sunrise-Douglas Community Plan/Sunridge Specific Plan Area) occurs. Each demand scenario was modeled and compared to a baseline condition in the SWSI in order to define degree of impact.

Subsequent to release of the SWSI, the WRD determined that they preferred to separate discussion of the proposed water supply facilities in east Sacramento County into two categories: 1) facilities associated with replacing groundwater supplies within the Sunrise Corridor and Mather Field lost due to

groundwater contamination migrating off the Aerojet and Boeing properties, and 2) facilities associated with developing new groundwater (and surface water) supplies to meet growth. The purpose was to keep separate the costs of the facilities required to replace the WRD's existing water delivery capability (specifically for the Sunrise Corridor and Mather Field) damaged by groundwater contamination.

The decision to separate discussion of new water supply facilities from replacement supply facilities does not, however, impact the findings, conclusion, or recommendations of the groundwater modeling analyses. The same "stress" is placed on the groundwater basin (that is, the same volume of groundwater is extracted) and the treated groundwater is delivered to the same areas. Demand scenarios 5 and 5a address the cumulative buildout (year 2030) water amounts for the region. Consequently, the findings, conclusions, or recommendations of the groundwater modeling analyses are valid over the range of groundwater extraction amounts evaluated.

The demand scenarios from the SWSI have been redefined as described below to reflect delivery of all initial water supplies from the North Vineyard Well Field to the Sunrise-Douglas Community Plan/Sunridge Specific Plan Area, consistent with the intent of separating discussion of replacement water supplies from new growth water supplies.

DEMAND SCENARIO 1

Demand Scenario 1 assumes the well field and associated facilities are sized to meet the County's initial water demands at the SRSP area. Demand Scenario 1 assumes that groundwater provided by the proposed well field is the sole source of potable water. The annual average volume of groundwater that would be extracted at the proposed well field would be 2,265 afy. This amount of water would support a portion (approximately 3,020) of the EDUs within the SRSP area.

"SNAPSHOT IN TIME" GROUNDWATER CONDITIONS

The "Snapshot in Time" groundwater condition identifies groundwater levels as they existed in the fall of 1998. Groundwater levels in and around the Elk Grove cone of depression are approximately -50 to -60 feet below mean sea level (msl). Groundwater levels in and around the proposed well field are approximately -20 feet below msl and groundwater levels in and around the Sunrise-Douglas Community Plan/Sunridge Specific Plan Area vary from +10 to +20 feet above msl. In general, groundwater flow near the Elk Grove cone of depression flows toward the center of the cone. Groundwater flow near the Sunrise-Douglas Community Plan/Sunridge Specific Plan Area and the proposed NVWF generally flows from the east to the southwest toward the Elk Grove cone of depression.

EXISTING AND CUMULATIVE BASELINE CONDITIONS

Two different "baseline conditions" were utilized to identify and evaluate potential impacts of the proposed project on groundwater elevations. The first "baseline condition" represents existing conditions without development of the proposed project (the "Existing without Project" condition). The second "baseline condition" represents projected year 2030 groundwater conditions with projected growth (according to the Sacramento County 1993 General Plan Update) and implementation of the agreed upon Water Forum conjunctive use measures, but without development of the proposed project (the "Cumulative without Project" condition). The Cumulative without Project condition is described and analyzed in Chapter 4.

"EXISTING WITHOUT PROJECT" BASELINE CONDITION

The "Existing without Project" baseline condition is based on a groundwater model run with year 1990 levels of land use and water demand. The result is an estimate of the quasi-equilibrium state the groundwater basin would achieve if land use and water demand in the region were held constant at year 1990 levels. [Note: the groundwater model can be used to define a baseline condition associated with any prospective level of development as long as the data are available to conduct such an analysis.] The year 1990 groundwater model was also used by the Water Forum to establish the anticipated future quasi-equilibrium state of the groundwater basin assuming that land use, water demand, and groundwater extraction existing during development of the Water Forum Plan were to remain unchanged (that is, the "Existing without Project" baseline condition.) The SWSI used the 1990 model to maintain consistency with the Water Forum analyses.

The year 1990 was used in the Water Forum because that was the latest year in which the comprehensive data required to conduct the analyses were available. [Note: At the time of the Sunrise-Douglas Community Plan/Sunridge Specific Plan EIR preparation, data were available through the year 1995. Those data were used to validate the results of the Sacramento County IGSM.] The Water Forum also identified "Cumulative without Project" baseline conditions for the years 2000, 2010, 2020, and 2030 based on projected growth (as identified in the Sacramento County 1993 General Plan Update) to evaluate the effectiveness of the conjunctive use measures ultimately agreed upon in the Water Forum.

Comparative analyses conducted for the Sunrise-Douglas Community Plan/Sunridge Specific Plan EIR indicate the incremental impact of the 10,000 af/year volume of groundwater extraction anticipated for the proposed project is similar regardless of the projected level of development and groundwater extraction elsewhere. That is, regardless of the "baseline condition" selected for evaluation of the proposed project, the incremental impacts on groundwater condition of a 10,000 af/yr extraction at the proposed well field site are similar. Incremental impact analyses conducted for the Water Forum yielded similar results.

The conjunctive use plan adopted by the Water Forum provides mitigation measures for impacts to the groundwater basin (relative to the "Existing without Project" baseline condition) resulting from planned growth in Sacramento County pursuant to the 1993 General Plan Update. That conjunctive use plan served as the basis for the Water Forum Plan's programmatic Environmental Impact Report (State of California Clearinghouse Number 9582041) certified by the two lead agencies (the City of Sacramento and the County of Sacramento) in December 1999. The impacts to the groundwater basin (and the effectiveness of the mitigation measures) were determined by comparing the quasi-equilibrium states provided an estimate of the potential impact of the proposed well field relative to existing conditions. It also permitted evaluation of the proposed well field within the context of the Water Forum conjunctive use plan.

Applying the year 1990 model with and without the proposed well field in operation and comparing the resulting quasi-equilibrium states provided an estimate of the potential impact of the proposed well field relative to existing conditions. It also permitted evaluation of the proposed well field within the context of the Water Forum conjunctive use plan.

MODELING RESULTS

Information presented in the groundwater modeling analysis is important to assessing the impacts of the proposed project, under varying groundwater extraction amounts, on the following:

- Vertical changes in groundwater elevations

- Vertical difference in elevation between Aquifer 1 and Aquifer 2
- Time it takes for known contaminant plumes to reach the proposed North Vineyard Well Field

The results of the groundwater modeling analysis presented in the SWSI are in the impact analyses.

3.3.4.3 IMPACT ANALYSIS

Under the No Action Alternative, it is assumed that 63% of the Proposed Project Alternative development would take place. Under the Reduced Footprint Alternative, 77% of the Proposed Project Alternative development would take place. The impact analyses for the Proposed Project Alternative, Reduced Footprint Alternative and No Action Alternative vary only in degree, corresponding directly to the anticipated level of development. The impacts to water issues based on these varying levels of development do not result in impacts that are considerably different for each alternative. Therefore, separate impact analyses have not been developed for each alternative.

IMPACT3.3-1 - Potential for an increase in the rate and volume of drainage runoff from the site. *Construction and long-term impacts may increase the rate and volume of drainage runoff from the site.*

Proposed Project Alternative, Reduced Footprint Alternative, and No Action Alternative - The six properties lie in the headwaters of Laguna and Morrison Creeks, and in an area with a large number of vernal pools, due to local soil properties. Because of the nature of the project, in particular the high percentage of each property that will be disturbed, contoured, and the drainage system altered, changes to the local hydrology can be expected.

The peak flows produced by development of the Sunrise-Douglas Community Plan Area are lower than the ultimate buildout conditions model prepared by Montgomery-Watson. The ultimate buildout model assumes that the entire Morrison and Laguna Creek watersheds are developed, while the project model develops only a portion of the watershed. By developing only a portion of the watersheds, lower post-development peak flows are produced.

The proposed mitigation for reducing post-development flows to pre-development limits is 14, in-line, on-site detention facilities ranging from 5 to 53 acres in size. Nine of these would be servicing Morrison Creek, and the remaining five would be servicing Laguna Creek. A total of 349 af of flood detention storage are proposed along Morrison Creek, while 129 af of flood storage are proposed along Laguna Creek.

The detention facilities which would occur under each of the three alternatives would reduce peak post-development flows to at least pre-development levels; and at two of the three Folsom South Canal creek crossings, the peak post-development flows would be detained even further such that they do not exceed the capacity of the overchutes.

The proposed detention facilities which would be constructed under each of the three alternatives would be incorporated into joint use park/detention facilities and some stand-alone facilities. During the design phase of individual villages within the Specific Plan area, coordination would be maintained with the appropriate park district regarding joint-use of the facilities. Park district approval would be obtained prior to construction of such facilities. In addition, as individual villages are designed, coordination would be maintained with Sacramento County WRD regarding wet or dry extended basins. All facilities designed for the Specific Plan area would comply with the County's Comprehensive Stormwater Management program. County approval would be obtained prior to construction of detention facilities.

Development of the, Sunridge Specific Plan Area would increase the rate and volume of drainage runoff from the site. However, implementation of drainage and detention improvements which ensure that post-development peak flows are reduced to at least pre-development levels would mitigate potential drainage and flooding impacts to a **less than significant** level.

Mitigation Measure 3.3-1. Implementation of Drainage Study Recommendations

Developers within the project area will implement the improvements described in the "Final Master Drainage Study for the Sunrise-Douglas Community Plan Area" (Spink Corporation, October 16, 1998) as amended by the "Amendment to Final Master Drainage Study, Sunrise-Douglas Community Plan Area" (Amendment) (MHM Engineers & Surveyors, October 19, 2001). Such improvements will be designed to ensure that post-development peak flows do not exceed existing peak flows and do not exceed the capacity of the two Folsom South Canal overchutes at Lower Morrison Creek to the satisfaction of the County Water Resources Division (WRD). Construction of the improvements may be phased as described in the Final MDS and subject to the approval of the WRD, so long as the project proponent(s) provide hydrologic/hydraulic analyses which demonstrate that the phased improvements will reduce peak flows to at least pre-development levels of and to the capacity of the two Folsom South Canal overchutes at lower Morrison Creek to the satisfaction of the WRD.

Detailed plans for the design and construction of all proposed drainage, flood control and water quality improvements, consistent with the Final MDS and Amendment will be submitted to the County WRD for review and approval.

IMPACT3.3-2 - Potential for discharges that affects surface water quality. *Construction discharges and long-term urban runoff impacts may result in discharges that impact surface water quality.*

Proposed Project Alternative, Reduced Footprint Alternative, and No Action Alternative -All three alternatives have the potential to impact surface water quality due to entrained sediments and pollutants in construction and urban runoff. There are no data available to describe the existing quality of site runoff. However, it can be assumed that the existing agricultural/grazing uses would likely yield far less heavy metals in runoff than could be expected in urban runoff. Similarly, water quality would be expected to improve for some constituents, notably sediment and nutrients, which are the most common pollutants associated with agriculture.

The SWRCB has established numerical criteria for all inland surface waters for certain constituents. These criteria would be applicable to the water body identified to receive runoff from a proposed development site. Urban stormwater discharges are regulated and permitted as a part of the NPDES. The NPDES stormwater management program calls for implementation of "BMPs" to the "maximum extent practicable." BMPs consist of structures or practices which control non-point sources of pollution which include agricultural runoff, urban runoff, and runoff from construction sites.

Sacramento County has obtained an NPDES permit from the CVRWQCB. Implementation and enforcement is achieved through the existing County Land Grading and Erosion Control Ordinance, with which the project must comply during the period of construction. A Stormwater Pollution Prevention Plan would be required for each subdivision design to address erosion control and water quality issues after construction, during the life of the project.

Source control measures are required for this project in accordance with *Volume 5 of the Draft City/County Drainage Manual—Manual of Standards for Design of New Development On-Site Stormwater Quality Control Measures*. Source control measures on the improvement plans would include provision for a permanent storm drainage message at each storm drain inlet that says "No

Dumping-Flows To Creek" (or other approved message). Other source control measures(s) should also be used in accordance with specific commercial, industrial, or multi-family residential activities referenced in Volume 5 of the Drainage Manual. The final design of the proposed source controls would be approved by the Chief of Water Resources.

The proposed water quality basins would settle out sediments and some contaminants from the project's urban runoff before it is discharged from the site. In addition to the proposed basins, proposed drainage channel improvements would be trapezoidal with grassy swales for low flows to aid in water quality enhancement.

Complying with the county grading and erosion ordinances, and county and state stormwater quality control requirements, is expected to reduce the project's surface water quality impacts to **less than significant**.

Mitigation Measure 3.3-2. Provide stormwater quality source and treatment measures

Developers within the project area will provide stormwater quality source and treatment measures consistent with Volume 5 of the City/County Drainage Manual. In addition, developers will use low impact development (LID) measures throughout the project. The final design of source and treatment control measures will be subject to the approval of the County WRD.

Low Impact Development is a sustainable practice that benefits water supply and contributes to water quality protection. Traditional storm water management collects and conveys storm water runoff through storm drains, pipes, or other conveyances to a centralized storm water facility. LID uses site design and storm water management to maintain the site's pre-development runoff rates and volumes. The goal of LID is to mimic a site's predevelopment hydrology by using design techniques that infiltrate, filter, store, evaporate, and detain runoff close to the source of rainfall. LID provides economical as well as environmental benefits. LID practices result in less disturbance of the development area, conservation of natural features, and is less expensive than traditional storm water controls. The cost savings applies not only to construction costs, but also to long-term maintenance and life cycle cost.

LID includes specific techniques, tools, and materials to control the amount of impervious surface, increase infiltration, and improve water quality by reducing runoff from developed sites, and reducing costly infrastructure. LID practices include:

- bioretention and rain gardens
- rooftop gardens
- sidewalk storage
- vegetated swales, buffers and strips; tree preservation
- roof leader disconnection
- rain barrels and cisterns
- permeable pavers
- soil amendments
- impervious surface reduction and disconnection
- pollution prevention and good housekeeping

The project incorporates a key LID practice by reducing post-development flows to pre-development limits through the use of 14 on-site detention facilities (as discussed in Impact 3.3-1).

IMPACT3.3-3 - Potential for changes in groundwater elevations around the Elk Grove cone of depression. *Groundwater pumping from the North Vineyard Well Field may lower the groundwater elevations around the Elk Grove cone of depression.*

Proposed Project Alternative, Reduced Footprint Alternative, and No Action Alternative -Under Demand Scenario 1, groundwater elevations in and around the Elk Grove cone of depression would remain essentially unchanged as a result of the proposed well field under the three alternatives. Impacts to groundwater elevation around the Elk Grove cone of depression under these scenarios would be considered **less than significant**.

The Sacramento County IGSM estimates groundwater and piezometric surface elevations for Aquifers 1 and 2 respectively. Elevation contour maps were generated to illustrate groundwater conditions at two representative points in the 70-year hydrologic period of record; at the end of simulation water year 15 and at the end of simulation water year 63 (water years extend from October 1 of one year through September 31 of the subsequent year).

Simulation year 15 occurs at the end of a drought sequence and is representative of the basin in a high stressed state. Conversely, year 62 occurs at the end of a wet period and is representative of the basin at the end of a recovery period. "Dry year" and "wet year" contour maps, at the end of year 15 and 62 respectively, were developed for the baseline condition and for each demand scenario for both Aquifers 1 and 2. In addition, "difference" maps were developed that illustrate the incremental change between impacts to the basin under the baseline condition and under each water demand scenario. These maps were presented in the Sunrise-Douglas Community Plan/Sunridge Specific Plan EIR.

BASELINE ANALYSIS

Through groundwater modeling, wet and dry groundwater elevation contours were plotted for Aquifer 1, and piezometric surface elevation contours were plotted for Aquifer 2 under the (Cumulative without Project) baseline condition (year 2030 without implementation of the water supply plan). An approximate 30 ft difference in elevation between wet years and dry years occurs in and around the Elk Grove cone of depression for both Aquifer 1 and Aquifer 2.

Comparison of baseline condition wet and dry year contours with "Fall 1998 Snapshot in Time" groundwater surface elevation indicates that groundwater elevation is some portions of the analysis area are expected to slightly decline through the year 2030, even with implementation of the Water Forum Agreement. The groundwater cone of depression in Elk Grove will deepen, particularly in dry years, by approximately 40 feet under baseline conditions. However, in other portions of the analysis area groundwater elevations are expected to stabilize. For example, groundwater elevations in and around the proposed well field will fluctuate within the range of current conditions (groundwater elevations should be higher in wet years and lower in dry years). Similarly, groundwater elevations in the eastern portion of the analysis area should fluctuate in the range of current conditions.

Groundwater flow in Aquifer 1 generally trends toward the Elk Grove cone of depression with the American, Sacramento and Cosumnes Rivers acting as sources of recharge for both wet and dry years. The piezometric surface in Aquifer 2 shows a uniform gradient of approximately 10 feet per mile in both wet and dry years.

DEMAND SCENARIO 1 ANALYSIS

Under Demand Scenario 1, wet and dry year groundwater elevations in and around the Elk Grove cone of depression would differ by 20 to 30 feet for Aquifer 1, and piezometric elevations would differ by about 30 feet for Aquifer 2. The magnitude of these fluctuations between the wet and dry years is approximately the same as that of baseline conditions for all three alternatives.

Under fall 1998 conditions, groundwater levels near the Elk Grove cone of depression were approximately -60 feet msl, and under baseline conditions without implementation of the project, groundwater elevations are -100 feet msl. Implementation of Demand Scenario 1 would also result in groundwater levels around -100 feet msl. These elevations do not exceed the groundwater stabilization levels identified in the Water Forum Plan. Therefore, impacts to groundwater levels in and around the Elk Grove cone of depression under Demand Scenario 1 would be **less than significant** for all three alternatives.

Mitigation Measure 3.3-3. Pumping restrictions

The City of Rancho Cordova will not grant entitlements for urban development within the Sunrise-Douglas Plan Area (i.e. subdivision maps, parcel maps, use permits, building permits, etc.) unless agreements and financing for supplemental water supplies are in place.

In order to avoid potentially significant adverse impacts on existing shallow domestic wells and on known contaminant plumes, groundwater production from the North Vineyard Well Field will not exceed 10,000 af/yr or an amount that would result in no more than a 10-foot decline in regional groundwater surface elevations from existing conditions in the vicinity of the well field, whichever occurs first. Such 10 foot decline will relate to a decrease in groundwater elevations from what groundwater elevations in and around the well field would have been absent implementation of the proposed well field. For purposes of this mitigation measure groundwater elevations absent the Project well are defined as the 70-year hydrologic trace of groundwater elevations associated with the IGSM Static Baseline Model 2000 presented in the Baseline Conditions for Groundwater Yield Analysis Final Report (Montgomery Watson, 1997). Use of this hydrologic trace accounts for fluctuations in groundwater elevations resulting from changing hydrologic conditions. These limitations on the volume of groundwater consumption will remain in place unless the SCWA Board of Directors determines in a public hearing that: (1) the additional groundwater production (beyond the 10,000 acre-feet annually (afa) or 10-foot drop limit) is acceptable and consistent with the goals of the Zone 40 Conjunctive Use Program and the Water Forum Plan; (2) the additional groundwater extraction (beyond the 10,000 afa or 10-foot drop limit) will not substantially affect the migration of known contaminant plumes; and (3) impacts to shallow domestic wells in the vicinity of the well field resulting from the additional groundwater extraction (beyond the 10,000 afa or 10-foot drop limit) will be adequately mitigated. Such mitigation might include redrilling or replacement of existing domestic wells or abandonment of existing domestic wells and connection to the public water system.

IMPACT3.3-4 - Potential for changes in groundwater elevations adjacent to the proposed well field.
Groundwater pumping from the North Vineyard Well Field may reduce the groundwater elevations adjacent to the proposed well field.

Proposed Project Alternative, Reduced Footprint Alternative, and No Action Alternative - Groundwater elevations in the vicinity of the proposed North Vineyard Well Field would decline by 10 feet or less relative to the baseline under Demand Scenario 1. Therefore, impacts under these scenarios would be **less than significant** for all three alternatives.

BASELINE ANALYSIS

With increased development in Sacramento County, groundwater elevations in some portions of the analysis area are expected to slightly decline through the year 2030, even with implementation of the Water Forum Agreements. However, groundwater elevations in and around the proposed well field would fluctuate in the range of current conditions, that is, groundwater elevations are expected to be higher in wet years and lower in dry years.

DEMAND SCENARIO 1 ANALYSIS

Modeling indicated that in the vicinity of the proposed well field, groundwater elevations of Aquifer 1 would be about 30 feet lower in dry years as compared to wet years under Demand Scenario 1. Aquifer 2 shows a 25-foot difference under the same conditions. The magnitude of these fluctuations between wet and dry years is approximately the same as that estimated under the baseline condition for all three alternatives.

Comparison of Demand Scenario 1 to the baseline condition shows that groundwater elevations in Aquifer 1 in and around the proposed well field would be 2 feet lower than under baseline conditions in dry and wet years. Piezometric surface elevations in Aquifer 2 in wet and dry years would be approximately 8 to 10 feet lower than baseline conditions. The estimated 2-foot decline in Aquifer 1 is the most relevant because domestic groundwater wells are typically completed in Aquifer 1. Because groundwater levels would decrease slightly in and around the proposed well field, and would not exceed a 10-foot drop in groundwater levels, consistent with County goals, groundwater impacts in that area would be considered **less than significant** for all three alternatives.

Mitigation Measure 3.3-4. Well Siting

In order to minimize the potential for localized dynamic draw down impacts upon existing shallow domestic wells in the immediate vicinity of the proposed North Vineyard Well Field wells, siting of the North Vineyard Well Field municipal groundwater wells will maintain a minimum 800-foot distance from existing private domestic wells to the extent that it is practical and feasible.

IMPACT3.3-5 - Potential for changes in groundwater elevations and around known contaminant plumes.
Groundwater pumping from the North Vineyard Well Field may reduce the groundwater elevations in and around known contaminant plumes.

Proposed Project Alternative, Reduced Footprint Alternative, and No Action Alternative - The proposed North Vineyard Well Field would have no appreciable impacts on groundwater conditions in and around known contaminant plumes under Demand Scenario 1.

Table WS-2 summarizes the difference in groundwater and piezometric surface elevations for Aquifers 1 and 2 in wet and dry years for each of the demand scenarios compared to baseline conditions at the location of the nearest known contaminant plume (Site 7 VOC Plume).

Aquifer 1 groundwater elevations in and around known contaminant plumes remain largely unchanged under Demand Scenario 1. At some locations, minor impacts versus the baseline condition are predicted. Potential impacts would be addressed by ongoing and planned remediation efforts with coordination.

Aquifer 2 piezometric surface elevations in and around known contaminant plumes also evidence minor impacts. An increase in piezometric elevation could result in the migration of groundwater from Aquifer

2 to Aquifer 1; however, these impacts would be accommodated by ongoing and planned remediation efforts with coordination, therefore impacts under the three alternatives is **less than significant.**

Mitigation Measure 3.3-5. No mitigation is required for this impact.

IMPACT3.3-6 - Potential for changes in rate of contaminant plume migration.. *Groundwater pumping from the North Vineyard Well Field may change the rate of contaminant plume migration at known contaminant plumes.*

Proposed Project Alternative, Reduced Footprint Alternative, and No Action Alternative - Under worst case conservative conditions (i.e., assuming no remediation of known contaminant plumes occurs) the average estimated travel times from known contaminant plumes to reach the proposed well field site would be at least 50 years under Demand Scenario 1, similar to what would occur under baseline conditions. Therefore, contaminant plume migration under these scenarios would be **less than significant** for all three alternatives.

The objective of the SWSI was to evaluate the likelihood of whether known contaminant plumes, described in detail in Section 3.10 Hazardous, Toxic, and Radioactive Waste, could migrate into the groundwater underlying the proposed well field. The known contaminant plumes evaluated include:

- GET F Sprayfield – approximately 7.0 miles northeast of the well field
- Aerojet "Beta Complex" – approximately 6.0 miles northeast
- Mather Field AC & W site – approximately 4.25 miles northeast
- Kiefer Landfill – approximately 6.0 miles east

Travel times were estimated by applying average horizontal flow rates and average vertical flow rates for different geographic locations within the analysis area. It should be noted that the flow rate varies along the flow path between the leading edges of known contaminant plumes and the location of the proposed well field.

BASELINE ANALYSIS

Based on the average flow rates, estimated travel times for contaminants originating from any of the known contaminant plumes referenced above to the proposed well field are greater than 50 years. Estimated travel times for plumes that are more distant are typically in excess of 100 years.

DEMAND SCENARIO 1 ANALYSIS

Based on the average flow rates, estimated travel times for contaminants originating from any of the known contaminant plumes referenced above to the proposed well field would be greater than 50 years for Demand Scenario 1. Estimated travel times for plumes that are more distant are typically in excess of 100 years. Because these travel times are the same or slower than what would occur under baseline conditions, impacts related to contaminant migration would be **less than significant** for all three alternatives.

Mitigation Measure 3.3-6. No mitigation is required for this impact.

IMPACT3.3-7 - Potential migration of lower quality (higher TDS) groundwater in Aquifer 2 up into Aquifer 1. *Groundwater pumping from the North Vineyard Well Field may result in the migration of lower quality (higher TDS) groundwater in Aquifer 2 up into Aquifer 1*

Proposed Project Alternative, Reduced Footprint Alternative, and No Action Alternative - No substantial migration of lower quality (higher TDS) groundwater from Aquifer 2 to Aquifer 1 is anticipated for the analysis area under any of the demand scenarios. Therefore, this impact is considered to be **less than significant** for all three alternatives.

It is a WRD goal to maintain groundwater levels in Aquifer 1 approximately 10 feet higher than piezometric surface elevations in Aquifer 2. The objective is to minimize or prevent, migration of lower quality (that is higher TDS) groundwater in Aquifer 2 upwards into Aquifer 1.

Groundwater elevations in Aquifer 1 are typically higher than the piezometric surface in Aquifer 2 throughout the analysis area under baseline conditions and all demand scenarios. Although the WRD goal of maintaining a 10-foot differential would not be met in all locations, a relatively constant downward gradient from Aquifer 1 to Aquifer 2 would occur under demand scenario 1. Because substantial migration of lower quality (higher TDS) groundwater from Aquifer 2 to Aquifer 1 would not occur, this impact is considered to be **less than significant** for all three alternatives.

Mitigation Measure 3.3-7. No mitigation is required for this impact.

IMPACT3.3-8 - Potential for exceedance of drinking water standards. *Groundwater from the North Vineyard Well Field may exceed drinking water standards set forth in Title 22 of the California Code of Regulations.*

Proposed Project Alternative, Reduced Footprint Alternative, and No Action Alternative - Groundwater extracted from the North Vineyard Well Field would meet California public drinking water standards under all demand scenarios. Some treatment for iron and manganese may be required to meet California public drinking water quality standards. These are aesthetic rather than health-related impacts. Therefore, this impact would be considered **less than significant** for all three alternatives.

The previously proposed water supply plan for the Sunrise-Douglas Community Plan/Sunridge Specific Plan Area (addressed in the March 1999 Draft EIR) included extraction of groundwater from a well field in the Sunrise-Douglas Community Plan/Sunridge Specific Plan Area. Comments on the March 1999 Draft EIR from various water resource and regulatory agencies expressed concerns regarding the potential migration of existing contaminant plumes from adjacent properties into the groundwater underlying the Sunrise-Douglas Community Plan/Sunridge Specific Plan Area. Representatives from DHS (now CDPH) indicated their probable refusal to issue potable use permits for groundwater extracted from beneath the Sunrise-Douglas Community Plan/Sunridge Specific Plan Area, even with wellhead treatment. DHS offered the same opinion for groundwater underlying Mather Field, the Sunrise Corridor Water Maintenance District, and the Citizens Water Resources Security Park franchise area.

In response to these concerns, the applicants revised the project's proposed water supply plan to obtain groundwater from an off-site (North Vineyard Well Field) well field rather than from beneath the Sunrise-Douglas Community Plan/Sunridge Specific Plan Area. As noted previously, the average estimated travel times from known contaminant plumes to reach the proposed off-site (North Vineyard) well field would be at least 50 years under Demand Scenario 1, similar to what would occur under baseline conditions.

Note that the estimated travel times for contaminant plumes are conservative, in that they are based on the assumption that no remediation of contaminant plumes occurs.

DHS indicated in a letter to the Sunrise-Douglas Community Plan/Sunridge Specific Plan EIR preparers that they believe the proposed North Vineyard Well Field would provide a safe supply of drinking water for the indefinite future (CDHS, 2001a). On July 3, 2001, DHS reiterated its position on the viability of groundwater extraction wells at the Eagles Nest and the Sunrise-Douglas Community Plan/Sunridge Specific Plan sites for use as potable supplies (CDHS, 2001b).

The proposed North Vineyard Well Field would extract groundwater from the deeper aquifer, which typically requires treatment for the reduction of iron and manganese concentrations that exceed Title 22 drinking water quality secondary standards related to aesthetic concerns. Elevated levels of iron and manganese do not pose a health hazard but may result in odor, taste, and color problems and staining of plumbing fixtures and laundry.

Based on the DHS letters the proposed North Vineyard Well Field would provide a safe supply of drinking water for the indefinite future, although some treatment for iron and manganese may be required to meet Title 22 secondary (i.e., aesthetic, not health-based) water quality standards (Zuccaro, 2001a,b). Therefore, the potential for the proposed North Vineyard Well Field groundwater supply to exceed Title 22 drinking water standards would be considered **less than significant** for all three alternatives.

Mitigation Measure 3.3-8. No mitigation is required for this impact.

IMPACT3.3-9 – Changes in groundwater elevation adjacent to the proposed well field. *Groundwater pumping from the North Vineyard Well Field may lower groundwater elevations adjacent to the proposed well field.*

Proposed Project Alternative, Reduced Footprint Alternative, and No Action Alternative - Groundwater elevations are expected to decline approximately 10 feet in the vicinity of the proposed well field for every 10,000 afa pumped. A 10-foot or greater drop in elevation relative to the existing groundwater level would be considered a **significant and unavoidable** impact because this physical change in groundwater level could result in economic impacts to existing shallow domestic well operations due to increased energy (pumping) costs or the need to deepen existing wells to extract water. Therefore, mitigating measures will likely be needed to reduce impacts to existing wells adjacent to the well field if and when pumping at the well field exceeds approximately 10,000 afa Such measures could include either deepening existing shallow domestic wells or connecting existing shallow well users to the public water system. A monitoring well system would need to be installed in the vicinity of the well field to precisely determine if and when pumping results in a 10-foot decline relative to existing groundwater elevations and the need for mitigating impacts to private domestic wells. The **significant and unavoidable** impact on nearby domestic wells anticipated once pumping at the North Vineyard Well Field exceeds approximately 10,000 afa highlights the need for implementation of the Zone 40 Conjunctive Use Program prescribed by the Water Forum Plan.

In addition to the long-term, regional decline in groundwater elevations from existing conditions described above, there will be dynamic draw down impacts associated with the North Vineyard Well Field. The phenomenon known as "dynamic draw down" in groundwater elevation occurs in the immediate vicinity of the groundwater well when the well is in operation. Dynamic draw down impacts are limited in areal extent (known as the radius of influence of the well) and can be mitigated through appropriate well spacing. Preliminary analyses indicate that maintaining a minimum 800-foot separation between the North Vineyard Well Field wells and existing private domestic wells will be adequate to mitigate the impact of dynamic draw down on local groundwater levels.

The estimated 10-foot decline in the static, regional groundwater surface elevation in and around the proposed well field for every 10,000 afa pumped as described above, should not be confused with the dynamic draw down in groundwater elevation that occurs at the well head while a well is in operation. Dynamic draw down at the well head has a limited areal extent (referred to as the "radius of influence" of the well) which occurs only when the well is in operation. The areal impact of draw down at the well head is typically addressed by appropriate well spacing (i.e., the well is constructed at a distance such that adjacent wells are beyond the radius of influence of the well). Preliminary analyses indicate that a separation distance of 800 feet between the North Vineyard Well Field wells and existing private domestic wells will be adequate to mitigate the impact of dynamic draw down on local groundwater levels. This 800-foot separation was determined by calculation of the anticipated radius of influence of wells in the proposed well field based on known aquifer parameters.

Mitigation Measure 3.3-9. Development Tied to Supplemental Supplies

Entitlements for urban development within the Sunrise-Douglas Community Plan Area (i.e. subdivision maps, parcel maps, use permits, building permits, etc.) will not be granted unless agreements and financing for supplemental water supplies are in place.

IMPACT3.3-10 – Increased need for development of long-term regional surface and groundwater supplies. *Long-term water supply demands in Zone 40 will be met only with the implementation of planned surface and groundwater supply projects.*

Proposed Project Alternative, Reduced Footprint Alternative, and No Action Alternative - Implementation of the Zone 40 WSMP, Zone 41 UWMP, and Zone 40 WSIP, will provide SCWA Zone 40 with reliable, long-term groundwater supplies. SCWA has secured (and is in the process of securing additional) surface water entitlements that would allow SCWA to meet its projected 2030 water demands. SCWA intends to continue to extract groundwater to meet its customer demands within the limits of the negotiated sustainable yield of the Central Basin. In addition, SCWA has the transfer of ownership rights of GET Remediated Water discharged by Aerojet for beneficial use within Zone 40. Therefore, SCWA's groundwater supplies are considered reliable, as are those surface water supplies for which SCWA has existing CVP contracts (the SMUD and Fazio supplies), and there is reasonable likelihood that these water supplies will continue to be available.

In order to implement the provisions of the Water Forum Agreement, SCWA initiated environmental review of the North Vineyard Well Field project and separately, the Zone 40 Master Plan Update. The North Vineyard Well Field project would include up to six wells, storage tanks, pump stations, treatment facilities, and a pipeline network to provide groundwater initially to the Mather Field, Sunrise Corridor, Security Park, and Sunridge Specific Plan Areas. Under the Zone 40 Master Plan Update, Sacramento County proposes construction of a surface water diversion structure on the Sacramento River, treatment facilities, and a network of pipelines to convey surface water throughout the Zone 40 service area. The North Vineyard Well Field would ultimately be integrated with the Zone 40 surface water facilities to provide conjunctively managed surface and groundwater to the region, which includes the Sunrise-Douglas Community Plan/Sunridge Specific Plan Area.

The current master plan and fee program for Zone 40 supports a conjunctive use water delivery system commensurate with the conjunctive use requirements of the Zone 40 area. Technical studies completed for the Sunrise-Douglas Community Plan/Sunridge Specific Plan project identify the conjunctive use facilities necessary to deliver adequate volumes of surface water to manage groundwater yields within Zone 40 at optimal levels as defined by the approved Water Forum Agreement. SCWA would be responsible for constructing those Zone 40 facilities.

Although project participation in Zone 40's conjunctive use program would be sufficient to ensure long-term reliable water supply in normal, dry, and multiple-dry years, project-specific environmental analysis of the Zone 40 Master Plan Update and the facilities programmed therein to implement the surface- and groundwater elements of the plan has not been conducted, nor has detailed planning or facility design commenced. While it is likely that Zone 40 facilities will be planned and implemented in a timely manner, provision of a long-term reliable water supply sufficient to meet the buildout demands of the project and other planned development in the south county area, consistent with the conjunctive use elements of the Water Forum Agreement, cannot be ensured until facilities are approved.

Because Zone 40 water is allocated on a first-come, first-served basis, the water available to the project under the Zone 40 WSMP and the Zone 41 UWMP could be affected by rapid development in other portions of Zone 40 or by expansion of the City of Elk Grove's urban services area. Neither scenario has occurred or is anticipated to occur in the immediate future. As development occurs, SCWA will track service demands in relation to available supplies. Specific projects that are planned for in the future would be served with water supplies as the necessary conveyance and treatment facilities to deliver water to the newly developing areas are developed.

The City conducted a water supply evaluation for the City General Plan that concluded that water supplies are currently available to meet the water demands associated with buildout of the City's corporate limits, but the City would be required to secure additional water supplies to meet its projected 2050 demands. Increased water demands could result in increased groundwater pumping, an increased demand for new surface-water supplies, an increased demand for recycling and water conservation programs, and/or an increased demand for local water purveyors to expand their service areas. Potential projects to secure additional supplies could include the negotiation of new water right transfers; construction of new diversion structures; expansion or construction of new water treatment plants; and construction of new potable-water and recycled-water distribution facilities (City of Rancho Cordova, 2006). The alternatives' impact on the need to develop long-term regional surface and groundwater supplies would be **significant and unavoidable**.

Mitigation Measure 3.3-10. Development Tied to Supplemental Supplies

Entitlements for urban development within the Sunrise-Douglas Community Plan Area will not be granted unless agreements and financing for supplemental water supplies are in place.

In addition, developers will encourage the City to adopt EPA-recommended smart growth water conservation landscaping measures. Landscaping ordinances can provide water conservation benefits by encouraging the use of water-saving landscaping or xeriscaping™. Ordinances might call for the use of native species, especially perennials, in landscaping. Such plants can reduce water use because they are well adapted to the climate and therefore require less water and maintenance. An ordinance might encourage the expanded use of xeriscaping™-an approach to landscaping that relies on the use of plants and landscaping techniques that explicitly reduce water use.

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3.4 AIR QUALITY

This section describes the affected environment, regulatory framework, environmental consequences and mitigation of potential consequences with respect to air quality. Information presented for the affected environment for air quality is based upon prior environmental documents.

3.4.1 AREA OF ANALYSIS

The Sunridge Specific Plan Area is located in the City of Rancho Cordova within Sacramento County. For purposes of managing and improving air quality, California is divided into air quality basins, each managed by a local agency. The air quality basins were defined based on the relationship between geography and air quality. The nature of air quality is such that air flows beyond property boundaries, but is generally bounded by mountain ranges. Sacramento County is located within the Sacramento Valley Air Basin, which is a relatively flat valley bordered by mountains on the east, west, and north.

3.4.2 AFFECTED ENVIRONMENT

Air quality in the Sacramento Valley Air Basin is determined by such natural factors as topography, climate, and meteorology, in addition to the presence of existing air pollution sources and conditions. The mountains surrounding the Sacramento Valley create a barrier to airflow, which can trap air pollutants in the valley when meteorological conditions are right. Prevailing winds are from the south-southwest. The highest frequency of air stagnation occurs in the autumn and early winter when large high-pressure cells lie over the valley. The lack of surface wind during these periods and the reduced vertical flow caused by less surface heating reduces the influx of outside air and allows air pollutants to become concentrated in a stable volume of air. The surface concentrations of pollutants are highest when these conditions are combined with smoke from agricultural burning or when temperature inversions trap cool air, fog and pollutants near the ground.

The ozone season (May through October) in the Sacramento Valley is characterized by stagnant morning air or light winds with the Delta sea breeze arriving in the afternoon out of the southwest. When the warm air layer traps a cooler air layer closer to the ground, the meteorological inversion layer develops and causes a photochemical reaction between reactive organic gases (ROG) and nitrous oxide (NO_x) to form ozone. Usually the evening breeze transports the airborne pollutants to the north out of the Sacramento Valley. During about half of the days from July to September, however, a phenomenon called the "Schultz Eddy" prevents this from occurring. Instead of allowing for the prevailing wind patterns to move north transporting pollutants out of the valley, the eddy causes the wind pattern to circle back south toward Sacramento increasing the likelihood of violating federal or state standards. The eddy normally dissipates around noon when the Delta sea breeze arrives.

AIR QUALITY IN SACRAMENTO COUNTY

Rancho Cordova is located within Sacramento County, which is located at the southern end of the Sacramento Valley Air Basin. Sacramento County was designated nonattainment of national and state ambient air quality standards (AAQS) for ozone and particulate matter 10 and 2.5 micron (PM_{10} and $PM_{2.5}$). The County was designated attainment or unclassified for all remaining pollutants.

Air quality conditions in Sacramento County are influenced by two main categories of emission sources; mobile and stationary. The main mobile source of regulated constituents (ROG, NO_x, carbon monoxide (CO), and PM_{10} and $PM_{2.5}$) is light-duty passenger vehicles. The main stationary source of CO in

Sacramento County is fuel combustion from furnaces and boilers; the main stationary source of ROG is solvent use. Commercial and industrial fuel combustion represents the largest source of NO_x emissions. The largest stationary source of PM_{10} is aggregate extraction.

Sacramento County is part of the larger Sacramento Federal Ozone Nonattainment Area and has been designated a "severe" nonattainment area for the Federal 1- and 8-hour ozone standards, and is designated a "serious" nonattainment area for the state 1- and 8-hour ozone standard (Table 3.4-1). Although recent monitoring data show the area is attaining the PM_{10} NAAQS, the District remains nonattainment for PM_{10} until EPA approves a "redesignation to attainment request" from the state. Sacramento County is also part of a larger area that has been designated by EPA as nonattainment for the 2006 $PM_{2.5}$ NAAQS.

Table 3.4-1
Sacramento County Air Attainment Status

Parameter	California Standard	Federal Standard
Ozone	Non-Attainment Classification = Serious (1 hour and 8 hour Standards)	Non-Attainment, Classification = Severe (1 hour and 8 hour Standards)
Particulate Matter 10 Micron	Non-Attainment (24 hour Standard and Annual Mean)	Non-Attainment, Classification = Moderate (24 hour standard)
Particulate Matter 2.5 Micron	Non-Attainment (Annual Standard)	Non-Attainment (24 hour Standard and Annual Mean)
Carbon Monoxide	Attainment (1 hour and 8 hour Standards)	Attainment (1 hour and 8 hour Standards)
Nitrogen Dioxide	Attainment (1 hour Standard)	Attainment (Annual Standard)
Sulfur Dioxide	Attainment (1 hour and 24 hour Standards)	Attainment (3 hour, 24 hour, and Annual Standards)
Lead	Attainment (30 Day Standard)	Attainment (Calendar Quarter)
Visibility Reducing Particles	Unclassified (8 hour Standard)	No Federal Standard
Sulfates	Attainment (24 hour Standard)	No Federal Standard
Hydrogen Sulfide	Unclassified (1 hour Standard)	No Federal Standard

California area designations based on data collected during 2001 – 2003.
Source: SMAQMD, 2010b

The Sacramento Metropolitan Air Quality Management District (SMAQMD) has developed regulations and programs to minimize emissions of all air pollutants including those that exceed state and Federal standards. Due in part to the implementation of these regulations and programs, the Sacramento region's air quality continues to improve (SMAQMD, 2009).

MONITORING DATA

The SMAQMD conducts ambient air quality monitoring for ozone and particulate matter with the Sacramento Valley Basin. Data collected from 2004 to 2008 demonstrate the most current environmental conditions in the project area (see Table 3.4-2). The ozone monitoring data from Folsom Natoma Street is the closest ozone monitoring station to the project site. The data from this station shows exceedances

of the ozone standard for several days each year exceeding the 1- and 8-hour averages. The nearest monitoring station to the project site for PM_{10} are the two Branch Center stations near Bradshaw Road. Data from these stations indicate that the PM_{10} standard has been exceeded between 24 and 69 days per year (CARB, 2010).

Table 3.4-2
Summary of Air Pollutant Monitoring Data

Pollutant	State Standard	Monitoring Data by Year 2004	2005	2006	2007	2008
Ozone – Folsom Natoma Street						
Highest 1-hour average (ppm)	0.09	0.111	0.120	0.133	0.129	0.166
Number of standard excesses [a]		14	23	31	13	38
Highest 8-hour average (ppm)	0.070	0.094	0.109	0.110	0.123	0.123
Number of standard excesses		41	41	62	34	65
Ozone – T Street						
Highest 1-hour average (ppm)	0.09	0.105	0.108	0.106	0.109	0.107
Number of standard excesses [a]		1	4	6	2	7
Highest 8-hour average (ppm)	0.070	0.076	0.087	0.090	0.090	0.092
Number of standard excesses		3	5	14	7	18
Particulate Matter (PM_{10}) – Branch Center #2						
Highest 24-hour average ($\mu g/m^3$)	50	*	*	82.0	60.0	89.0
Number of standard excesses		*	*	*	30.2	68.7
Particulate Matter (PM_{10}) – Branch Center						
Highest 24-hour average ($\mu g/m^3$)	50	45	64	40	*	*
Number of standard excesses		0	23.6	*	*	*
Particulate Matter (PM_10) – T Street						
Highest 24-hour average ($\mu g/m^3$)	50	58.0	55.0	111.0	57.4	70.9
Number of standard excesses		*	24.4	*	30.2	17.8

Notes:
ppm = parts per million
$\mu g/m^3$ = micrograms per cubic meter
[a] = For ozone, this refers to the number of days of a given year during which excesses of the 1-hour standard were recorded.
* = insufficient or no data available
Source: CARB, 2010

TOXIC AIR CONTAMINANTS

Toxic Air Contaminants (TACs) are not monitored near the project sites. The single industrial facility near the project sites that emits TACs is Aerojet General Corporation (Aerojet). Aerojet emits TACs during controlled burns of spent rocket fuel. The controlled burns last from 3 to 5 minutes and are timed to protect air quality. The concentrations of contaminants in the emissions from the burns are not known.

ODORS

Odor is measured through subjective reaction, and is not quantitatively measureable. Odors are difficult to report because their effect relates to a subjective human response to various intensities. Near the project sites, odors as a nuisance issue are generally attributed to the Sacramento Rendering Company, located over two miles from the project site, near the intersection of Kiefer and Sunrise Boulevards.

Odor complaints have been filed against the Sacramento Rendering Company by residents at Mather Air Force Base housing; over 50 complaints were filed from 1992 to 1997. Odors from the Sacramento Rendering Company are often detectable along Sunrise Boulevard during certain atmospheric conditions.

The plant has incorporated a number of odor controls, including enclosing portions of the plant processes, installing a venturi scrubber, and utilizing a packed tower chlorine-based scrubber. The Sacramento Rendering Company is subject to SMAQMD Rule 410, "Reduction of Animal Matters," and Rule 402, Nuisance (County of Sacramento, 2001; SMAQMD, 2010b).

3.4.3 REGULATORY FRAMEWORK

Various local, regional, state and Federal agencies share the responsibility for air quality management in Sacramento County. SMAQMD operates at the local level with primary responsibility for attaining and maintaining the Federal and state ambient air quality standards in the County which includes the City of Rancho Cordova. SMAQMD works jointly with the USEPA, CARB, the Sacramento Area Council of Governments (SACOG), other air districts in the Sacramento region, county and city transportation and planning departments, and various non-governmental organizations to improve air quality through a variety of programs. These programs include the adoption of regulations, policies and guidance, extensive education and public outreach programs, as well as emission-reducing incentive programs.

3.4.3.1 FEDERAL PLANS, POLICIES, REGULATIONS, AND LAWS

The Federal Clean Air Act (CAA), passed in 1970, and last amended in 1990, forms the basis for the national air pollution control effort. Basic elements of the act include national ambient air quality standards for major air pollutants, hazardous air pollutants standards, state attainment plans, motor vehicle emissions standards, stationary source emissions standards and permits, acid rain control measures, stratospheric ozone protection, and enforcement provisions (see Table 3.4-3).

Table 3.4-3
State and Federal Ambient Air Quality Standards

Ambient Air Quality Standards						
Pollutant	Average Time	California Standards[1]		Federal Standards[2]		
		Concentration[3]	Method[4]	Primary[3,5]	Secondary[3,6]	Method[7]
Ozone (O_3)	1 Hour	0.09ppm (180 µg/m^3)	Ultraviolet Photometry	--	Same as Primary Standard	Ultraviolet Photometry
	8 Hour	0.070 ppm (137 µg/m^3)		0.075 ppm (147 µg/m^3)		
Respirable Particulate Matter (PM_{10})	24 Hour	50 µg/m^3	Gravimetric or Beta Attenuation	150 µg/m^3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 µg/m^3		--		
Fine Particulate Matter ($PM_{2.5}$)	24 Hour	No Separate State Standard		35 µg/m^3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	12 µg/m^3	Gravimetric or Beta Attenuation	15.0 µg/m^3		
Carbon Monoxide (CO)	8 Hour	9.0 ppm (10 mg/m^3)	Non-Dispersive Infrared Photometry (NDIR)	9 ppm (10 mg/m^3)	None	Non-Dispersive Infrared Photometry (NDIR)
	1 Hour	20 ppm (23 mg/m^3)		35 ppm (40 mg/m^3)		
	8 Hour (L. Tahoe)	6 ppm (7 mg/m^3)		--	--	--

Table 3.4-3
State and Federal Ambient Air Quality Standards (continued)

Ambient Air Quality Standards						
Pollutant	**Average Time**	**California Standards[1]**		**Federal Standards[2]**		
		Concentration[3]	**Method[4]**	**Primary[3.5]**	**Secondary[3.6]**	**Method[7]**
Nitrogen Dioxide (NO_2) Lead[9]	Annual Arithmetic Mean	0.030 ppm (57 µg/m^3)	Gas Phase Chemiluminescence	0.053 ppm (80 µg/m^3)	Same as Primary Standard	Gas Phase Chemilumi-nescence
	1 Hour	0.18 ppm (339 µg/m^3)		0.100 ppm[8]	None	
	Annual Arithmetic Mean	--	Ultraviolet Fluorescence	0.030 ppm (80 µg/m^3)	--	Spectrophoto-metry (Pararsaniline Method)
	24 Hour	0.04 ppm (105 µg/m^3)		0.14 ppm (365 µg/m^3)	--	
	3 Hour	--		--	0.5 ppm (1300 µg/m^3)	
	1 Hour	0.25 ppm (655 µg/m^3)		--		
	30 Day Average	1.5 µg/m3	Atomic Absorption	--	--	--
	Calendar Quarter	--		1.5 µg/m^3	Same as Primary Standard	High Volume Sampler and Atomic Absorption
	Rolling 3-Month Average[10]	--		0.15 µg/m^3		
Visibility Reducing Particles	8 Hour	Extinction coefficient of 0.23 per kilometer – visibility of ten miles or more (0.07 0 30 miles or more for Lake Tahoe) due to particles when relative humidity is less than 70%. Method: Beta Attenuation and Transmittance through Filter Tape.		NO FEDERAL STANDARDS		
Sulfates	24 Hour	25 µg/m^3	Ion Chromatography			
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m^3)	Ultraviolet Fluorescence			
Vinyl Chloride[9]	24 Hour	0.01 ppm (26 µg/m^3)	Gas Chromatography			

1. California standards for ozone, carbon monoxide (except Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, suspended particulate matter—PM_{10}, $PM_{2.5}$, and visibility reducing particles, are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.
2. National standards (other than ozone, particulate matter, and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest eight hour concentration in a year, averaged over three years, is equal to or less than the standard. For PM_{10}, the 24 hour standard is attained when the expected
number of days per calendar year with a 24-hour average concentration above 150 µg/m3 is equal to or less than one. For $PM_{2.5}$, the 24 hour standard is attained when 98% of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact U.S. EPA for further clarification and current federal policies.
3. Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of
pollutant per mole of gas.
4. Any equivalent procedure which can be shown to the satisfaction of the ARB to give equivalent results at or near the level of the air quality standard may be used.
5. National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.
6. National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.
7. Reference method as described by the EPA. An "equivalent method" of measurement may be used but must have a "consistent relationship to the reference method" and must be approved by the EPA.
8. To attain this standard, the 3-year average of the 98th percentile of the daily maximum 1-hour average at each monitor within an area must not exceed 0.100 ppm (effective January 22, 2010).
9. The ARB has identified lead and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.
10. National lead standard, rolling 3-month average: final rule signed October 15, 2008.
Source: CARB, 2010

CONFORMITY

In the 1990 CAA Amendments, Congress added specific provisions to the conformity requirements for transportation actions. "Conformity" requires that Federal agencies demonstrate their action's consistency with State Implementation Plans (SIPs).

The purpose of the general conformity program is to ensure that actions taken by the Federal government do not undermine state or local efforts to achieve and maintain national AAQS. Before a Federal action is taken, it must be evaluated for conformity with the SIP. All reasonably foreseeable emissions, both direct and indirect, predicted to result from the action are taken into consideration and must be identified as to location and quantity. If it is found that the action would create emissions above de minimis threshold levels specified in USEPA regulations, the action cannot proceed unless mitigation measures are specified that would bring the project into conformance with USEPA regulations and the applicable SIP.

For actions that exceed the Federal conformity thresholds, the USACE must make its own conformity determination consistent with the requirements of CAA. In making its conformity determination, the USACE must consider comments from any interested parties (40 CFR §93.153 et seq.). General conformity with respect to the project would be determined before the Record of Decision is signed.

Sacramento County is part of the larger Sacramento Federal Ozone Nonattainment Area and has been designated a "severe" nonattainment area for the Federal 1- and 8-hour ozone standards, and is designated a "serious" nonattainment area for the state 1- and 8-hour ozone standard. The District also remains a nonattainment for PM_{10} and nonattainment for the 2006 $PM_{2.5}$ NAAQS. As outlined in 40 CFR §93.153, the applicability thresholds for a conformity determination are as follows:

Pollutant	Conformity Applicability Threshold
Ozone (VOC's or NO_x)	25 tons/year (severe)
PM_{10}	100 tons/year (moderate)
$PM_{2.5}$	100 tons/year (moderate)

In order to determine if the Proposed Project Alternative would exceed these thresholds, the unmitigated annual emissions for ozone (VOC and NO_x) and PM were determined (shown in Section 3.4.4.3: Impact Analysis). These annual emissions were based on the URBEMIS modeling conducted in the Sunrise-Douglas Community Plan/Sunridge Specific Plan EIR. The unmitigated operational emissions for ozone (VOC and NO_x) exceeded the conformity applicability thresholds above. However, as outlined in Section 3.4.4.3, Impact Analysis:

1. It is anticipated that the implementation of numerous mitigation measures will result in significant decreases in ozone operational emissions associated with the Proposed Project Alternative.

2. The Proposed Project Alternative conforms with the California SIP, specifically, the Sacramento Regional 8 Hour Ozone Attainment and Reasonable Further Progress Plan.

3.4.3.2 STATE PLANS, POLICIES, REGULATIONS, AND LAWS

States translate the national AAQS into source-specific emission limitations in State Implementation Plans (SIPs). Each state has the primary responsibility for assuring that standards are attained and maintained. States adopt and submit to USEPA for approval a SIP for the implementation, maintenance,

and enforcement of the national standards. The USEPA approves a SIP or portion thereof when it meets the requirements of the CAA. In addition to the national AAQS, states may adopt more stringent standards.

The California Clean Air Act (CCAA) establishes an air quality management process that generally parallels the federal process. The CCAA focuses on attainment of the state ambient air quality standards that are more stringent than the federal standards for certain pollutants and measurement periods.

The CCAA requires that air districts prepare an air quality attainment plan if the district violates state air quality standards for CO, sulfur dioxide (SO2), NO_x, and ozone, but does not require an attainment plan for exceedances in PM_{10} or smaller standards. The CCAA requires that the state air quality standards be met as expeditiously as practicable, but it does not set precise attainment deadlines.

The air quality attainment plan requirements established by the CCAA are based on the severity of air pollution problems caused by locally generated emissions. Upwind air pollution control districts are required to establish and implement emission control programs commensurate with the extent of pollutant transport to downwind districts.

The USEPA and the CARB established ambient air quality standards for common pollutants (Table 3.4-3). These standards represent the safe levels of contaminants that avoid the specific adverse health effects associated with each pollutant. The most common air pollutants with known harmful effects are listed below (SMAQMD, 2009).

Ozone – Ozone is commonly referred to as smog and is a respiratory irritant that increases susceptibility to respiratory infections and diseases and harms lung tissue at high concentrations. The state standard for ozone has been set for a 1- and 8-hour averaging time while a federal 8-hour standard is established. The state 1-hour standard is 0.09 parts per million (ppm). The Federal 8-hour standard is 0.08 ppm, not to be exceeded on a 3-year average. Ozone is measured in terms of ozone precursors which include ROG and NO_x.

The principal sources of ROG and NO_x are the combustion of fuels and the evaporation of solvents, paints, and fuels. As a cumulative result of development patterns in the Sacramento Valley and surrounding areas, motor vehicles emit over 75% of the ozone precursors in the Sacramento Federal Ozone Nonattainment Area.

Particulate Matter – There are many sources of PM emissions, including combustion, industrial and agricultural processes, grading and construction, and motor vehicle use. The PM emissions associated with motor vehicle use include tail pipe and tire wear emissions, as well as re-entrained road dust. PM emissions also result from wood burning in fireplaces and stoves, and agricultural burning. Fine particulate matter affects health because it can bypass the body's natural filtration system more easily than larger particles, lodging deep in the lungs.

The following discussion provides information on the other criteria pollutants for which the USEPA and CARB have set ambient air quality standards, but Sacramento County currently attains. Most of these pollutants are generated by motor vehicles, although industry and other stationary sources also emit varying levels of the pollutants.

Carbon Monoxide – State and Federal CO standards have been set for 1-hour and 8-hour averaging times. The state and the Federal standards for a 1-hour averaging period are 20 ppm and 35 ppm, respectively. The state and Federal standard for an 8-hour averaging period is 9 ppm. Carbon monoxide is produced

mainly by motor vehicle emissions and at low concentrations reduces the amount of oxygen in the bloodstream and may aggravate cardiovascular disease.

Nitrogen Dioxide – Nitrogen dioxide (NO_2) is a reddish brown gas that is a by-product of fuel combustion, mostly from motor vehicle and industrial sources. Nitrogen dioxide contributes to ozone formation.

Lead – As a result of regulatory efforts to reduce the content of lead (Pb) in gasoline, the contribution of lead from the transportation sector has been substantially reduced. Industrial activities are the major source of lead emissions to the atmosphere.

Sulfur Dioxide – Sulfur dioxide (SO_2) is produced by the combustion of sulfur-containing fuels, such as oil, coal and diesel.

Toxic Air Contaminants – Toxic air contaminants are airborne pollutants that may be expected to result in an increase in mortality or serious illness or which may pose a present or potential hazard to human health. TACs are generally associated with mobile sources. The primary TACs generated by mobile sources include benzene, 1,3-butadiene, diesel particulates, and formaldehyde. Toxic air contaminants may be released as emissions from normal operations, or during accidental releases of hazardous materials. Adverse health effects of TACs include cancer, birth defects, neurological damage, and death.

AIR TOXIC "HOT SPOTS" INFORMATION AND ASSESSMENT ACT

California requires the submission of air emission inventory plans for toxic air contaminants. Facilities that release any hazardous substance listed in the regulations and release 10 tons or more of total organic gases, particulate matter, nitrogen oxides, or sulfur oxides are required to submit the plans to the local air pollution control district or air quality management district. The plan represents a comprehensive and detailed description of the methods the facility proposes to use to quantify air releases from all point sources. After review of the inventory plans, the local agency determines if a risk assessment would be required to be submitted by the facility.

3.4.3.3 REGIONAL AND LOCAL PLANS, POLICIES, REGULATIONS, AND ORDINANCES

The CARB and the local air pollution control districts have shared the responsibility of meeting the CAA requirements. The CARB is responsible for regulating mobile source emission while stationary source emission controls are delegated to the local air pollution control districts or air quality management districts e.g., SMAQMD.

An area may be designated non-attainment for any of the national AAQS. Nonattainment area permits are issued under State or local jurisdiction. Sources emitting a non-attainment pollutant must meet the lowest achievable emission rate. In addition, the SIP must contain a growth allowance or the source must provide an emissions offset (i.e., offset the quantity of the source's emissions by reducing emissions of the non-attainment pollutant emanating from one of its own operations or from an unrelated source). A given area can be designated an attainment area for one of the criteria pollutants and a non-attainment area for different criteria pollutants.

SACRAMENTO METROPOLITAN AIR QUALITY MANAGEMENT DISTRICT RULES AND REGULATIONS

The SMAQMD regulates air quality conditions in Sacramento County through a comprehensive strategic program of planning, regulation, enforcement, technical innovation, and promotion of the understanding of air quality issues. The SMAQMD also inspects stationary sources of air pollution and responds to citizen complaints, monitors ambient air quality and meteorological conditions, and implements programs and regulations required by the CCAA.

The rules are comprised of ten regulations including: General Rules, Permits, Fees, Prohibitory Rules, Agricultural Burning, Hearing Board, Emergency Episode Plan, New Source Performance Standards, National Emission Standards for Hazardous Air Pollutants (NESHAPs), and Mobile Sources (SMAQMD, 2010a).

As mentioned above, SMAQMD adopts rules and regulations. All projects are subject to SMAQMD rules and regulations in effect at the time of construction. Specific rules applicable to the construction of the project may include, but are not limited to, the following:

Rule 201: General Permit Requirements. Any project that includes the use of equipment capable of releasing emissions to the atmosphere may require permit(s) from SMAQMD before equipment operation. The applicant, developer, or operator of a project that includes an emergency generator, boiler, or heater should contact SMAQMD early to determine whether a permit is required, and to begin the permit application process. Portable construction equipment (e.g., generators, compressors, pile drivers, lighting equipment) with an internal combustion engine over 50 horsepower (hp) are required to have a SMAQMD permit or CARB portable equipment registration.

Rule 402: Nuisance. This is a general prohibition that is meant to protect the general public from air contaminants or other materials that will cause injury, detriment, nuisance or annoyance to any considerable number of persons or the public.

Rule 403: Fugitive Dust. The developer or contractor is required to control dust emissions from earthmoving activities or any other construction activity to prevent airborne dust from leaving the project sites.

Rule 442: Architectural Coatings. The developer or contractor is required to use coatings that comply with the volatile organic compound (VOC) content limits specified in the rule.

The SMAQMD provides guidance to local land use agencies in implementing an indirect source review program. Because the SMAQMD does not possess land use regulatory powers, administration of an indirect source review program is dependent upon land use agencies. The County of Sacramento has not yet adopted specific procedures for the implementation of an indirect source review program, which would identify various emission reduction measures and quantify their effectiveness in terms of meeting the 15% reduction targeted by Air Quality Policy AQ-15 in the City of Rancho Cordova General Plan (City of Rancho Cordova, 2006).

SACRAMENTO METROPOLITAN AIR QUALITY MANAGEMENT DISTRICT AIR QUALITY ATTAINMENT PLAN

The SMAQMD has an Air Quality Attainment Plan, which describes the local measures to be implemented to achieve the federal and state air quality standards. The Sunridge Specific Plan was developed in collaboration with the SMAQMD's Air Quality Attainment Plan (USACE, 2006).

SACRAMENTO METROPOLITAN AIR QUALITY MANAGEMENT DISTRICT GUIDE TO AIR QUALITY ASSESSMENT

The SMAQMD has an advisory document that provides lead agencies, consultants, and project applicant(s) with uniform procedures for addressing air quality in environmental documents (SMAQMD, 2009). The handbook contains the following applicable components:

- Criteria and thresholds for determining whether a project may have a significant adverse air quality impact;
- Specific procedures and modeling protocols for quantifying and analyzing air quality impacts;
- Methods available to mitigate air quality impacts; and,
- Information for use in air quality assessments and environmental documents.

The SMAQMD recommends that this handbook be used by lead agencies at local, state, and Federal levels for projects that are likely to result in emission impacts in Sacramento County.

In addition, effective October 10, 2005, if modeled construction-generated emissions for a project are not reduced to SMAQMD's threshold of significance (85 pounds per day [lb/day]) by the application of the standard construction mitigation, then an off-site construction mitigation fee is recommended. The fee must be paid before a grading permit can be issued. This fee is used by SMAQMD to purchase off-site emissions reductions. Such purchases are made through SMAQMD's Heavy Duty Incentive Program, through which select owners of heavy-duty equipment in Sacramento County can repower or retrofit their old engines with cleaner engines or technologies.

CITY OF RANCHO CORDOVA GENERAL PLAN

The air quality policies and actions in the City of Rancho Cordova General Plan were found to be applicable to the Sunridge Properties Project (City of Rancho Cordova, 2001). The Air Quality Element contains policies related to coordinating with SMAQMD on environmental documents and maximizing air quality benefits through the use of landscaping and trees, which are directly related to policies in the Natural Resources Element. The policies and actions of the Air Quality Element related to this project are provided below:

Policy AQ.1.2 – Evaluate projects for compliance with state and Federal ambient air quality standards and the SMAQMD thresholds of significance.

Action AQ.1.2.1 - Coordinate with SMAQMD through the environmental review process to ensure that proposed projects would not significantly affect the region's ability to meet state and Federal air quality standards.

Action AQ.1.2.2 – Require project proponents to coordinate with SMAQMD on appropriate methodologies for evaluating project emissions and air quality impacts (e.g., emissions modeling software, SMAQMD's thresholds of significance, etc.).

Action AQ.1.2.3 – Require all new development projects that exceed SMAQMD's thresholds of significance to incorporate design, construction material, and/or other operational features that will result in a 15% reduction in emissions when compared to an "unmitigated baseline" project.

Policy AQ.1.3 - Prohibit wood-burning open masonry fireplaces in all new development. Fireplaces with USEPA-approved inserts, USEPA-approved stoves, and fireplaces burning natural gas will be allowed.

Policy AQ.1.5 - Require odor impact analyses be conducted for evaluating new development requests that either could generate objectionable odors that may violate SMAQMD Rule 402 or any subsequent rules and regulations regarding objectionable odors near sensitive receptors or locate new sensitive receptors near existing sources of objectionable odors. Should objectionable odor impacts be identified, odor mitigation shall be required in the form of setbacks, facility improvements or other appropriate measures.

Policy AQ.2.2 - Encourage mixed-use developments that put residences in close proximity to services, employment, transit, schools, and civic facilities/services.

Action AQ.2.2.1 – Promote compact development within one-quarter to one-half mile of rail transit stations and transit stations along enhanced transit corridors.

Action AQ.2.2.2 – Require greenfield areas of the City to be developed in keeping with the City's Building Block Concept of livable, walkable neighborhoods with services and employment opportunities integrated within every Village of the community.

Policy AQ.2.4 - Maximize air quality benefits through selective use of landscaping vegetation that is low in emission of volatile organic compounds, and through re-vegetation of appropriate areas.

Action AQ.2.4.1 - Provide buffers and setbacks between sensitive land uses and sources of air pollution.

Policy AQ.3.1 - Promote walking and bicycling as viable forms of transportation to services, shopping, and employment.

Action AQ.3.1.1 - Facilitate street design that encourages biking and walking in both new and established areas.

Action AQ.3.1.2 - Require all new development to be designed to enable easy pedestrian and bicycle access and circulation.

Action AQ.3.2.4 - Require that new development pay its fair share of the cost of transit facilities and the operations and maintenance of transit services.

Action AQ.3.3.1 - Encourage commercial, retail, and residential developments to participate in or create Transportation Management Associations.

Policy AQ.3.4 - Emphasize "demand management" strategies that seek to reduce single occupant vehicle use in order to achieve state and federal air quality plan objectives.

Policy AQ.4.1 - Promote improved air quality benefits through energy conservation measures for new and existing development.

Action AQ.4.1.1 - Require energy-conserving features in the design and construction of new development. Many options exist for reducing pollution from energy producing systems, including the following:

- Requiring the use of the best available technologies to reduce air pollution standards.

- Using building materials and methods that reduce emissions and improve indoor air quality (e.g., Leadership in Energy and Environmental DesignLEED certification, LEED Green Buildings, USEPA Green Building).

- Requiring that development projects be located and designed in a way that minimizes direct and indirect emission of air contaminants.

- Installing efficient heating equipment and other appliances, such as water heaters, swimming pool heaters, cooking equipment, refrigerators, furnaces, and boiler units.

- Utilizing automated time clocks or occupant sensors to control heating systems.

Action AQ.4.1.2 - Encourage the use of cost-effective and innovative emission reduction technologies in building components and design.

Action AQ.4.1.3 - Support the use of building materials and methods that increase efficiency beyond State Title 24 standards.

Action AQ.4.1.4 - Encourage the use of "USEPA Energy Star"-certified appliances.

Action AQ.4.1.5 - Promote the implementation of sustainable design strategies for "cool communities," such as installing reflective roofing or light-colored pavement and planting urban shade trees.

Policy AQ.4.2 - Support vehicle improvements and the use of clean vehicles that reduce emissions and improve air quality.

Action AQ.4.2.4 - Promote developments and street systems that support the use of neighborhood electric vehicles.

Policy AQ.4.3 - Support SMAQMD's program of retrofitting construction equipment to reduce air pollution.

Action AQ.4.3.1 - Enforce construction-related air quality mitigation measures adopted through the CEQA process.

Policy AQ.5.2 - Support programs that encourage children to safely walk or bike to school.

3.4.4 ENVIRONMENTAL CONSEQUENCES AND MITIGATION MEASURES

This section describes the potential project related air quality impacts. The primary issues and concerns regarding air quality-related impacts for this project include: 1) Exceedance of regulatory air quality threshold levels due to construction-related emissions, 2) Exceedance of air quality threshold levels due to increased vehicle traffic- and operation-related emissions, 3) Exposure of future residents to odors from surrounding existing industries that could lead to exposures and public complaints, and 4) Non-conformance with air quality policies found in the City of Rancho Cordova General Plan (City of Rancho Cordova, 2006).

3.4.4.1 THRESHOLDS OF SIGNIFICANCE

The thresholds for determining the significance of impacts for this analysis are based on the SMAQMD guidelines. These thresholds also encompass the factors taken into account under NEPA to determine the

significance of an action in terms of its context and the intensity of its impacts. The Proposed Project and alternatives under consideration were determined to result in a significant impact related to air quality if they would:

- Increase short term construction-related emissions of ROG, NO_x and particulate matter equal to or less than PM_{10} that would exceed the SMAQMD threshold levels (see Table 3.4-4).
- Expose future residents to odors from the Sacramento Rendering Company that lead to public complaints, causing the Sacramento Rendering Company to be declared a public nuisance (SMAQMD Rule 402).
- Create long-term increase in ROG, NO_x and PM_{10} emissions from residents moving into the project site that leads to ROG, NO_x and PM_{10} emissions that exceed SMAQMD threshold levels.
- Create conformance issues with the City of Rancho Cordova General Plan Policy AQ.1.2.3 requirement to achieve a minimum 15% reduction in emissions.
- Create conformance issues based on the de minimis threshold levels specified in USEPA regulations (40 CFR §93.153 et seq.).

Table 3.4-4
SMAQMD Thresholds of Significance

Mass Emission Thresholds (dealing with Ozone precursors)		
NO_x	85 pounds/day	65 pounds/day
ROG	NONE	65 pounds/day
Concentration Thresholds (based on the California Ambient Air Quality Standard, identical for both phases of development)		
PM_{10}	50 µg/m^3 24-hour standard; 20 µg/m^3 Annual Arithmetic Mean	
$PM_{2.5}$	12 µg/m^3 Annual Arithmetic Mean	
CO	20 ppm 1-hour standard, 9 ppm 8-hour standard	
NO_2	0.18 ppm 1-hour standard; 0.03 ppm Annual Arithmetic Mean	
SO_2	0.25 ppm 1-hour standard; 0.04 ppm 24-hour standard	
Lead	1.5 µg/m^3 30-day average	
Visibility Reducing Particles	Extinction coefficient of 0.23 per kilometer – visibility of 10 miles due to particles when relative humidity is less than 70%	
Sulfates	25 µg/m^3 24-hour standard	
H_2S	42 µg/m^3 or 0.03 ppm 1-hour standard	
Vinyl Chloride	26 µg/m^3 or 0.01 ppm 24-hour standard	

Notes:
The SMAQMD Board of Directors adopted the air quality thresholds of significance on March 28, 2002, via resolution AQMD2002018.
A project is considered significant if emissions exceed a CAAQS or contribute substantially to an existing or projected violation of a CAAQS.
A substantial contribution is considered an emission that is equal to or greater than 5% of a CAAQS.
Revisions to the CAAQS are automatically adopted as revisions to these thresholds.
Official citation for the CAAQS: California Code of Regulations, Title 17, §70200, Table of Standards.

3.4.4.2 ANALYSIS METHODOLOGY

Air quality data used to establish the environmental conditions in the study area were modeled and compiled in the *Sunrise-Douglas Community Plan/Sunridge Specific Plan Final Environmental Impact Report* (County of Sacramento, 2001). The URBEMIS model used to estimate the emissions of ozone precursors and particulate matter continues to be relevant and appropriate for this assessment. Other than identifying attainment of carbon monoxide in the air basin, no other changes in air quality in the project

area were identified to have occurred since this earlier study. The 2001 air quality assessment is incorporated by reference and a brief summary is provided below.

3.4.4.3 IMPACT ANALYSIS

This section describes air quality impact potential effects in the analysis area.

IMPACT3.4-1 – Short-term increase in construction-related emissions. *Activities associated with the Phase I (grading and earthmoving) and Phase II (structural construction) construction of single family homes and associated infrastructure would result in the temporary generation of emissions of ROG, NO_x, and PM_{10}.*

Proposed Project Alternative – Activities associated with the Proposed Project Alternative Phase I (grading and earthmoving) and Phase II (structural construction) construction of 3,258 single family homes and associated infrastructure would result in the temporary generation of emissions of ROG, NO_x and PM_{10}. These emissions would result from construction activities including ground disturbance, construction worker commute trips, asphalt paving, mobile and stationary construction equipment exhaust, soil erosion, and architectural coatings.

The Sunrise-Douglas Community Plan/Sunridge Specific Plan EIR estimated emissions for an area that included the Sunridge Specific Plan Area based on a methodology from the SMAQMD's guidance and on the urban emissions (URBEMIS) model (SMAQMD, 2009). Based on this modeling effort, it was estimated that construction emissions would equal 276 pounds per day (ppd) of PM_{10} during Phase I, and 385 ppd of ROG and 501 ppd of NO_x during Phase II. This impact was considered significant in the Sunridge Specific Plan EIR because the estimated emissions of PM_{10} and NO_x would exceed the SMAQMD threshold levels. The following impact analysis of air quality impacts covers the entire Specific Plan area, whereas the six projects for the Proposed Project Alternative represent only 14% of the Specific Plan dwelling units. Therefore, the impacts are proportionately less for the Proposed Project Alternative. The short-term increase in construction-related emissions for the Proposed Project Alternative would be **less than significant with mitigation.**

Reduced Footprint Alternative – Activities associated with the Reduced Footprint Alternative emissions would result from construction activities including construction worker commute trips, asphalt paving, mobile and stationary construction equipment exhaust, soil erosion, and architectural coatings. The air quality impacts from the construction of the 2,511 homes would be of the same nature and considered **less than significant with mitigation.** This is because the six projects under the Reduced Footprint Alternative represent only 11% of the Specific Plan dwelling units.

No Action Alternative – Activities associated with the Phase I (grading and earthmoving) and Phase II (structural construction) construction of 2,060 single family homes and associated infrastructure would result in the temporary generation of emissions of ROG, NO_x, and PM_{10}. These emissions would result from construction activities including ground disturbance, construction worker commute trips, asphalt paving, mobile and stationary construction equipment exhaust, soil erosion, and architectural coatings. The air quality impacts from the construction of the 2,060 homes would be of the same nature but **less than significant with mitigation**. This is because the six projects under the No Action Alternative represent about 10% of the Specific Plan dwelling units.

Mitigation Measure 3.4-1: Emissions Reduction.

Proposed Project Alternative and Reduced Footprint Alternative – In accordance with SMAQMD and EPA guidance and to comply with City requirements, the following measures would be implemented under these two alternatives to reduce emissions of fugitive dust and NO_x to a less than significant level:

Fugitive Dust Source Controls:

- Stabilize open storage piles and disturbed areas by covering and/or applying water or chemical/organic dust palliative where appropriate. This applies to both inactive and active sites, during workdays, weekends, holidays, and windy conditions.
- Install wind fencing, and phase grading operations, where appropriate, and operate water trucks for stabilization of surfaces under windy conditions.
- When hauling material and operating non-earthmoving equipment, prevent spillage, and limit speeds to 15 miles per hour (mph). Limit speed of earthmoving equipment to 10 mph.

Mobile and Stationary Source Controls:

- Reduce use, trips, and unnecessary idling of heavy equipment.
- Maintain and tune engines per manufacturer's specifications to perform at California Air Resources Board (CARB) and/or EPA certification levels, where applicable, and to perform at verified standards applicable to retrofit technologies. Employ periodic, unscheduled inspections to limit unnecessary idling and to ensure that construction equipment is properly maintained, tuned, and modified consistent with established specifications. CARB has a number of mobile source anti-idling requirements. See their website at: http://www.arb.ca.gov/msprog/truck-idling/truck-idling.htm
- Prohibit any tampering with engines and require continuing adherence to manufacturer's recommendations
- If practicable, lease new, clean equipment meeting the most stringent of applicable Federal or State Standards.
- Utilize EPA-registered particulate traps and other appropriate controls where suitable, to reduce emissions of diesel particulate matter and other pollutants at the construction site.

Administrative controls:

- Identify all commitments to reduce construction emissions and incorporate these reductions into the air quality analysis to reflect additional air quality improvements that would result from adopting specific air quality measures. Identify where mitigation measures are deemed to be not implementable due to economic infeasibility, and provide comparable determinations for similar projects as justification for this decision.
- Prepare an inventory of all equipment prior to construction, and identify the suitability of add-on emission controls for each piece of equipment before groundbreaking. (Suitability of control devices is based on: whether there is reduced normal availability of the construction equipment due to increased downtime and/or power output, whether there may be significant damage caused to the construction equipment engine, or whether there may be a significant risk to nearby workers or the public.) Meet CARB diesel fuel requirement for off-road and on-highway (i.e., 15 ppm), and, where appropriate, use alternative fuels such as natural gas and electric.
- Develop a construction traffic and parking management plan that minimizes traffic interference and maintains traffic flow. Identify sensitive receptors in the project area, such as children, elderly, and

infirm, and specify the means by which you will minimize impacts to these populations. For example, locate construction equipment and staging zones away from sensitive receptors and fresh air intakes to buildings and air conditioners.

Prior to approval of the project, provide a Construction-Related Emissions Reduction Air Quality Plan which demonstrates to the satisfaction of the SMAQMD how development within the planning area will achieve minimum reductions of 20% in NO_x and 30% in PM_{10} construction-related equipment emissions. The Construction-Related Emissions Reduction Air Quality Plan shall describe the implementation method(s) to be used (i.e., incorporating plan provisions into the Specific Plan, and/or incorporating Plan provisions as conditions of project approval, and/or through some other methods(s) to ensure that future development within the planning area will implement the emission reduction measures set forth in the Construction-Related Emissions Reduction Air Quality Plan).

Based on the URBEMIS modeling performed for the Sunrise-Douglas Community Plan/Sunridge Specific Plan EIR, achieving the minimum reductions of construction emissions (20% in NO_x and 30% in PM_{10}) would result in the maximum emissions of 401 ppd in No_x and 193 ppd of PM_{10}. However, the Proposed Project Alternative, Reduced Footprint Alternative, and No Project Alternative represent only 14, 11 and 10 percent of the Sunridge Specific Plan dwelling units, therefore, the total emissions for each alternative will be significantly less.

No Action Alternative – The mitigation measure for the No Action Alternative would be similar to the action alternatives.

IMPACT3.4-2 – Exposure of future residents to odors from the Sacramento Rendering Company (SRC).
Malodorous plant odors may migrate and have a negative impact on nearby air quality.

Proposed Project Alternative and Reduced Footprint Alternative – Several factors are used to determine the significance of odor impacts, including the distance from the odor source to sensitive receptors, the predominant wind direction in relation to the odor source and sensitive receptors, the type of odor source, and the number of complaints received regarding the odor source. As discussed in Section 3.4, odors are currently a byproduct of Sacramento Rendering Company operation. The Sacramento Rendering Company plant is approximately 0.25 miles from the project site. Odor complaints from this facility have occurred in the past, although few residences are located nearby. The predominant wind direction in the area is from the south to southwest direction and the project site is directly downwind of Sacramento Rendering Company a minimum of 30% of the time.

This would be considered a **significant and unavoidable impact**. If public complaints from individuals residing in the future single family homes in the project site are sufficient to cause the Sacramento Rendering Company to be declared a public nuisance per SMAQMD Rule 402, than the SMAQMD can require Sacramento Rendering Company to identify and incorporate mitigating measures to correct the nuisance condition. These measures could include enclosing additional operations at the plant, installing additional odor control devices, or a combination of these and other control measures deemed necessary by the SMAQMD.

No Action Alternative – Over 2,000 single family residences are created as described in the No Action Alternative. The odor impact would still have a **significant and unavoidable impact** although much fewer residences would be affected.

Mitigation Measure 3.4-2: Odor Easement/Notifications.

Proposed Project Alternative and Reduced Footprint Alternative – In accordance with SMAQMD guidance, the applicant will grant an odor easement over all residential properties, in favor of the Sacramento Rendering Company which will serve to notify residential property owners of the potential for odor impacts, and will restrict to the extent allowed by law the liability/exposure of the Sacramento Rendering Company, and the City of Rancho Cordova, for nuisance or other resulting effect.

No Action Alternative – The mitigation measure for the No Action Alternative would be similar to the action alternatives.

IMPACT3.4-3 – Long-term increase in ROG, No_x, and PM_{10} emissions. *Activities associated with project build-out in the project site would result in increased air emissions of ROG, No_x, and PM_{10}.*

Proposed Project Alternative – Activities associated with new residents moving into the Proposed Project Alternative's 3,258 single family homes would result in increased air emissions of ROG, NO_x, and PM_{10}. These activities would include use of natural gas, landscaping, and architectural coatings, as well as vehicle trips.

The Sunrise-Douglas Community Plan/Sunridge Specific Plan estimated vehicle and operational related emissions for the entire Sunridge Specific Plan Area based on emission factors developed by the USEPA and the URBEMIS model. The URBEMIS model calculates emissions of ozone precursor and PM_{10} emissions associated with vehicle trips and residential area sources. Based on this modeling effort, it was estimated that emission of ROG, NO_x, and PM_{10} would be substantially above the significance thresholds for these pollutants.

The impact analysis of air quality impacts covered the entire Specific Plan area, whereas the six projects represent only 14% of the Sunrise-Douglas Community Plan/Sunridge Specific Plan dwelling units. The traffic assessment indicated that 29,241 new daily trips, or 27% of the entire Sunrise-Douglas Community Plan/Sunridge Specific Plan Area, would result from the Sunridge Specific Plan Area (see Section 3.7). Peak morning and evening hour traffic trips would generate 2,339 and 2,849, respectively. These peak trips represent as much as a 32% increase in new traffic generation. The impacts would be **significant and unavoidable**.

Reduced Footprint Alternative – The air quality impacts from emissions due the 2,511 homes would be of the same nature and **significant**, although slightly less than those described under the Proposed Project Alternative because the six projects under the Reduced Footprint Alternative represent only 11% of the Specific Plan dwelling units. However, the impact would be **significant and unavoidable**.

No Action Alternative – Activities associated with new residents moving into the No Action Alternative area's 2,060 single family homes would result in increased air emissions of ROG, NO_x and PM_{10}. These activities would include use of wood burning devices (SMAQMD Rule 417), space and water heating, landscaping, and consumer products, as well as vehicle trips. The six projects under the No Action Alternative represent about 10% of the Sunrise-Douglas Community Plan/Sunridge Specific Plan dwelling units. The new daily traffic volume increases would be similar to those projected under the Proposed Project Alternative. The air quality impacts from emissions would be of the same nature and the impact would be **significant and unavoidable**.

Mitigation Measure 3.4-3: Air Quality Plan Submittal.

Proposed Project Alternative and Reduced Footprint Alternative – Prior to approval of the project, the City of Rancho Cordova requirement AQ.1.2.3 Air Quality Plan will be submitted to demonstrate how development within the planning area will achieve a minimum 15% reduction in operational related (long-term) emissions, consistent with General Plan. The Air Quality Plan will describe the implementation methods to be used to ensure that future developments within the planning area will implement the emission reduction measures.

No Action Alternative – The mitigation measure for the No Action Alternative would be similar to the action alternatives.

IMPACT3.4-4 – Non-conformance with the City of Rancho Cordova General Plan Policy AQ.1.2.3. *Pursuant to City of Rancho Cordova General Plan Policy, all new major indirect sources of emissions must be reviewed and modified or conditioned to achieve a minimum 15% reduction in emissions.*

Proposed Project Alternative and Reduced Footprint Alternative – The City of Rancho Cordova General Plan Policy AQ.1.2.3 requires that all new major indirect sources of emissions be reviewed and modified or conditioned to achieve a minimum 15% reduction in emissions. The developers for homes under the Proposed Project Alternative and the Reduced Footprint Alternative would be in violation of this policy, unless adequate emission reduction measures are implemented. These measures could include a provision for mixed uses, transit accessibility, bicycle and pedestrian improvement and participation in a Transportation Management Association. These mitigation measures would reduce the impact for the two alternatives to **less than significant.**

No Action Alternative – The No Action Alternative would be similar to the action alternatives and is considered **less than significant.**

Mitigation Measure 3.4-4: Air Quality Plan Submittal.

Proposed Project Alternative and Reduced Footprint Alternative – Prior to approval of the project by the City of Rancho Cordova, an AQ.1.2.3 Air Quality Plan would be prepared that demonstrates to the satisfaction of the SMAQMD how development within the planning area would achieve a minimum 15% reduction in operation-related emissions, consistent with General Plan Policy AQ.1.2.3.

No Action Alternative – The mitigation measure for the No Action Alternative would be similar to the action alternatives.

IMPACT3.4-5 – Non-conformance with the de minimis threshold levels specified in USEPA regulations (40 CFR §93.153). *Pursuant to 40 CFR §93.153, the federal action should not create emissions above de minimis threshold levels specified in USEPA regulations unless mitigation measures are specified that would bring the project into conformance.*

Proposed Project Alternative – As discussed above, the Proposed Project Alternative would have approximately 14% of the dwelling units that were estimated in the Sunrise-Douglas Community Plan/Sunridge Specific Plan EIR. Moreover, it is anticipated that the Proposed Project Alternative would result in approximately 27% of the traffic trips estimated in the Sunrise-Douglas Community Plan/Sunridge Specific Plan EIR (see Section 3.7). Based on these percentages, the unmitigated annual emissions for ozone (VOCs and NO_x) and PM_{10} were estimated (Table 3.4-5). As shown in Table 3.4-5, it

is estimated that the annual unmitigated operational emissions for VOCs and NO_x would exceed the 25 tons per year conformity applicability threshold.

However, it is anticipated that with the implementation of Mitigation Measure 3.4-1, Mitigation Measure 3.4-3, Mitigation Measure 3.4-4, Mitigation Measure 3.4-5, and Mitigation Measure 3.16-1 outlined in Section 3.16 (Climate Change), VOC and NO_x emissions associated with the proposed project alternative would be below the conformity applicability thresholds, resulting in an impact that is **less than significant with mitigation.**

Reduced Footprint Alternative The reduced footprint alternative would have approximately 11% of the dwelling units that were estimated in the Sunrise-Douglas Community Plan/Sunridge Specific Plan EIR. Moreover, assuming that dwelling units are proportional to traffic trips, it is anticipated that the reduced footprint alternative would result in approximately 24% of the traffic trips estimated in the Sunrise-Douglas Community Plan/Sunridge Specific Plan EIR. Based on these percentages, the unmitigated annual emissions for ozone (VOCs and NO_x) and PM_{10} were estimated (see Table 3.4-5). As shown in Table 3.4-5, it is estimated that the annual unmitigated operational emissions for VOCs and NO_x would exceed the 25 tons per year conformity applicability threshold.

However, it is anticipated that with the implementation of Mitigation Measure 3.4-1, Mitigation Measure 3.4-3, Mitigation Measure 3.4-4, Mitigation Measure 3.4-5, and Mitigation Measure 3.16-1 outlined in Section 3.16 (Climate Change), VOC and NO_x emissions associated with the Reduced Footprint Alternative would be below the conformity applicability thresholds, resulting in an impact that is **less than significant with mitigation.**

No Action Alternative – The No Action Alternative would have approximately 10% of the dwelling units that were estimated in the Sunrise-Douglas Community Plan/Sunridge Specific Plan EIR. Moreover, assuming that dwelling units are proportional to traffic trips, it is anticipated that the Reduced Footprint Alternative would result in approximately 23% of the traffic trips estimated in the Sunrise-Douglas Community Plan/Sunridge Specific Plan EIR. Similar to the proposed project alternative and the Reduced Footprint Alternative, the No Action Alternative would result in unmitigated operational annual emissions for ozone (VOCs and NO_x) that exceed the conformity applicability thresholds (Table 3.4-5).

However, it is anticipated that with the implementation of Mitigation Measure 3.4-1, Mitigation Measure 3.4-3, Mitigation Measure 3.4-4, Mitigation Measure 3.4-5, and Mitigation Measure 3.16-1 outlined in Section 3.16 (Climate Change), VOC and NO_x emissions associated with the No Action Alternative would be below the conformity applicability thresholds, resulting in an impact that is **less than significant with mitigation.**

Table 3.4-5
Estimated (Unmitigated) Annual Pollutant Emissions for the Sunridge Properties Project
(Tons per year)

Emissions Source	VOCs	NO_x	PM_{10}
Construction			
Entire Specific Plan Area (SPA)[1]	51.75	92.30	101.50
Proposed Project Alternative (14% of SPA Dwelling Units)	7.25	12.92	14.21
Reduced Footprint Alternative (11% of SPA Dwelling Units)	5.70	10.15	11.17
No Action Alternative (10% of SPA Dwelling Units)	5.18	9.23	10.15

Table 3.4-5 Estimated (Unmitigated) Annual Pollutant Emissions for the Sunridge Properties Project (Tons per year) (continued)			
Emissions Source	**VOCs**	**NO_x**	**PM_{10}**
Operations (Area Sources)			
Entire Specific Plan Area (SPA)	91.88	31.94	0.06
Proposed Project Alternative (14% of SPA Dwelling Units)	12.86	4.47	0.01
Reduced Footprint Alternative (11% of SPA Dwelling Units)	10.11	3.51	0.01
No Action Alternative (10% of SPA Dwelling Units)	9.19	3.19	0.00
Operations (Vehicles)			
Entire Specific Plan Area	150.00	378.00	196.20
Proposed Project Alternative[2]	40.5	102.10	53.00
Reduced Footprint Alternative[3]	36.00	90.72	47.10
No Action Alternative[4]	34.5	87.00	45.13

Sources and Assumptions:

[1] Assume construction takes place five days a week, 52 weeks per year (total of 260 days per year)

[2] Section 3.7 states that the Proposed Project Alternative makes up 27% of the entire Sunrise-Douglas Community Plan/Sunridge Specific Plan Area estimated traffic increase

[3] Assume a 3% reduction compared to the Proposed Project Alternative based on dwelling units

[4] Assume a 4% reduction compared to the Proposed Project Alternative based on dwelling units

Mitigation Measure 3.4-5: Conformity with the California SIP.

Proposed Project Alternative, Reduced Footprint Alternative, and No Action Alternative – In addition to Mitigation Measure 3.4-1, Mitigation Measure 3.4-3, Mitigation Measure 3.4-4, and Mitigation Measure 3.16-1, outlined in Section 3.16 (Climate Change), each of the project scenarios will conform with the California SIP, as highlighted in 40 CFR §93.153. The most applicable SIP to the Sunridge Properties project is the ARB-approved 2009 Sacramento Regional 8 Hour Ozone Attainment and Reasonable Further Progress Plan (the Sacramento SIP). The Sacramento SIP sets out a strategy for attaining the 1997 Federal 8-hour ozone standard (VOCs and NO_x) in the Sacramento Nonattainment Area by 2018.

As stated in the Sacramento SIP, "Areas should consider all reasonably available measures for implementation in light of local circumstances. However, areas need only adopt measures if they are both economically and technologically feasible and cumulatively will either advance the attainment date by one year or more or are necessary for reasonable further progress. This Plan contains required reasonably available control measures [RACM]."

The RACM contained in the Sacramento SIP were selected in such a way that the Sacramento region should reach their ozone nonattainment goal by 2018 despite an increase in population and vehicle activity. In other words, the VOC and NO_x emission forecasts extended out to 2018 show significant declines in mobile source emissions, despite increasing population, vehicle activity, and economic development in the Sacramento region. The Sacramento SIP control strategy relies on the following components:

1. Reductions from existing control measures and adopted rules,
2. Reductions from new state and Federal regulations, and

3. Reductions from defined new SIP local and regional measures.

While many of these mitigations will be required on a Federal, state, and regional level (and will therefore happen automatically), it is necessary for the Sunridge Properties project to align with the RACM and guidance presented in the Sacramento SIP in order to contribute to the reduction of ozone emissions in the Sacramento region. On a project-level, the Sacramento region has embarked on a visionary process of defining and implementing a new, higher density, land use pattern which reduces congestion, encroachment on open space, average vehicle miles traveled per household and air pollutants (Program Blueprint).

Blueprint smart growth principles and a 2050 growth scenario were approved in the Sacramento SIP to achieve the following objectives:

1. Provide a variety of transportation choices
2. Offer housing choices
3. Take advantage of compact development
4. Use existing assets
5. Increase mixed land use
6. Encourage natural resource conservation
7. Ensure distinctive, attractive communities with quality design

Based on these qualifications, the Sunridge Properties project would conform with the Sacramento SIP because it would: be a mixed land use; result in distinctive, attractive communities with quality design; offer housing choices; provide a variety of transportation choices (as outlined in Mitigation Measure 3.16-1); take advantage of compact development; and encourage natural resource conservation through the use of on-site and off-site vernal pool mitigation banks.

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3.5 LAND USE

This section describes existing land uses within the analysis area, applicable policies and regulations for the City of Rancho Cordova and regional agencies, and the environmental consequences and mitigation related to land use.

3.5.1 AREA OF ANALYSIS

The area of analysis for land use is the project site and surrounding area within the City of Rancho Cordova or Sacramento County.

3.5.2 AFFECTED ENVIRONMENT

The City of Rancho Cordova is located in eastern Sacramento County, and covers approximately 33.6 square miles. Within Rancho Cordova are a wide range of land uses, including approximately 2,600 acres of residential development, 454 acres of commercial/retail uses, 972 acres of office uses, and 835 acres of industrial uses. In addition, there are an estimated 12,888 acres of agricultural land (fallow) and more than 296 acres of public/private recreation and natural-preserve uses. Institutional uses such as schools, churches, and other public entities also serve as major land uses.

Growth in the area began during the Gold Rush and expanded with the development of Mather Air Force Base and Aerojet (City of Rancho Cordova, 2006). With the closure of Mather Air Force Base, Mather Airport is now operating as a civilian air field and business park. Surrounding land use includes Aerojet property north of Douglas Boulevard that is planned for urban development (as Rio del Oro), Security Park located immediately north of Douglas Boulevard, Mather Airport and industrial properties approximately 1.5 miles west of Sunrise Boulevard, and agricultural lands to the south and east (also under consideration for urban development). Kiefer Landfill is located approximately two miles to the south.

Historically, land use in the area, including the six parcels proposed for development consisted of grazing land with stock ponds. Scattered farmsteads, buildings, and other agricultural infrastructure also typified lands within the area (USACE, 2005a). In recent decades, some business and industrial complexes and residential developments have been constructed in the area east of Sunrise Boulevard. The land use change from agricultural (grazing) was documented in the Land Use Element of the Amended County of Sacramento General Plan (December 15, 1993). Much of the remaining area is grazing land, but is planned for conversion to residential developments. The land use designations specified in the Sunridge Specific Plan are primarily residential and open space, with a small amount of commercial uses in Douglas Road 103 and Arista del Sol.

Within the Sunridge Specific Plan, the Anatolia I, II, and III, and Sunridge Park developments are complete or under construction. Housing types within these developments consist primarily of single-family residential units, but also include multi-family garden apartments, townhouses, and condominiums. Four elementary schools, a middle school, and a high school are estimated as being needed within the Elk Grove Unified School District in the Sunridge Specific Plan Area at full development (Table 5-1, Sunridge Specific Plan area, 2001). Almost 100 acres of parkland are also included in the Sunridge Specific Plan (Table 5-4, Sunridge Specific Plan area, 2001).

Lands surrounding the analysis area parcels are part of the City's future planning efforts, and include the Rio del Oro and Grantline West Planning areas to the north, the Suncreek Preserve Planning area to the

south, the Mather Planning area to the west, and the East Planning area to the east. The Rancho Cordova General Plan describes land uses, environmental conditions, and target residential and employment populations for each planning area. Prior to development, each planning area requires master planning documents. With exception of the Mather Planning area, the planning areas surrounding the six parcels are primarily grazing lands and open space.

3.5.3 REGULATORY FRAMEWORK

3.5.3.1 FEDERAL PLANS, POLICIES, REGULATIONS, AND LAWS

The Farmland Protection Policy Act (FPPA) (Public Law 97-98) was passed in 1981 to minimize the conversion of farmland to non-agricultural uses under Federal projects and programs. The U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) oversees the FPPA and maintains an inventory of prime farmland, unique farmland, and farmland of statewide or local importance within the United States, its territories, and trust areas. The inventory is implemented in cooperation with other interested agencies at the national, state and local levels of government.

3.5.3.2 STATE LAWS, POLICIES, REGULATIONS, AND LAWS

STATE PLANNING AND ZONING LAWS

Government Code §65300 et seq. establishes the obligation of cities and counties to adopt and implement general plans. The general plan is a comprehensive, long-term, and general document that describes plans for the physical development of a city or county and of any land outside its boundaries that, in the city's or county's judgment, bears relation to its planning. The general plan addresses a broad range of topics, including, at a minimum, land use, circulation, housing, conservation, open space, noise, and safety. In addressing these topics, the general plan identifies the goals, objectives, policies, principles, standards, and plan proposals that support the city's or county's vision for the area. The general plan is a long-range document that typically addresses the physical character of an area over a 20-year period. Finally, although the general plan serves as a blueprint for future development and identifies the overall vision for the planning area, it remains general enough to allow for flexibility in the approach taken to achieve the plan's goals.

The State Zoning Law (Government Code §65800 et seq.) establishes that zoning ordinances, which are laws that define allowable land uses within a specific district, are required to be consistent with the general plan and any applicable specific plans. When amendments to the general plan are made, corresponding changes in the zoning ordinance may be required within a reasonable time to ensure that the land uses designated in the general plan would also be allowable by the zoning ordinance (Government Code §65860[c]).

LOCAL AGENCY FORMATION COMMISSIONS

The Cortese-Knox-Hertzberg Act of 2000 (Government Code §56000 et seq.) establishes the process through which a local agency boundary change is made and associated planning authority is transferred from one local agency to another. The local agency formation commission (LAFCo) of each county oversees and approves such boundary changes. To encourage orderly growth, LAFCos establish a sphere of influence for each city and other local agencies. The sphere of influence is a county area that is subject to the planning influence of a city or another local agency because that agency has identified an intention to annex the area into its physical boundary and service area. The Sacramento Local Agency Formation Commission Policies, Standards, and Procedures for LAFCos, adopted September 5, 1990, amended May 5, 1993, include policies that:

- Encourage orderly development,
- Encourage the logical formation and determination of boundaries,
- Ensure that affected populations receive efficient governmental services, and
- Guide development away from open space and prime agricultural land uses unless such actions would not promote planned orderly and efficient development.

The Sacramento County LAFCo oversees the establishment or revision of boundaries for local municipalities and independent special districts.

WILLIAMSON ACT

The California Land Conservation Act of 1965, also known as the Williamson Act, is designed to preserve agriculture and open-space lands by discouraging their premature and unnecessary conversion to urban uses. The act enables local governments to enter into contracts with private landowners for the purpose of restricting specific parcels of land to agricultural or related open-space use. In return, landowners receive property tax assessments that are much lower than normal because they are based on farming and open-space uses as opposed to full market value. None of the land at the project site is held under Williamson Act contracts.

CALIFORNIA IMPORTANT FARMLAND INVENTORY SYSTEM AND FARMLAND MAPPING AND MONITORING PROGRAM

The Farmland Mapping and Monitoring Program (FMMP) was established by the State of California in 1982 to continue the Important Farmland mapping efforts begun in 1975 by the U.S. Soil Conservation Service (SCS) (now called the NRCS). The intent of the SCS was to produce agricultural-resource maps based on soil quality and land use across the nation. The California Department of Conservation (CDC) sponsors the FMMP and is also responsible for establishing agricultural easements in accordance with Public Resources Code §10250-10255.

As part of the nationwide agricultural-land-use mapping effort, the NRCS developed a series of definitions known as Land Inventory and Monitoring (LIM) criteria. The LIM criteria classify the land's suitability for agricultural production. Suitability includes both the physical and chemical characteristics of soils as well as the actual land use. Important Farmland maps are derived from the NRCS soil survey maps using the LIM criteria and are available by county. Farmland classification is based on soil quality, irrigation status, and land use. Important Farmland maps classify land into one of the following eight categories: Prime Farmland, Farmland of Statewide Importance, Unique Farmland, Farmland of Local Importance, Grazing Land, Urban and Built-Up Land, Other Land, and Water. The CDC classifications in the Important Farmland Inventory System are as follows:

- Prime Farmland-Land that has the best combination of features to sustain long-term agricultural production.
- Farmland of Statewide Importance-Land other than Prime Farmland that has a good combination of physical and chemical features for the production of agricultural crops.
- Unique Farmland-Land of lesser quality soils used for the production of the state's leading agricultural cash crops.

- Farmland of Local Importance-Land that is of importance to the local agricultural economy.
- Grazing Land-Land with existing vegetation that is suitable for grazing.
- Urban and Built-up Lands-Land occupied by structures with a density of at least one dwelling unit per 1.5 acres.
- Land Committed to Nonagricultural Use-Vacant areas; existing lands that have a permanent commitment to development but have an existing land use of agricultural or grazing lands.
- Other Lands-Land that does not meet the criteria of the remaining categories (CDC, 2004).

3.5.3.3 REGIONAL AND LOCAL PLANS, POLICIES, REGULATIONS, AND LAWS

SACRAMENTO AREA COUNCIL OF GOVERNMENTS' SACRAMENTO REGION BLUEPRINT

The Sacramento Area Council of Governments (SACOG) is a regional organization that provides a variety of planning functions over its six-county region, which includes Sacramento, Yolo, Placer, Sutter, Yuba, and El Dorado Counties. SACOG's primary functions are to provide transportation planning and funding for the region and to study and support resolutions of regional issues. In 2002, SACOG initiated what is now known as the Sacramento Region Blueprint process. Computer modeling of the region showed that current growth patterns and transportation investment priorities would result in significant increases in congestion over the next 50 years, as well as significant consumption of privately held natural and agricultural land. The goal of the process was to determine whether alternatives to current and planned transportation and land use patterns could be established to improve the region's long-term travel patterns and air quality, as well as retain substantially more open space. The Blueprint is the product of a 3-year public-involvement effort and is intended to guide land use and transportation choices over the next 50 years. During this 50-year period the region's population is projected to grow from 2 million to more than 3.8 million, jobs are projected to increase from 921,000 to 1.9 million, and housing units are projected to increase from 713,000 to 1.5 million.

The starting point for the Blueprint process was the "Base Case Scenario," which shows how the region would develop through the year 2050 if growth patterns of the recent past continue. Under the Base Case Scenario, growth would continue outward into largely rural areas and on the fringes of current development. The model predicted that the average resident living in a version of a future typical of the Base Case Scenario in 2050 would probably live in a single-family house on a fairly large lot in a subdivision with similar houses. This resident would commute a longer distance to work than is typical today; trips to work and commercial areas would be lengthy and slow because of significant increases in congestion.

In December 2004 the SACOG Board of Directors adopted the Preferred Blueprint Scenario, a vision for growth that promotes compact, mixed-use development and more transit choices as an alternative to low-density development. It includes a greater range of housing products, reinvestment in already developed areas, protection of natural-resource areas from urbanization, and more transportation choices. Residents living in a future developed area consistent with the Preferred Blueprint Scenario in 2050 would probably live in a home on a smaller lot, in a neighborhood with some larger houses and some attached row houses, apartments, and condominiums. Residents would drive to work, but the trip would be shorter than presently, and the time needed to get there would be about the same as it is now. It is anticipated that residents may sometimes use public transportation (e.g., train or bus). Most of their shopping and entertainment trips would still be via automobile, but distances would be shorter. Some of these shopping

trips might be via walking or biking down the block a short distance to a village or town center that contains neighborhood stores with housing units built on top of them, and a small park or plaza.

The Sacramento Region Blueprint depicts a way for the region to grow through the year 2050, generally consistent with seven principles of "Smart Growth." These principles are summarized below and include a comparison of development projected under the Base Case Scenario to development projected under the Preferred Blueprint Scenario (SACOG and Valley Vision, 2004).

- **Transportation Choices**: Developments should be designed to encourage people to sometimes walk, ride bicycles, ride the bus or light rail, take the train, or carpool. Use of Blueprint growth concepts for land use and right-of-way design would encourage use of these modes of travel and the remaining auto trips would be, on average, shorter. In the Base Case, 2% of new housing and 5% of new jobs would be located within walking distance of 15-minute bus or train service, the number of vehicle miles traveled per day per household would be 34.9 miles, and the total time devoted to travel per household per day would be 81 minutes. The Blueprint Scenario reduces the number of trips taken by car by about 10%. These trips are shifted to transit, walking, or biking. In the Blueprint Scenario, 38% of new homes and 41% of new jobs would be located within walking distance of 15-minute bus or train service, the number of vehicle miles traveled per day per household would be 47.2 miles, and the total time devoted to travel per household per day would be 67 minutes. With the Blueprint Scenario, per capita, there would be 14% less carbon dioxide and particulates produced by car exhaust compared to the Base Case.

- **Mixed-Use Developments**: Building homes and shops, entertainment, office, and light industrial uses near each other can encourage active, vital neighborhoods. This mixture of uses can be either in a vertical arrangement (mixed in one building) or horizontal (with a combination of uses in close proximity). These types of projects function as local activity centers where people would tend to walk or bike to destinations. Separated land uses, on the other hand, lead to the need to travel more by auto because of the distance between uses. Under the Base Case scenario, 26% of people would live in communities with a good, or balanced, mix of land uses by 2050. In the Blueprint Scenario, 53% of people would live in balanced communities.

- **Compact Development**: Creating environments that are more compactly built and use space in an efficient but aesthetic manner can encourage more walking, biking, and public-transit use, and shorten auto trips. Under the Base Case, by 2050, new development would require the consumption of an additional 661 square miles of land. Under the Blueprint Scenario, 304 square miles of new land would be required for new development.

- **Housing Choice and Diversity**: Providing a variety of places where people can live—apartments, condominiums, townhouses, and single-family detached homes on varying lot sizes—creates opportunities for the variety of people who need them: families, singles, seniors, and people with special needs. This issue is of special concern for people with very low, low, and moderate incomes. By providing a diversity of housing options, more people would have a choice.

- **Use of Existing Assets**: In urbanized areas, development on infill or vacant lands, intensification of the use of underutilized parcels, or redevelopment can make better use of existing public infrastructure. This can also include rehabilitation and reuse of historic buildings, denser clustering of buildings in suburban office parks, and joint use of existing public facilities such as schools and parking garages. Under the Base Case Scenario, all new

development would be on vacant land. Under the Blueprint Scenario, it is suggested that 13% of all new housing and 10% of all new jobs would occur through reinvestment.

- **Quality Design**: The design details of any land use development—such as the relationship to the street, setbacks, placement of garages, sidewalks, landscaping, the aesthetics of building design, and the design of the public rights-of-way-are factors that can influence the attractiveness of living in a compact development and facilitate the ease of walking and biking to work or neighborhood services. Good site and architectural design is an important factor in creating a sense of community and a sense of place. Under the Base Case, 34% of people would live in pedestrian-friendly neighborhoods. Under the Blueprint Scenario, in 2050, pedestrian-friendly neighborhoods would rise to 69%.

- **Natural Resources Conservation**: This principle encourages the incorporation of public-use open space (such as parks, town squares, trails, and greenbelts) within development projects, above state requirements; it also encourages wildlife and plant habitat preservation, agricultural preservation, and promotion of environmentally friendly practices such as energy efficient design, water conservation and stormwater management, and planting of shade trees. Under the Base Case Scenario, 166 square miles of agricultural land would be converted into urban uses. Under the Blueprint Scenario, 102 square miles of agricultural land would be converted to urban uses. When the Preferred Blueprint Scenario was developed, the authors included a calculated, predetermined "preservation factor" that was intended to account for a certain amount of land that could be set aside in the future to preserve natural resources. However, the Preferred Blueprint Scenario did not attempt to map specific areas that could potentially be set aside as preserves. The only "preserve" areas that were mapped were those already designated as such that were in existence at the time the Preferred Blueprint Scenario was created.

The Preferred Blueprint Scenario predicts long-term environmental benefits from undertaking a realistic long-term planning process; these benefits are intended to minimize the extent of the inevitable physical expansion of the overall regional urban areas. In summary, if the Preferred Blueprint Scenario were followed, it would result in more mixed-use communities; provide a greater number of small-lot, single-family detached homes; develop a greater number of attached homes; reinvest in existing business and residential areas; and create more pedestrian-friendly neighborhoods. The results of implementing these principles would be the protection of natural resources (because less land would be required for urban uses) and less agricultural land conversion. In addition, the Preferred Blueprint Scenario predicts less time devoted to travel, fewer car trips, and fewer miles traveled to work and local businesses compared with development under the Base Case. The reduction in traffic would improve air quality in the region by reducing carbon monoxide and particulate matter produced by car exhaust.

The Blueprint process received broad support from most of its member agencies. The Blueprint is advisory and therefore does not establish land use restrictions for Rancho Cordova. The SACOG has no land use authority. Although it is only advisory, the Blueprint is the most authoritative policy guidance in the Sacramento region for long-term regional land use and transportation planning. A number of jurisdictions either are adopting the Blueprint concepts or are considering and encouraging projects consistent with the Blueprint. Further, the land uses in the Rancho Cordova General Plan generally reflect the types and intensity of land uses shown in the Preferred Blueprint Scenario, which envisions relatively higher overall residential densities than currently in place. While not establishing "buildout targets," this land use scenario anticipates the addition of approximately 54,000-60,000 new households and 48,000 new jobs within the current Rancho Cordova city limits (based on assumptions used in the Blueprint process), with possible additional growth in the City's Planning areas.

SACRAMENTO COUNTY LOCAL AGENCY FORMATION COMMISSION

The project would require approval of annexation by the Sacramento County LAFCo to the service area of the Sacramento Regional County Sanitation District (SRCSD) and the Sacramento Area Sewer District (SASD) prior to service. The broad goals of the LAFCo include ensuring the orderly formation of local governmental agencies, preserving agricultural and open-space lands, and discouraging urban sprawl. Commissions must, by law, create municipal-service reviews and update spheres of influence for each independent local governmental jurisdiction within their countywide jurisdiction. The Sacramento County LAFCo has adopted the following policies and guidelines for approval of annexation:

- Consider favorably proposals that result in the provision of urban services in densely developed and populated areas.
- Consider favorably proposals that will provide urban services in areas with high growth potential rather than in areas with limited potential for future growth.
- Community needs are met most efficiently and effectively by governmental agencies which:
    - Are already in existence,
    - Are capable of coordinating service delivery over a relatively large area, and
    - Provide more than one type of service to the territory that they serve.

SOUTH SACRAMENTO HABITAT CONSERVATION PLAN

The purpose of the South Sacramento Habitat Conservation Plan (SSHCP), which, as of September 2010, has not yet been adopted, is to conserve open space, nature preserves and wildlife. It is designed to guide land use and development for the protection and conservation of species, habitat, and ecosystems, including wetlands and vernal pools, in south Sacramento County. The area of analysis is in the Urban Development Area Conservation Zone 1 of the SSHCP. Wetland covers in the analysis area generally include seasonal wetlands, swale, and some seasonal impoundment. Within an Urban Development Area, the majority of take is covered under the plan, though it does not preclude species recovery, and there is a streamlined permitting process. More information on the SSHCP and its relation to this study is provided in Section 3.2 Biological Resources.

RANCHO CORDOVA GENERAL PLAN

The Land Use Element of the City of Rancho Cordova's General Plan describes existing and future land use within the incorporated area and the larger General Plan area, the majority of which is undeveloped vacant land with some agricultural use (City of Rancho Cordova, 2006). The incorporated City of Rancho Cordova is approximately 33.6 square miles and 20,071 acres, while unincorporated areas comprise nearly 62,000 acres.

SUNRIDGE SPECIFIC PLAN

Land uses within the area of analysis are defined by the Sunridge Specific Plan, which was approved by the County of Sacramento in 2002, prior to the incorporation of the City of Rancho Cordova in 2003. The Sunridge Specific Plan designated land use as primarily residential with some interspersed open space, school, park, and commercial uses, a total of 9,886 dwellings was proposed, ranging from single family

houses to apartment units. The Rancho Cordova General Plan incorporates the proposed land uses for the Sunridge Specific Plan Area into its Land Use Element.

3.5.4 ENVIRONMENTAL CONSEQUENCES AND MITIGATION MEASURES

This section describes the potential project-related land use impacts.

3.5.4.1 THRESHOLDS OF SIGNIFICANCE

The thresholds for determining the significance of impacts for this analysis encompass the factors taken into account under NEPA to determine the significance of an action in terms of its context and the intensity of its impacts. A land use and agricultural resources impact would be considered significant if the Proposed Project and alternatives under consideration would do any of the following:

- Conflict with applicable land use plans, policies, or regulations of an agency with jurisdiction over the project.
- Physically divide an established community.
- Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to nonagricultural use.

3.5.4.2 ANALYSIS METHODOLOGY

The analysis of consequences of the alternatives on land use was based on a qualitative assessment of existing conditions with project conditions using goals and objectives of laws, policies, regulations, and plans as the criteria for the assessment.

3.5.4.3 IMPACT ANALYSIS

IMPACT3.5-1 – Conflict with applicable land use laws policies, regulation, or plans of an agency with jurisdiction over the project. *Project implementation would conflict with applicable land use plans, policies, or regulations of an agency with jurisdiction over the project.*

Proposed Project Alternative, Reduced Footprint Alternative, and No Action Alternative -The three alternatives have been designed to incorporate elements of the laws, policies, regulations, and plans that would govern each development. There would be no conflict with the laws, policies, regulations, and plans and thus **direct and indirect** impacts are **less than significant**.

Mitigation Measure: No mitigation measures are required.

IMPACT3.5-2 – Physically divide an establish community. *Project implementation would create a division in an established community.*

Proposed Project Alternative, Reduced Footprint Alternative, and No Action Alternative - The three alternatives are part of a larger community development plan that would result in community integration, not separation. Therefore the three alternatives would not physically divide the community, and **direct and indirect** impacts are **less than significant.**

Mitigation Measure: No mitigation measures are required.

IMPACT3.5-3 – Convert prime farmland, unique farmland, or farmland of statewide importance to nonagricultural use. *Project implementation would convert prime farmland from agricultural use to urban uses.*

Proposed Project Alternative, Reduced Footprint Alternative, and No Action Alternative - None of the land at the project sites are held under Williamson Act contracts; therefore, none of the alternatives would conflict with existing Williamson Act contracts. There is also no prime, or unique, or farmland of statewide importance located at the six project sites. Therefore the three alternatives would not convert prime farmland, and **direct and indirect** impacts are **less than significant.**

Mitigation Measure: No mitigation measures are required.

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3.6 POPULATION, EMPLOYMENT, AND HOUSING

This section describes the affected environment for population, employment, and housing in the City of Rancho Cordova and Sacramento County, regulatory framework, and environmental consequences and mitigation measures.

3.6.1 AREA OF ANALYSIS

The evaluation of population, employment, and housing considers the City of Rancho Cordova and the County of Sacramento, where the Sunridge Properties are located (Figure 1-1).

3.6.2 AFFECTED ENVIRONMENT

This section describes population, employment, and housing within the City of Rancho Cordova and County of Sacramento.

3.6.2.1 POPULATION

SACRAMENTO COUNTY

From 2005-2007, Sacramento County had a total population of 1.4 million, 700,000 (51%) females and 674,000 (49%) males. The median age was 34.1 years. Twenty-six percent of the population was under 18 years and 11% was 65 years and older. The California Department of Finance (DOF) projects population in Sacramento County to increase to about 1.8 million in 2030 and 2.2 million in 2050 (DOF, 2009).

CITY OF RANCHO CORDOVA

Because the City of Rancho Cordova was not incorporated at the time of the 2000 U.S. Census, the U.S. Census Bureau determined the population of Rancho Cordova using census tracts. The data from the 2000 U.S. Census indicated that the population of Rancho Cordova was 48,731 in 1990 (U.S. Census Bureau, 2000). Rancho Cordova has since conducted an analysis to calibrate the available data to the city limits using the 2000 census block groups, blocks, and tracts in relation to the city-limit boundary. This analysis determined that the population in the city limits was 53,065 in 2000 (Jordan, pers. comm., 2004).

The population of Rancho Cordova was 57,799 from 2005-2007, with about 30,000 (51%) females and 28,000 (49%) males. The median age was 32.7 years. Twenty-five percent of the population was under 18 years and 10% was 65 years and older. The Sacramento Area Council of Governments (SACOG) estimates population of Rancho Cordova to increase to 202,500 by 2035 (SACOG, 2007).

The Rancho Cordova General Plan reflects an approach that combines specific land use designations in some areas of Rancho Cordova and more general descriptions of land uses in areas planned for future growth (Planning Areas). Projections included in the Rancho Cordova's Land Use Element are based on assumptions relating to existing, proposed, and approved project boundaries, including Rancho Cordova's Planning Areas; location; proposed and existing land uses; and geographic features. These projections are for full buildout of Rancho Cordova in 2030. The Rancho Cordova General Plan Planning Area consists of the current city limits and surrounding parts of unincorporated Sacramento County, and had a population of approximately 93,402 in 2000 (City of Rancho Cordova, 2006). Population growth within Rancho Cordova and its sphere of influence is projected to expand. Based on projections provided by

Rancho Cordova, the population within Rancho Cordova and its Planning Areas would be approximately 310,568 people by 2030. Actual projections may be higher or lower when more detailed project descriptions are developed for these Planning Areas.

3.6.2.2 EMPLOYMENT

SACRAMENTO COUNTY

Of the population 16 years and over in Sacramento County from 2005-2007, 64.6% were employed (U.S. Census Bureau, 2006a). Total personal income in Sacramento County was about $50.2 billion and mean per capita personal income was $36,340 (Bureau of Economic Analysis, 2009).

Table 3.6-1 shows 2007 industry earnings in Sacramento County. Top earning industries include government and government enterprises, professional and technical services, and health care and social assistance. Table 3.6-1 also shows industry employment and employee compensation in Sacramento County in 2007. In 2007, government and government enterprises employed the most people, followed by retail trade, health care and social assistance and professional and technical services. Average compensation per job in Sacramento County was $59,779 in 2007. In 2008, Sacramento County's unemployment rate was 7.2%.

Table 3.6-1
Industry and Industry Earnings, Sacramento County, 2007

Industry	Earnings (thousands $)	Employment (jobs)	Compensation (thousands $)
Forestry, fishing, related activities, and other	$39,708	1,578	$31,225
Mining	$62,653	685	$22,773
Utilities	$115,981	790	$113,939
Construction	$3,202,305	56,201	$2,615,981
Manufacturing	$1,894,868	25,688	$1,804,437
Wholesale trade	$1,335,522	21,626	$1,243,420
Retail trade	$2,659,713	82,854	$2,356,022
Transportation and warehousing	$794,910	17,263	$639,459
Information	$1,239,175	17,856	$1,183,302
Finance and insurance	$3,061,049	46,219	$2,839,224
Real estate and rental and leasing	$1,025,835	36,322	$543,987
Professional and technical services	$4,564,865	62,244	$3,736,916
Management of companies and enterprises	$508,057	6,621	$507,657
Administrative and waste services	$1,545,243	52,841	$1,363,352
Educational services	$392,103	15,429	$373,993
Health care and social assistance	$4,146,849	75,861	$3,805,164
Arts, entertainment, and recreation	$330,289	14,913	$268,081
Accommodation and food services	$977,198	50,804	$924,277
Other services, except public administration	$1,344,070	45,646	$1,149,547
Government and government enterprises	$14,463,562	190,763	$14,463,562

Source: Bureau of Economic Analysis 2009, Regional Economic Information System

Major employers in Sacramento County in 2009 include: Aerojet General Corporation, Ampac Fine Chemicals, California State University, Sacramento City College, Delta Dental, Kaiser Foundation Hospital, Mercy Hospitals, Mercy San Juan Medical Center, Sutter Memorial Hospital, UC Davis Medical Center, UC Davis Medical Group, UC Davis Health System, Sacramento Municipal Utility District, and the Sacramento Bee newspaper. Government departments with high employment include Sacramento County Water Resources, and the following state departments: Environmental Protection

Agency, Air Resources Board, Corrections, Health Services, Employment Development, Social Services, Water Resources, and Education (EDD, 2009).

CITY OF RANCHO CORDOVA

From 2005-2007 the City of Rancho Cordova population was 57,799 (three-year estimate). The percentage of the population 16 years and over that was employed was 66%. Table 3.6-2 shows industry employment in Rancho Cordova. The top three industries for employment were educational services, health care, and social assistance (17%), professional, scientific, and management, and administrative and waste management services (15%), and retail trade (12.5%). The unemployment rate was 9%. The median household income was $45,472 and per capita income was $22,707 (U.S. Census Bureau, 2006b).

Table 3.6-2
City of Rancho Cordova Employment by Industry, 2005-2007[1]

Industry	Number	Percent
Agriculture, forestry, fishing and hunting, and mining	125	0.5%
Construction	2,420	8.9%
Manufacturing	1,305	4.8%
Wholesale trade	735	2.7%
Retail trade	3,393	12.5%
Transportation and warehousing, and utilities	1,191	4.4%
Information	1,079	4.0%
Finance and insurance, and real estate and rental and leasing	2,467	9.1%
Professional, scientific, and management, and administrative and waste management services	4,141	15.3%
Educational services, and health care and social assistance	4,600	17.0%
Arts, entertainment, and recreation, and accommodation, and food services	2,040	7.5%
Other services, except public administration	994	3.7%
Public administration	2,567	9.5%
Total	27,057	100%

Source: U.S. Census Bureau 2009
[1] The 2005-2007 ACS three year estimates are based on data collected between January 2005 and December 2007

Rancho Cordova also provides many jobs for people that live in the greater Sacramento area. The City of Rancho Cordova has over 3,000 business establishments and provides employment for over 45,000 people. The Mather Commerce Center has over 2 million square feet of office space. Of the major employers in Sacramento County listed above, Aerojet General Corporation, Ampac Fine Chemicals, and Delta Dental are in Rancho Cordova.

The City of Rancho Cordova continues to invest in new developments. Since becoming incorporated in 2003, Rancho Cordova has had public and private investments of over $1.3 billion in commercial, residential, infrastructure, and schools and parks.

3.6.2.3 HOUSING

SACRAMENTO COUNTY

Within the County there were about 501,000 households with an average household size of 2.7 people. Among households, 306,000 (61%) were owner-occupied and 195,000 (39%) were occupied by renters. The median monthly housing costs for mortgaged owners was $1,916, while costs for non-mortgaged owners was $397, and renters $931. Forty-eight percent of owners with mortgages, 12% of owners without mortgages, and 53% of renters in Sacramento County spent 30% or more of their household income on housing (U.S. Census Bureau, 2006a).

In the 2008 RHNA, SACOG determined housing allocation for Sacramento County to be 59,093 new units to support population growth until 2013. Of the 59,093 units, 21.3% should be very low income, 16.2% should be low income, 19.1% should be moderate income, and 43.4% should be above moderate income (SACOG, 2008).

SACOG projects the total households in Sacramento County will be approximately 733,000 by 2035 with a land use mix of about 506,000 single-family households and 226,000 multi-family households (SACOG, 2007).

RANCHO CORDOVA

Within Rancho Cordova, there were approximately 22,000 households with an average household size of 2.6 people. Of these, 12,000 (53%) were owner-occupied and 10,000 (47%) were rentals. Of the total housing units, 58% were single-unit structures, 36% were multi-unit structures, and 6% were mobile homes. Approximately 6% of the total housing units were vacant (U.S. Census Bureau, 2006b). Approximately 40% of the Rancho Cordova housing stock is over 35 years old. Only 14% of Rancho Cordova houses were constructed after 1990. An assessment of blight within Rancho Cordova determined that approximately 42% of the 10,926 households surveyed had extensive deficiencies and 3% needed to be replaced (Rancho Cordova, 2008).

The median monthly housing costs for homeowners with a mortgage(s) was $1,681, while costs for non-mortgage homeowners was $338, and renters $894. Approximately 48% of homeowners with mortgages, 11% of homeowners without mortgages, and 55% of renters in Rancho Cordova spent 30% or more of their household income on housing (U.S. Census Bureau, 2006b).

SACOG projects total households in Rancho Cordova to be about 76,600 by 2035, including about 54,000 single-family households and 23,000 multi-family households (SACOG, 2007). Table 3.6-3 lists the number of houses proposed in existing plans for each development subject to this environmental impact statement (EIS). These would contribute to Rancho Cordova's regional housing supply.

Table 3.6-3
Proposed Number of New Houses

Development	Houses Proposed
Anatolia IV	134
Sunridge Village J	369
Grantline 208	855
Douglas Road 98	693
Douglas Road 103	301
Arista del Sol	906
Total	**3,258**

The 2000 U.S. Census depicts Rancho Cordova as a community with growing housing values, a low vacancy rate, and relatively small households. The U.S. Census Bureau reports that the number of housing units in Rancho Cordova increased from 35,990 in 1990 to 37,811 in 2000 (U.S. Census Bureau 2000). The housing growth rate in Rancho Cordova was approximately 4.8%, with the supply and composition of housing changing very little in this 10-year period. The number of housing units in Rancho Cordova is anticipated to increase with the approval of large-scale development plans and the construction of new and proposed residential projects. Median home prices within the city increased by 23.2% in a 1-year period (December 2003 to December 2004), from $233,088 to $303,500 (Sacramento Bee, 2005). Based on existing, planned, and approved projects, the number of housing units is estimated to increase to approximately 126,241 by 2030 at full buildout of Rancho Cordova (City of Rancho Cordova, 2006).

According to the California Department of Housing and Community Development (HCD) (2000), a housing vacancy rate of 5% is considered normal. Vacancy rates below 5% indicate a housing shortage in a community. The U.S. Census Bureau reports that Rancho Cordova had a vacancy rate of 2.2% for owner-occupied units and 3.8% for rental units in 2000. Similarly, Sacramento County had a vacancy rate of 1.4% for owner-occupied units and 4.8% for rental units in 2000. These vacancy rates indicate that both the city and county currently experience a tight housing market and a housing shortage.

REGIONAL HOUSING NEEDS ALLOCATION

A Regional Housing Needs Plan (RHNP) is mandated by the State of California for regions to address housing issues and needs based on future growth projections for the area (Government Code Section 65584). The RHNP is developed by SACOG and allocates to cities and counties their "fair share" of the region's projected housing needs based on household income groupings over the 5-year planning period for each specific jurisdiction's Housing Element. The RHNP also identified and quantified the existing housing needs for each jurisdiction.

The SACOG anticipates that a total of 23,353 housing units (including existing units) would be required for Rancho Cordova during the current planning period (2000-2007) to meet regional housing needs. In January 2000, SACOG's estimated number of existing housing units was 20,542, with an additional 2,811 new housing units required by 2007 (see Table 3.6-4).

Table 3.6-4
City of Rancho Cordova Regional Housing Needs Allocation for 2000-2007

Income Grouping	Existing Housing Units	Total Projected Housing Units Required	New Housing Units Required
Very low	5,366	5,925	559
Low	4,090	4,497	407
Moderate	4,349	4,855	506
Above moderate	6,737	8,076	1,339
Total	**20,542**	**23,353**	**2,811**

Source: SACOG 2001

In the 2008 RHNA, SACOG determined the regional housing allocation for Rancho Cordova to be 10,395 new units to support population growth until 2013. Of the 59,093 units, 20.3% should be very low income, 15.3% should be low income, 19.2% should be moderate income, and 45.2% should be above moderate income (SACOG, 2008).

3.6.3 REGULATORY FRAMEWORK

3.6.3.1 FEDERAL PLANS, POLICIES, REGULATIONS, AND LAWS

There are no federal plans, policies, regulations, or laws related to population, employment, and housing that are applicable to the proposed project or alternatives under consideration.

3.6.3.2 STATE PLANS, POLICIES, REGULATIONS, AND LAWS

There are no state plans, policies, regulations, or laws related to population, employment, and housing that are applicable to the proposed project or alternatives under consideration.

3.6.3.3 REGIONAL AND LOCAL PLANS, POLICIES, REGULATIONS, AND LAWS

RANCHO CORDOVA GENERAL PLAN ECONOMIC DEVELOPMENT ELEMENT

This Economic Development Element of the Rancho Cordova General Plan provides a guide for Rancho Cordova to provide a full range of employment, housing, retail/service, and entertainment options to residents. It establishes goals, policies, and actions to improve the city's prosperity, maintain regional competitiveness, ensure accessibility to assets, market the city, and set equitable rules for development.

REGIONAL HOUSING NEEDS PLAN

California's Housing Element Law mandates that councils of government develop an RHNP for their service area (Government Code §65584). SACOG is the lead agency in developing the RHNP for the 22 cities and 6 counties that it serves, including Sacramento County and Rancho Cordova.

Each city and county in the RHNP receives a Regional Housing Needs Allocation (RHNA) of the total number of housing units that it must plan for within a 7.5 year time period. Within the total number of units, allocations are also made for the number of units within four economic categories: very low, low, moderate, and above moderate incomes. The allocations are intended to be used by jurisdictions when updating their housing elements as the basis for assuring that adequate sites and zoning are available to accommodate at least the number of units allocated under the RHNP.

RANCHO CORDOVA GENERAL PLAN

The Housing Element of the Rancho Cordova General Plan identified housing solutions to solve regional housing needs problems and meet or exceed the regional housing needs allocation. The City of Rancho Cordova incorporated in 2003 as a jobs-rich community with homes and apartments that could not meet the housing demands of the workforce. In the Housing Element, the goals, policies, and actions are outlined to ensure a suitable mix of housing to match the community's needs.

3.6.4 ENVIRONMENTAL CONSEQUENCES AND MITIGATION MEASURES

This section describes the potential population, employment, and housing impacts resulting from the alternatives.

3.6.4.1 THRESHOLDS OF SIGNIFICANCE

The thresholds for determining the significance of impacts for this analysis encompass the factors taken into account under National Environmental Policy Act (NEPA) to determine the significance of an action in terms of its context and the intensity of its impacts. A population, employment, and housing impact is

considered significant if implementation of the proposed project or alternatives under consideration would do any of the following:

- Induce substantial unplanned population growth in an area, either directly (by proposed new homes and businesses) or indirectly (through the extension of roads or other infrastructure);
- Generate a substantial demand for new housing, the construction of which could cause significant environmental impacts; or
- Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere.

3.6.4.2 ANALYSIS METHODOLOGY

The examination of population, employment, and housing conditions in this section is based on information obtained from review of the plans for the proposed project and alternatives under consideration and review of available population, employment, and housing projections from the Rancho Cordova General Plan, SACOG, the U.S. Census, and other sources. Specific indirect impacts associated with increased population, housing, and employment, such as traffic congestion, air quality degradation, and noise generation, are addressed in each technical section of this Draft EIS as appropriate. These technical sections provide a detailed analysis of other relevant environmental effects as a result of development of the project; therefore, indirect impacts are not discussed further in this section.

3.6.4.3 IMPACT ANALYSIS

The six parcels are proposed for residential development under the Sunridge Specific Plan. The City of Rancho Cordova is characterized as a jobs-rich community with homes and apartments that could not meet housing demands of the workforce as identified in the Housing Element of the Rancho Cordova General Plan. For some residential development, skilled workers are not available locally and are drawn from outside the area surrounding the development. These workers could cause a temporary impact on available housing in the communities in which they work. Given current economic conditions for the region, skilled workers would be expected to be available for the project development anticipated for the next several years.

Implementation of the Sunridge Specific Plan, including the six projects discussed in this EIS, would have a beneficial effect on the local economy. Therefore, discussion of effects to employment is not warranted. The three alternatives were analyzed in regards to population and housing below:

IMPACT3.6-1 – Reduction in available housing. *Project implementation would increase demand for housing reducing the amount of available housing.*

Proposed Project Alternative - Under the Proposed Project Alternative, each of the six parcels would be developed as follows:

- **Anatolia IV –** A total of 134 single family homes would be built.
- **Sunridge Village J** – A total of 369 single family homes would be built.
- **Grantline 208** – A total of 855 single family homes would be built.
- **Douglas Road 98** – A total of 693 single family homes would be built.

- **Douglas Road 103** – A total of 301 single family homes would be built.

- **Arista del Sol** – A total of 906 single family homes would be built.

The proposed fill activity would occur in conjunction with construction of this residential development. Under this alternative, there would be **no direct or indirect adverse impact** on housing and population as temporary housing for workers would not be necessary and the new housing would be developed to address local housing shortage needs. No mitigation is required.

Reduced Footprint Alternative - Under the Reduced Footprint Alternative, each of the six parcels would be developed as follows:

- **Anatolia IV –** A total of 134 single family homes would be built.

- **Sunridge Village J** – A total of 369 single family homes would be built.

- **Grantline 208** – A total of 556 single family homes would be built.

- **Douglas Road 98** – A total of 619 single family homes would be built.

- **Douglas Road 103** – A total of 301 single family homes would be built.

- **Arista del Sol** – A total of 532 single family homes would be built.

The proposed fill activity would occur in conjunction with construction of this residential development. Under this alternative, there would be **no direct or indirect adverse impact** on housing and population as temporary housing for workers would not be necessary and some new housing would be developed to address local housing shortage needs.

No Action Alternative - Under this alternative, a DA permit would not be issued and, therefore, no wetlands would be filled, and development would also not occur within 25 feet of the wetlands. Without a permit, each of the parcels would be developable as follows:

- **Anatolia IV –** A total of 109 single family homes would be built.

- **Sunridge Village J** – A total of 339 single family homes would be built.

- **Grantline 208** – A total of 470 single family homes would be built.

- **Douglas Road 98** – A total of 568 single family homes would be built.

- **Douglas Road 103** – A total of 120 single family homes would be built.

- **Arista del Sol** - A total of 453 single family homes would be built.

Under this alternative, there would be **no direct or indirect impact** on housing and population as temporary housing for workers would not be necessary and some new housing would be developed to address local housing shortage needs.

Mitigation Measure: No mitigation measures are required.

Impact 3.6-2 – Demand for new housing. *Project implementation would generate demand for new housing that cause significant environmental impacts.*

Proposed Project Alternative - The proposed project alternative is intended to meet existing housing demand and would not create a substantial demand for new housing. Therefore, this alternative would have **no direct or indirect impacts** on demand for new housing**.**

Reduced Footprint Alternative - The Reduced Footprint Alternative would address a portion of the existing housing demand, and would not create a substantial demand for new housing. Therefore, this alternative would have **no direct or indirect** impacts on demand for new housing.

No Action Alternative - The No Action Alternative would address a portion of the existing housing demand, and would not create a substantial demand for new housing. Therefore, this alternative would have **no direct or indirect** impacts on demand for new housing.

Mitigation Measure: No mitigation measures are required.

Impact 3.6-3 – Displace substantial numbers of existing people or housing. *Project implementation would displace people or housing, by causing removal of existing housing, forcing existing residents to move elsewhere.*

Proposed Project Alternative - There is no existing housing within the six project sites. Therefore this alternative would have **no direct or indirect** impacts.

Reduced Footprint Alternative There is no existing housing within the six project sites. Therefore this alternative would have **no direct or indirect** impacts.

No Action Alternative - There is no existing housing within the six project sites. Therefore this alternative would have **no direct or indirect** impacts.

Mitigation Measure: No mitigation measures are required.

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3.7 TRAFFIC AND TRANSPORTATION

This section describes the transportation conditions in the vicinity of the analysis area, applicable policies and programs, environmental consequences of the proposed action and alternatives, and associated mitigation measures.

3.7.1 AREA OF ANALYSIS

The area of analysis for transportation includes the road network within and immediately adjacent to the City of Rancho Cordova. The area of analysis is generally bordered by Douglas Boulevard and Grant Line Road.

3.7.2 AFFECTED ENVIRONMENT

This section describes the affected environment as it relates to traffic and transportation, including the, roadways, level of service, the bus system, the rail system, and bicycle systems.

3.7.2.1 ROADWAYS

The City's roadway network is urban within developed areas of the City (north of Douglas Road, west of Sunrise Boulevard) and rural within undeveloped areas of the City (east of Sunrise Boulevard, south of U.S. Highway 50 (U.S. 50). The following are major roadways within the City.

U.S. 50, a state highway, is an east-west multi-lane freeway beginning just west of the City of Sacramento and continuing east through Sacramento County to Lake Tahoe and beyond. It varies from eight lanes in the urban areas of metropolitan Sacramento to two to four lanes in rural areas in El Dorado County. In the Rancho Cordova area, U.S. 50 varies from an eight-lane facility a six-lane facility with the addition of two high occupancy vehicle (HOV) lanes east of Sunrise Boulevard.

State Route (SR)-16 (Jackson Highway) is an east-west rural highway that runs along the south edge of the city to Sacramento to the west and Rancho Murieta and Amador County to the east. SR-16 is a two-lane facility.

Sunrise Boulevard is a north-south major road connecting Grant Line Road to the City of Roseville. It has two lanes between Grant Line Road and Douglas Road, four lanes between Douglas Road and White Rock Road, and six lanes north of White Rock Road. The U.S. 50/Sunrise Boulevard interchange is an L-9 configuration with loop on-ramps in the northeast and southwest quadrants and diagonal ramps in all four quadrants.

White Rock Road extends from International Drive to El Dorado County. It is a two-lane local road between International Drive and Zinfandel Drive, a six-lane secondary road between Zinfandel Drive and Sunrise Boulevard, and a two-lane rural road east of Sunrise Boulevard.

Mather Field Road extends from the Mather Reuse Area to Folsom Boulevard. It is a six-lane major road between International Drive and U.S. 50, and a four-lane major road between U.S. 50 and Folsom Boulevard. The U.S. 50/Mather Field Road interchange is an L-9 configuration with loop on-ramps in the northeast and southwest quadrants and diagonal ramps in all four quadrants.

Douglas Road is a two-lane secondary road that extends from Mather Boulevard in the Mather Reuse Area to Grant Line Road.

Grant Line Road is a two-lane secondary road that extends from State Route 99 to White Rock Road through the southeastern portion of the city.

Zinfandel Drive is a four-lane major road from International Drive to Folsom Boulevard. North and east of Folsom Boulevard it is a two-lane residential collector. The U.S. 50/Zinfandel Drive interchange is an L-9 configuration with loop on-ramps in the northeast and southwest quadrants and diagonal ramps in all four quadrants.

Hazel Avenue is four-lane north-south major road through Sacramento County that becomes Sierra College Boulevard in Placer County. The U.S. 50/Hazel Avenue interchange is an L-9 configuration with loop on-ramps in the northeast and southwest quadrants and diagonal ramps in all four quadrants.

International Drive is a four-lane east-west major road, beginning at the Mather Field Road/White Rock Road intersection and extending east to Kilgore Road.

Folsom Boulevard parallels U.S. 50 from Business 80 in Downtown Sacramento to Folsom, where it becomes Folsom-Auburn Road and continues north to Auburn. Folsom Boulevard is generally a four-lane major road within the City. The County of Sacramento recently completed widening of Folsom Boulevard between Hazel Avenue and Sunrise Boulevard from two- to four-lanes. Paralleling the south side of Folsom Boulevard is the Regional Transit (RT) light rail transit (LRT).

Gold Country Drive is a two-lane local road, beginning at Sunrise Boulevard and extending east to Hazel Avenue through the unincorporated community of Gold River.

Bradshaw Road is a two- to six-lane major road beginning at Folsom Boulevard and extending south to Grant Line Road. North of Goethe Road, Bradshaw Road is six-lanes. South of U.S. 50, Bradshaw Road narrows from six- to two-lanes as it extends south.

3.7.2.2 LEVEL OF SERVICE

Level of service (LOS) is a qualitative measure describing operational conditions within a traffic stream and their perception by motorists and/or passengers. An LOS definition provides an index to quality of traffic flow in terms of such factors as speed, travel time, freedom to maneuver, traffic interruptions, comfort, convenience, and safety.

There are generally six levels of service categories that are assigned letter designations from A to F, with LOS A representing the best operating conditions and LOS F the worst. The following describes operating conditions under each level of service:

- **LOS A** describes conditions with little to no delay to motorists.
- **LOS B** represents a desirable level with relatively low delay to motorists.
- **LOS C** describes conditions with average delay to motorists.
- **LOS D** describes operations where the influence of congestion becomes more noticeable. This level is considered by many agencies to be the limit of acceptable delay.

- **LOS E** represents operating conditions with high delay values. This level is considered by many agencies to be the limit of acceptable delay.

- **LOS F** is considered to be unacceptable to most drivers with high delay values that often occur when arrival flow rates exceed the capacity of the intersection.

The segment of Douglas Road east of Sunrise Boulevard to Grant Line Road, adjacent to the project sites, operates at an LOS A. Grant Line Road also operates at an LOS A (Rancho Cordova, 2006). The following roadway segments in the City operate unacceptably at LOS E or LOS F:

- Folsom Boulevard – Mather Field Road to Coloma Road

- Sunrise Boulevard – Gold Country Drive to Coloma Road

- Sunrise Boulevard – Coloma Road to U.S. 50 Westbound Ramps

- Sunrise Boulevard – U.S. 50 Eastbound Ramps to Folsom Boulevard

- Sunrise Boulevard – Douglas Road to SR-16

- Hazel Avenue – Winding Way to U.S. 50 Westbound Ramps

- Bradshaw Road – U.S. 50 to Old Placerville Road

- Bradshaw Road – Old Placerville Road to Kiefer Boulevard (Rancho Cordova, 2006)

3.7.2.3 BUS SYSTEM

Sacramento Regional Transit operates the bus system within Sacramento County, including Rancho Cordova. Fixed-route bus service within the City includes Routes 21, 28, 72, 73, 74, 75, and 91. Routes 72, 73, 74, and 75 generally operate in the areas northeast of the project sites, south of U.S. 50. Most routes start or end at the light rail stations along Folsom Boulevard.

- Route 72 begins at the Watt/Manlove LRT station and extends eastward using Watt Avenue, Kiefer Boulevard, Branch Center Drive, Bradshaw Road, Lincoln Village Drive, Routier Road, Rockingham Drive, and Mather Field Road to the Mather/Mills LRT station.

- Route 73 provides service within the City between the Mather/Mills LRT station and the Sunrise LRT station. It operates on Mather Field Road, Rockingham Drive, White Rock Road, Sunrise Boulevard, Trade Center Drive, and Citrus Road.

- Route 74 operates within the City between the Mather/Mills LRT station and the Sunrise LRT station and on Mather Field Road, International Drive, Data Drive, Research Drive, Zinfandel Drive, White Rock Road, Prospect Drive, Sun Center Drive, Trade Center Drive, and Citrus Road.

- Route 75 operates in the Mather Field Area of the City, beginning at the Mather/Mills LRT station and extending south and operating on Mather Field Road, Peter A. McCuen Way, Femoyer Street, Mather Boulevard, Macready Avenue, Old Placerville Road, and Rockingham Drive.

3.7.2.4 RAIL SYSTEM

LRT service is provided from Downtown Sacramento along the U.S. 50 corridor to the Sunrise Boulevard Station eastward to the City of Folsom. The following LRT stations provide service within the City:

- Mather/Mills station located at the Mather Field Road/Folsom Boulevard intersection. The station has 298 total parking spaces.
- Zinfandel station located at the Zinfandel Drive/Folsom Boulevard intersection.
- Cordova Town Center station located at the Cordova Lane/Folsom Boulevard intersection.
- Sunrise station located at the Sunrise Boulevard/Folsom Boulevard intersection. The station has 487 parking spaces.
- Hazel station located at the Hazel Avenue/Folsom Boulevard intersection. The station has 432 parking spaces.

3.7.2.5 BICYCLE SYSTEM

Bicycle facilities include Class I (off-street facilities), Class II (on-street bicycle lanes identified with signage and markings), and Class III (on-street bicycle routes identified by signage). Pedestrian facilities are comprised of paths, sidewalks, and pedestrian crossings. Class I off-street bike paths exist along the Folsom South Canal, American River, and along a portion of Sunrise Boulevard south of the American River. There is a bike/pedestrian only crossing of U.S. 50 between Mather Field Road and White Rock Road. Sidewalks exist on most streets within the developed portions of the City.

3.7.3 REGULATORY FRAMEWORK

3.7.3.1 FEDERAL PLANS, POLICIES, REGULATIONS AND LAWS

There are no federal plans, policies, regulations, or laws related to traffic and transportation that are significantly applicable to the alternatives under consideration.

3.7.3.2 STATE PLANS, POLICIES, REGULATIONS AND LAWS

State plans, policies, regulations and laws related to traffic and transportation that are significantly applicable to the proposed project or alternatives under consideration are the California Department of Transportation (Caltrans) Guidelines.

CALIFORNIA DEPARTMENT OF TRANSPORTATION

According to the Caltrans Guidelines for the preparation of Traffic Impact Studies (December 2002), the following criteria are a starting point in determining when a Traffic Impact Study (TIS) is needed for a project:

- Generates over 100 peak hour trips assigned to a state highway facility.
- Generates 50 to 100 peak hour trips assigned to a state highway facility and, affected state highway facilities are experiencing noticeable delay approaching unstable traffic flow conditions (LOS “C” or “D”).

- Generates 1 to 49 peak hour trips assigned to a state highway facility, and:
    - Affected state highway facilities are experiencing significant delay including unstable or forced traffic flow conditions (LOS "E" or "F");
    - The potential risk for a traffic incident is significantly increased (i.e., congestion related collisions, non-standard sight distance considerations, increase in traffic, conflict points, etc.); or
    - The change in local circulation networks impacts a state highway facility (i.e., direct access to state highway facility, a non-standard highway geometric design, etc.).

In addition, Caltrans prepares a Transportation Concept Report (TCR) for each of the state highway facilities. The TCR is an internal planning document which expresses Caltrans' judgment on what the characteristics of each state highway should be in response to proposed land uses and projected travel demand over a 20-year planning period. Within the area of analysis, there are two state highway facilities: SR 16 and U.S. 50. The U.S. 50 TCR was last prepared in April 1998; at that time, the concept for the segments of U.S. 50 within the area of analysis was LOS E. The 1998 TCR identified that the concept at LOS E would be difficult to maintain, especially in metropolitan Sacramento County. In the recent draft U.S. 50 TCR (December 2009), the concept for the existing 20-year no build planning period is LOS F for the segments of U.S. 50 within the area of analysis.

According to the SR16 TCR (2004), the Concept for SR16 is LOS E.

3.7.3.3 REGIONAL AND LOCAL PLANS, POLICIES, REGULATIONS AND ORDINANCES

Regional plans, policies, regulations and laws related to traffic and transportation that are significantly applicable to the alternatives under consideration include the Sacramento County Traffic Impact Study Guidelines, Sacramento County General Plan, Rancho Cordova General Plan, and the Rancho Cordova Transit Master Plan.

SACRAMENTO COUNTY TRAFFIC IMPACT STUDY GUIDELINES

According to the Sacramento County Traffic Impact Study Guidelines dated 2004, a traffic study is required if:

- The project will generate 100 or more new a.m. or p.m. peak hour vehicle trip-ends.
- The project will generate 1,000 or more daily vehicle trip ends.
- New project traffic will substantially affect an intersection or a roadway segment already identified as operating at unacceptable level of service.
- The project may create a hazard to public safety.
- The project will substantially change the off-site transportation system or connections to it.

Sacramento County and the City of Rancho Cordova have adopted certain LOS thresholds for existing and proposed roadway segments as illustrated in their respective General Plans.

SACRAMENTO COUNTY GENERAL PLAN CIRCULATION ELEMENT

The Sacramento County General Plan Circulation Element provides a Transportation Plan for the County that is intended to stress the importance of a balanced planning philosophy with more emphasis on alternative modes of transportation. The Element provides for walking, biking and transit facilities to link destinations, and a land use plan which promotes mixed used development which situates workers near jobs and shoppers near stores. The Sacramento County General Plan was adopted in 1993; an update to the General Plan is currently underway.

CITY OF RANCHO CORDOVA GENERAL PLAN CIRCULATION ELEMENT

The City's Circulation Element describes existing and future transportation systems in the city and establishes goals, policies, and actions to improve the City's road network, transit facilities and services, and bicycle and pedestrian facilities. The Element outlines an approach to develop a road network operating at an acceptable level of service, offer multiple transportation options, improve local and regional connectivity, and support pedestrian and bicycle transit.

CITY OF RANCHO CORDOVA TRANSIT MASTER PLAN

The Transit Master Plan provides an approach to support transportation objectives detailed in the City's General Plan. The plan proposes a system of city, neighborhood and regional services to connect residents to businesses, shopping, recreation and regional destinations. Regional services focus on bus rapid transit routes and additional stations along the Light Rail Gold Line. Local plans include shuttle services in the short term and an initial three-mile streetcar route in the long term.

3.7.4 ENVIRONMENTAL CONSEQUENCES AND MITIGATION MEASURES

This section describes the potential traffic and transportation impacts.

3.7.4.1 THRESHOLDS OF SIGNIFICANCE

The threshold for determining the significance of impacts for this analysis encompasses the factors taken into account under NEPA to determine the significance of an action in terms of its context and the intensity of its impacts. The alternatives under consideration were determined to result in a significant impact related to traffic if they would:

- Result in a reduction of level of service at existing roadways.

3.7.4.2 ANALYSIS METHODOLOGY

LEVEL OF SERVICE

The evaluation of transportation impacts associated with the Sunrise Douglas Community Plan/Sunridge Specific Plan EIR focuses on capacity analysis for roadway segments and intersections. A primary result of capacity analysis is the assignment of levels of service to traffic facilities under various traffic flow conditions. The capacity analysis methodology is based on the concepts and procedures in the *Highway Capacity Manual* (HCM) (Transportation Research Board, 2001). The concept of level of service (LOS) is defined as a qualitative measure describing operational conditions within a traffic stream and their perception by motorists and/or passengers. A level-of-service definition provides an index to quality of

traffic flow in terms of such factors as speed, travel time, freedom to maneuver, traffic interruptions, comfort, convenience, and safety.

Six levels of service are defined for each type of facility (See Section 3.7.2.2). They are assigned letter designations from A to F, with LOS A representing the best operating conditions and LOS F the worst. Since the level of service of a traffic facility is a function of the traffic flows placed upon it, such a facility may operate at a wide range of levels of service, depending on the time of day, day of week, or period of year.

UNSIGNALIZED INTERSECTIONS

Levels of service for unsignalized intersections are calculated using the operational analysis methodology of the HCM. The procedure accounts for lane configuration on both the minor and major street approaches, conflicting traffic stream volumes, and the type of intersection control (STOP, YIELD, or all-way STOP control). The definition of level of service for unsignalized intersections is a function of average *control* delay. Control delay includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. The level-of-service criteria for unsignalized intersections are shown in Table 3.7-1.

SIGNALIZED INTERSECTIONS

Levels of service for signalized intersections are also calculated using the operational analysis methodology of the HCM. The methodology for signalized intersections assesses the effects of signal type, timing, phasing, and progression; vehicle mix; and geometrics on average *control* delay. Control delay includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay.

Table 3.7-1 summarizes the relationship between level of service and average control delay.

Table 3.7-1
Local Access Route Existing Traffic Volumes and Arterial LOS

Level of Service	***Unsignalized Intersection Criteria*** Average Control Delay (Seconds per Vehicle)	***Signalized Intersection Criteria*** Average Control Delay (Seconds per Vehicle)
A	≤10	≤10
B	>10 and ≤15	>10 and ≤20
C	>15 and ≤25	>20 and ≤35
D	>25 and ≤35	>35 and ≤55
E	>35 and ≤50	>55 and ≤80
F	>50	>80

Source: *Highway Capacity Manual 2000,* Transportation Research Board, 2001, pages 16-2 and 17-2.

For signalized intersections, this delay criterion may be applied in assigning level-of-service designations to individual lane groups, to individual intersection approaches, or to the entire intersection. For unsignalized intersections, this delay criterion may be applied in assigning level-of-service designations to individual lane groups or to individual intersection approaches.

As illustrated in Table 3.7-1, a good LOS consists of minimal delays, while a poor LOS consists of extended delays. Delays can be correlated to the ratio between traffic volume and capacity. For example if the volume of traffic approaching an intersection is greater than the capacity for that volume of traffic,

the end result is a poor LOS. Conversely, if the volume of traffic approaching an intersection is significantly less than the capacity, the end result is a good LOS.

ROADWAY SEGMENTS

LOS thresholds were developed for the Rio del Oro Specific Plan Project DEIR/EIS, for roadway segments based on daily volumes, number of lanes and facility type based on the capacities in the Rancho Cordova's General Plan EIR as well as the 2004 Sacramento County Traffic Impact Analysis Guidelines (Rancho Cordova and USACE, 2006).

ASSESSMENT PERIODS

According to Caltrans' Guidelines for Preparation of Traffic Impact Studies, the following scenarios are typically evaluated:

- Existing Conditions - Current year traffic volumes and peak hour LOS analysis of affected state highway facilities.

- Existing Conditions plus Proposed Project - Trip generation, distribution, and assignment in the year the project is anticipated to complete construction.

- Cumulative Conditions (Existing Conditions Plus Other Approved and Pending Projects without Proposed Project) - Trip assignment and peak hour LOS analysis in the year the project is anticipated to complete construction but without the proposed project impacts.

- Cumulative Conditions Plus Proposed Project (Existing Conditions Plus Other Approved and Pending Projects Plus the Project) - Trip assignment and peak hour LOS analysis in the year the project is anticipated to complete construction with the proposed project impacts.

PREVIOUS STUDIES

Previous studies have addressed traffic in the vicinity. Traffic data used to establish the environmental conditions in the study area were modeled and compiled in the Sunrise Douglas Community Plan/ Sunridge Specific Plan EIR (County of Sacramento, 2001), and the Rio del Oro Specific Plan Project DEIR/DEIS (Rancho Cordova and USACE, 2006). The capacity analysis methodology used in the 2001 SDCP/SRSP EIR and the 2006 Rio del Oro Specific Plan Project was based on (1) the concepts and procedures in the Highway Capacity Manual (Transportation Research Board, 2001), (2) the LOS thresholds for roadway segments (Rancho Cordova and USACE, 2006), and (3) trip generation rates in the Institute of Transportation Engineers (ITE) Trip Generation Manual (ITE 2008). Each of these methodologies continues to be relevant and appropriate for this assessment. The 2001 SDCP/SRSP EIR and 2006 Rio del Oro Specific Plan Project are incorporated by reference and brief summaries are provided below. The development of adjacent residential communities has occurred since these earlier studies, and traffic generated from these developments is taken into consideration in the impact analysis.

For the purposes of this EIS it is assumed that planned roadway improvements occurring as part of regional development would occur regardless of the alternatives evaluated in this EIS. According to the Sacramento County General Plan Transportation Plan, roadway improvements planned to accommodate an increase in traffic in the area of the alternatives are as follows:

- Sunrise Boulevard - widened to six lanes from Folsom Boulevard to Jackson Highway.

- Douglas Road - widened to six lanes from Sunrise Boulevard to Zinfandel Drive (west of the area of analysis) and extended from Zinfandel Drive to Excelsior Road (west of the area of analysis) as a four lane road.

- Jackson Highway (State Route [SR] 16) - Widened to four lanes east of Bradshaw Road.

- Kiefer Road – Extended from the project site to Jackson Highway as a four-lane collector.

- Grant Line Road - Widened to four lanes from White Rock Road to SR 99.

The Sunridge Specific Plan also proposed the following internal roadways within the area of the Sunrise Douglas Community Plan area to connect to the existing roadways:

- Pyramid Road: a primary four-lane arterial that will bisect the northern area of the Sunridge Specific Plan project from Sunrise Boulevard east to Grant Line Road.

- Jaeger Road: a north-south four-lane arterial extending from Douglas Road south to Kiefer Boulevard.

- Americanos Road: a north-south four-lane arterial extending from Douglas Road south to Kiefer Boulevard and east of Jaeger Road.

- Minor Residential Roads: constructed to provide internal circulation to residential areas within the potential project sites.

3.7.4.3 IMPACT ANALYSIS

Impact 3.7-1 – Reduced level of service. *Activities associated with project build-out in the project site would result in a reduction of level of service at roadways in the vicinity.*

Proposed Project Alternative. Expected traffic volume increases associated with a development project are typically determined using the Institute of Transportation Engineers (ITE) *Trip Generation Manual* (ITE 2008) land use trip generation rates. According to the Sunrise Douglas Community Plan/Sunridge Specific Plan EIR, the Specific Plan was expected to generate 114,783 daily trips, 7,960 AM peak hour trips and 11,999 PM peak hour trips. These trips are considered external trips outside of the Sunridge Specific Plan area.

The alternatives are anticipated to generate significantly less daily and peak hour trips than that modeled for the Sunridge Specific Plan, due to the smaller number of housing units proposed. Utilizing trip generation calculations associated with the development alternatives are based on trip-generation rates for Land Use Code (LUC) 210 Single Family Detached Housing as published in the ITE *Trip Generation Manual*. Table 3.7-2 illustrates the trip generation calculations associated with the Proposed Project Alternative.

Table 3.7-2
Trip Generation Summary

	Anatolia IV	Sunridge Village J	Grantline 208	Douglas Road 98	Douglas Road 103	Arista Del Sol	Total
Time Period/Direction							
Number of Units	134	369	855	693	301	906	3,258
Weekday Daily	1,361	3,456	7,488	6,172	2,866	7,898	29,241
Weekday AM Peak Hour:							
Enter	26	67	152	124	55	161	585
Exit	78	201	456	371	165	483	1754
Total	***104***	***268***	***608***	***495***	***220***	***644***	***2,339***
Weekday PM Peak Hour:							
Enter	86	214	457	378	178	481	1794
Exit	51	126	268	222	105	283	1055
Total	***137***	***340***	***725***	***600***	***283***	***764***	***2,849***

[a] Land Use Code 210 (Single Family Detached Housing); ITE *Trip Generation*; 8th Edition; Washington, D.C.; 2008; rates based on number of units, Morning/Evening Peak Hour of Adjacent Street Traffic

The Proposed Project Alternative is expected to generate 29,241 new daily trips; 2,339 new trips during the morning peak hour and 2,849 new trips during the evening peak hour. This volume constitutes only 27 percent of the daily external traffic volumes expected to be generated by the entire Sunridge Specific Plan. This volume constitutes between 25 and 32 percent of the traffic expected to be generated by the entire Specific Plan during the peak hours.

The Proposed Project Alternative would increase peak-hour and daily traffic volumes, resulting in level of service decreases at various roadway segments, intersections, and freeway ramps, including roadways that are already at LOS E and F. The LOS decreases are a **significant and unavoidable** impact.

Reduced Footprint Alternative. The Reduced Footprint Alternative would increase peak-hour and daily traffic volumes, resulting in level of service decreases at various roadway segments, intersections, and freeway ramps, including roadways that are already at LOS E and F. The LOS decreases are a **significant and unavoidable** impact.

Traffic impacts resulting from the Reduced Footprint Alternative would be less than those under the Proposed Project Alternative but remain significant and unavoidable.

No Action Alternative. The No Action Alternative would increase peak-hour and daily traffic volumes, resulting in level of service decreases at various roadway segments, intersections, and freeway ramps, including roadways that are already at LOS E and F. The LOS decreases are a **significant and unavoidable** impact.

Traffic impacts resulting from the Reduced Footprint Alternative would be less than those under the Proposed Project Alternative but remain significant and unavoidable.

Mitigation Measures for Impact 3.7-1 – Reduction of Level of Service

Proposed Project Alternative, Reduced Footprint Alternative, and No Action Alternative

- Sunrise Boulevard north of White Rock Road is currently constructed to its ultimate width. As such, no feasible mitigation measures are available to increase daily capacity on this facility. All three alternatives shall participate on a fair share basis on any program implemented by the County, Caltrans, or other local agencies to reduce vehicle travel on Sunrise Boulevard.

- Widen Sunrise Boulevard from White Rock Road to Douglas Road from 4 lanes to 6 lanes, and from Douglas Road to Jackson Highway, from 2 lanes to 4 lanes. This improvement would increase capacity on Sunrise Boulevard to accommodate existing and project-alternative-generated traffic. This widening should occur when traffic volumes reach 90 percent of capacity of a four lane facility, or 32,400 daily vehicles, and 90 percent of capacity of a two-lane facility or 16,200.

- Widen Douglas Road 2 lanes to 4 lanes from Americanos Boulevard to access roads approximately 1,500 feet west of Sunrise Boulevard. This improvement would increase capacity on Douglas Road to accommodate primarily project alternative traffic. This widening should occur when traffic volumes reach 90 percent capacity for a two-lane facility, or 16,200 vehicles.

- Widen Folsom Boulevard to 6 lanes between Mather Field Road and Coloma Road to accommodate existing and project-alternative generated traffic.

- Widen sections of Hazel Avenue from Folsom Boulevard to Winding Way from its current four lanes to its ultimate width of six lanes to accommodate existing and project-alternative-generated traffic.

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3.8 NOISE

This section describes the affected environment, environmental consequences, and mitigation measures with respect to noise. The mechanics of sound and the regulatory framework for noise are also described.

3.8.1 AREA OF ANALYSIS

The area of analysis for noise is defined as the areas near the project sites that could be affected by sounds from the Proposed Project Alternative. To determine noise impacts, a study of noise levels in the existing project sites, and sound-creating activities from nearby aircraft and industrial operations facilities, and traffic, was reviewed.

3.8.2 MECHANICS OF SOUND

Noise is often defined as unwanted sound. Sound is a mechanical form of radiant energy transmitted by pressure waves in the air. It is characterized by two parameters: amplitude (loudness) and frequency (tone).

Amplitude is the difference between ambient air pressure and the peak pressure of the sound wave. It is measured in decibels (dB) on a logarithmic scale. For example, a 10 dB sound is 10 times the pressure difference of a 1 dB sound. Sound amplitudes from multiple sources add together in the following way: a 65 dB source of sound, when joined by another identical 65 dB source, results in sound with amplitude of 68 dB, not 130 dB (i.e., doubling the source strength increases the sound pressure by 3 dB). A 10 dB increase in amplitude is perceived as a doubling of loudness and a 3 dB change in amplitude is the minimum audible difference is only perceptible to the average person.

Frequency is the number of fluctuations of the pressure wave per second. The unit of frequency is the Hertz (Hz). One Hz equals one cycle per second. The human ear is not equally sensitive to sounds of different frequencies. Sound waves below 16 Hz or above 20,000 Hz cannot be heard by the human ear. To approximate human sensitivity to audible frequencies, environmental sound is usually measured in A-weighted decibels (dBA). On this scale, the normal range of human hearing extends from approximately 10 dBA to approximately 140 dBA. Listed in Figure 3.8-1 are several examples of the noise levels associated with common noise sources.

The intensity of environmental noise fluctuates over time, and several descriptors of time-averaged noise levels are used. The three most commonly used descriptors are energy-equivalent noise level (L_{eq}), day-night average noise level (L_{dn}), and the community equivalent noise level (CNEL). The L_{eq} is a measure of the average energy content (intensity) of noise over a given period. Many communities use 24-hour descriptors of noise levels to regulate noise. The L_{dn} is the 24-hour average of the noise intensity, with a 10-dBA "penalty" added for nighttime noise (10 p.m.–7 a.m.) to account for the greater sensitivity to noise during this period. The CNEL is similar to L_{dn} but adds an additional 5-dBA "penalty" for evening noise (7–10 p.m.). Another descriptor that is commonly discussed is the single-event noise exposure level (SENEL), also referred to as the sound exposure level (SEL). The SENEL/SEL describes a receiver's cumulative noise exposure from a single noise event, which is defined as an acoustical event of short duration (such as a backup beeper, the sound of an airplane traveling overhead, or a train whistle) and involves a change in sound pressure above a defined reference value (usually approximately 40 dBA). Noise analyses may also depend on measurements of the maximum instantaneous noise level during a specific period of time (L_{max}) and the minimum instantaneous noise level during a specific period (L_{min}).

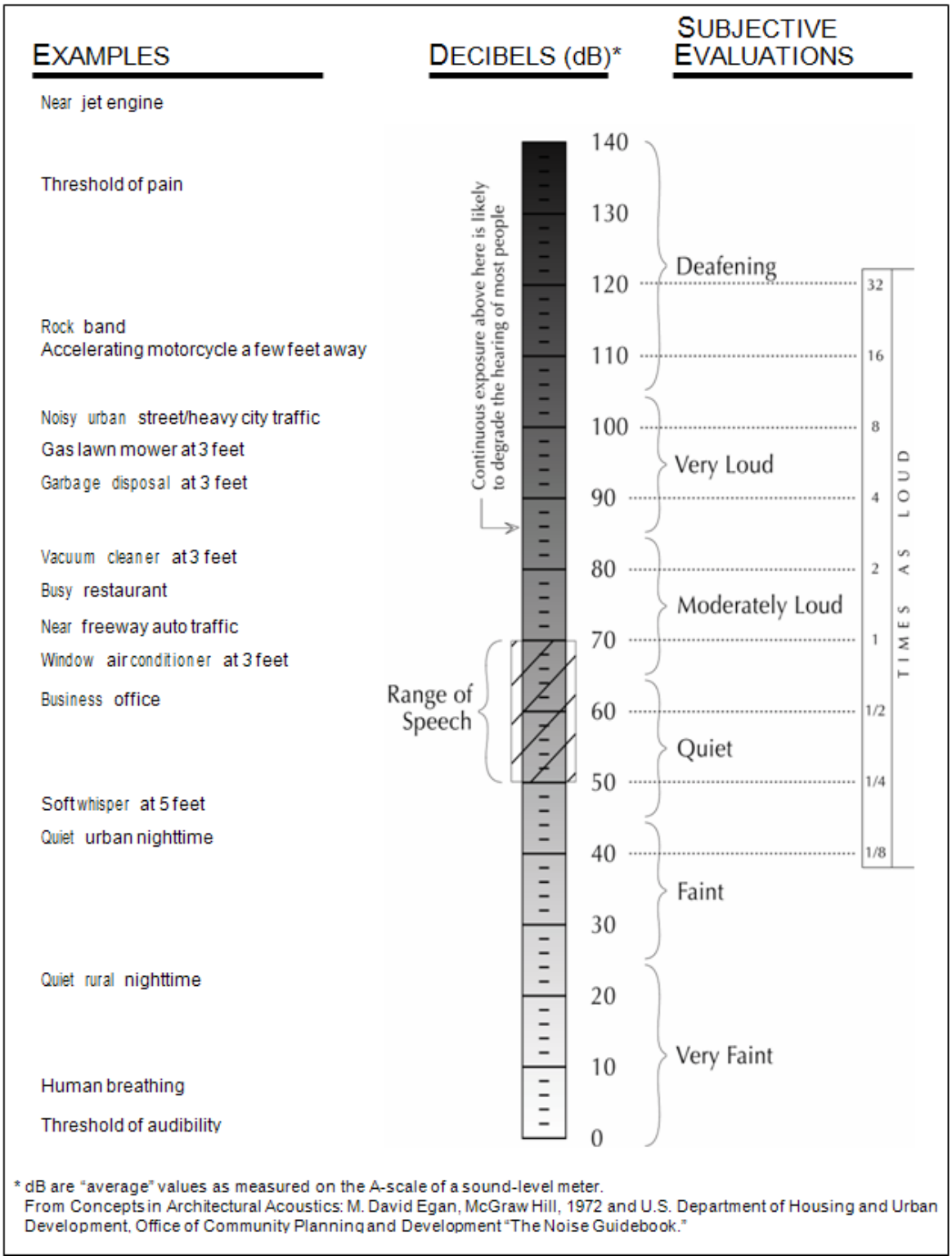

Figure 3.8-1 Example Noise Levels

Noise can be generated by a wide variety of sources-both mobile sources, such as automobiles, trucks, and airplanes, and stationary sources, such as machinery and industrial operations. Noise generated by mobile sources typically attenuates (is muffled or reduced) at a rate of 3.0 to 4.5 dBA per doubling of distance, depending on the ground surface and the number or type of objects between the noise source and the receiver. Hard and flat surfaces such as concrete or asphalt have an attenuation rate of 3.0 dBA per doubling of distance. Soft surfaces such as uneven or vegetated terrain have an attenuation rate of approximately 4.5 dBA per doubling of distance. Noise generated by stationary sources typically attenuates at a rate of 6.0 dBA per doubling of distance from the source.

Sound levels can be reduced by placing barriers between the noise source and the receiver. In general, barriers contribute to decreasing noise levels only when the structure breaks the "line of sight" between the source and the receiver. Buildings, concrete walls, and berms can all act as effective noise barriers. Wooden fences or broad areas of dense foliage also can reduce noise but are less effective than solid barriers.

The human response to noise is subjective. Community noise has often been cited in terms of inhibiting general well-being and contributing to undue stress and annoyance. The public health effects of noise arise from interference with human activities, including sleep, speech, recreation, and tasks that demand concentration or coordination. Hearing loss can occur at the highest noise intensity levels. The acceptability of noise levels is the basis for land use planning policies that prohibit exposure to excessive community noise levels.

Because construction activities typically are short term, the associated effects of construction-generated noise typically are limited to annoyance and interference with speech. In an exterior noise environment, noise levels in excess of 60 dBA are generally considered to have an appreciable degree of speech interference. The level at which speech interference occurs is based on an average sentence comprehension rate of approximately 98% at 5 meters. Greater speaker-listener distances would be possible indoors at the same level of vocal effort and speech intelligibility because sound pressure levels diminish more slowly than predicted by the inverse-square law, which is typically used in the exterior environment (USEPA, 1971).

Unfortunately, there is no completely satisfactory way to measure the subjective effects of noise or of the corresponding reactions of annoyance and dissatisfaction. This is primarily because of the wide variation in individual thresholds of annoyance and habituation to noise over differing individual experiences with noise. Thus, an important way to determine a person's subjective reaction to a new noise is to compare the new noise to the existing environment to which one has adapted: the so-called "ambient" environment. In general, the more a new noise exceeds the previously existing ambient noise level, the less acceptable the new noise will be judged by the hearers. Regarding increases in A-weighted noise levels, knowledge of the following relationships will be helpful in understanding this analysis (USEPA, 1971):

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

3.8.3 AFFECTED ENVIRONMENT

The existing noise environment in and surrounding the Sunridge Specific Plan Properties is influenced primarily by noise from: vehicular traffic, aircraft noise from Mather Field, gunfire from the Cordova Shooting Center, American River Aggregates Plant, Kiefer Road Landfill, Sacramento Rendering Company, and activity at the Douglas Security Park. Traffic noise modeling and noise monitoring were conducted and presented in the Sunrise-Douglas Community Plan/Sunridge Specific Plan Environmental Impact Report and the Rio del Oro Specific Plan Project EIR/EIS (County of Sacramento, 2001; Rancho Cordova and USACE, 2006). The traffic modeling and noise monitoring assessments are relevant and appropriate for the Sunridge Specific Plan Properties and are incorporated by reference. A brief summary of the assessment is provided below.

3.8.3.1 VEHICULAR TRAFFIC NOISE

The Federal Highway Administration (FHWA) Highway Traffic Noise Prediction Model (FHWA RD-77-108) was used during preparation of the Sunrise-Douglas Community Plan/Sunridge Specific Plan Environmental Impact Report for the prediction of existing traffic noise levels in the vicinity (County of Sacramento, 2001). The FHWA Model was the analytical method currently favored for traffic noise prediction by most state and local agencies. The model was based upon the California Vehicle Noise (CALVENO) emission factors for automobiles, medium trucks and heavy trucks, with consideration given to vehicle volume, speed, roadway configuration, distance to the receiver, and the acoustical characteristics of the site.

Existing traffic data for area roadways were obtained from the County of Sacramento. Other assumptions regarding day/night traffic distributions, speed and truck mix are based upon file data and assumptions used in the Sacramento County Noise Element, which were also adopted in the Rancho Cordova Noise Element. The FHWA Model utilized data and assumptions used in the Sacramento County Noise Element. The FHWA Model input data for all major plan area roadways for existing conditions are provided in Table 3.8-1. Output from the model is presented in Table 3.8-2, which shows the calculated existing noise levels at a reference distance of 75 feet from the roadway centerlines, intended to represent the location of typical outdoor activity areas for residential developments. Table 3.8-2 also shows the calculated distances to the existing 60 and 65 dB L_{dn} contours for each of the area roadways (County of Sacramento, 2001).

An additional traffic noise study was conducted for the property north of the analysis area and presented in the Rio del Oro Specific Plan Project EIR/EIS (City of Rancho Cordova and USACE, 2006). Work performed for Rio del Oro predicted roadway traffic noise levels by performing calculations using the FHWA Traffic Noise Prediction Model, based on traffic data obtained from the traffic analysis prepared for project. Additional input data included day/night percentages of automobiles, medium-duty trucks, and heavy-duty trucks; vehicle speeds; ground attenuation factors; and roadway widths. Existing traffic noise levels for area roadway segments most affected by implementation of the alternatives are summarized in Table 3.8-3. The Rio del Oro Specific Plan Project EIR/EIS states that "actual noise levels will vary from day to day, dependent on various factors, including local traffic volumes, shielding from existing structures, variations in attenuation rates attributable to changes in surface parameters, and meteorological conditions."

The studies performed for both the Sunrise-Douglas Community Plan/Sunridge Specific Plan GIR and Rio del Oro Specific Plan Project EIR/EIS indicate that noise levels near existing roadways in and around the area of analysis are in the range of speech, and would be considered to be moderately loud by

residents. These studies have been reviewed and the methodologies verified, such that the conclusions have been determined to be applicable to this EIS.

Table 3.8-1
FHWA Traffic Noise Prediction Model Inputs Existing Conditions

Roadway Name	Segment Description	ADT	Day %	Night %	MT %	HT %	Speed, mph	Distance, feet	Offset, dB
Douglas Road	Eagles Nest Road to Sunrise Boulevard	2,000	87	13	2.5	2.5	55	75	0
Douglas Road	Sunrise Boulevard to Grantline Road	1,800	87	13	5	23	55	75	0
Grant Line Road	White Rock Road to Douglas Road	2,700	87	13	5	23	55	75	-1
Grant Line Road	Douglas Road to Kiefer Boulevard	3,500	87	13	5	23	55	75	0
Grant Line Road	Kiefer Boulevard to Jackson Road	4,500	87	13	5	23	55	75	0
Jackson Road	Grant Line Road to Sunrise Boulevard	11,100	87	13	2.8	6.2	55	75	-3
Sunrise Boulevard	Jackson Road to Kiefer Boulevard	14,300	87	13	2.5	2.5	55	75	2
Sunrise Boulevard	Kiefer Boulevard to Douglas Road	15,000	87	13	2.5	2.5	55	75	2
Kiefer Boulevard	Eagles Nest Road to Sunrise Boulevard	500	87	13	2.5	2.5	55	75	0
Kiefer Boulevard	Sunrise Boulevard to Grant Line Road	500	87	13	2.5	2.5	55	75	0
Kiefer Boulevard	Grant Line Road to Jackson Road	500	87	13	2.5	2.5	55	75	0

Table 3.8-2
Existing Traffic Noise Levels

Roadway Name	Segment Description	L_{dn} dB @ 75 feet	Distances to L_{dn} Contours, feet	
			65 dB	60 dB
Douglas Road	Eagles Nest Road to Sunrise Boulevard	60.1	35	76
Douglas Road	Sunrise Boulevard to Grant Line Road	64.1	65	141
Grant Line Road	White Rock Road to Douglas Road	64.9	74	158
Grant Line Road	Douglas Road to Kiefer Boulevard	67.0	102	220
Grant Line Road	Kiefer Boulevard to Jackson Road	68.1	121	260

Table 3.8-2
Existing Traffic Noise Levels (continued)

Roadway Name	Segment Description	L_{dn} dB @ 75 feet	Distances to L_{dn} Contours, feet	
			65 dB	60 dB
Jackson Road	Grant Line Road to Sunrise Boulevard	65.8	84	181
Sunrise Boulevard	Jackson Road to Kiefer Boulevard	70.7	179	385
Sunrise Boulevard	Kiefer Boulevard to Douglas Road	70.9	184	397
Kiefer Boulevard	Eagles Nest Road to Sunrise Boulevard	54.1	14	30
Kiefer Boulevard	Sunrise Boulevard to Grant Line Road	54.1	14	30
Kiefer Boulevard	Grant Line Road to Jackson Road	55.3	17	36

Notes:
dB = decibel; L_{dn} = day-night average
Source: County of Sacramento 2001

3.8.3.2 AIRCRAFT NOISE FROM MATHER FIELD

Mather Field (formerly Mather Air Force Base [AFB]) has been open as a public-use air cargo and general aviation airport since May 5, 1995. Managed by the County of Sacramento Department of Airports, the airport, which operates 24 hours per day, consists of two primary runways, one 11,300 feet long and the other 6,100 feet long, generally aligned in a northeast-to-southwest direction. Mather Field is a joint-use facility that supports both military and commercial operations, and it is rapidly developing as an air cargo depot. The airport includes approximately 40 acres of exclusive air cargo ramp space.

Following the closure of Mather AFB in 1988, Sacramento County adopted a reuse plan for Mather Airport in fall 1991. The Airport Land Use Compatibility Plan (ALUCP) for Mather Airport was subsequently adopted in May 1997. As depicted in Figure 3.8-2, the project site is not located within the currently adopted 60 dBA CNEL noise contours of the ALUCP for Mather Airport. The noise contours were revised to account for existing and projected changes in aircraft operations that have occurred since development of the ALUCP for Mather Airport.

3.8.3.3 CORDOVA SHOOTING CENTER

The shooting center is described as a full-service shooting facility supporting the use of rifles, pistols, skeet, trap, and sporting clays. Hours of operation vary by season, but are generally limited to the daytime hours of 10 a.m. to 8 p.m. on weekdays and 9 a.m. to 6 p.m. on weekends. Shooting events such as skeet tournaments and club gatherings occasionally occur during the evening hours.

Noise levels generated by weapons fire depend on the weapons used, local shielding, and atmospheric conditions. Based on past noise measurements conducted for the Rio del Oro Specific Plan Project EIR/EIS (City of Rancho Cordova, USACE, EDAW 2006), at the Cordova Shooting Center, noise levels from weapons fire ranged from approximately 97 to 112 dBA per round at approximately 50 feet. Based on these noise levels, predicted maximum noise levels of 70 dBA could occur at a distance of one-half to 1 mile from this facility, depending on local shielding and atmospheric conditions (County of Sacramento 1993). During the periods for which daytime ambient-noise monitoring was being conducted, intermittent noise generated by weapons fire at the firing range, though discernible at times, was largely masked by noise emanating from vehicle traffic on nearby roadways (e.g., Sunrise Boulevard and Douglas Road). The center is over 1.3 miles from the nearest edge of the project site.

Table 3.8-3
Summary of Modeled Existing Traffic Noise Levels

Roadway Segment	Between		CNEL/Ldn (dBA) 50 Feet from Centerline of Near Travel Lane	Distance (ft) from Roadway Centerline to CNEL/Ldn (dBA)			
				70 CNEL	65 CNEL	60 CNEL	55 CNEL
SR 16	Excelsior Road	Eagles Nest Road	72.42	81.0	174.0	374.7	807.0
SR 16	Sunrise Boulevard	Grant Line Road	73.73	98.9	212.6	457.9	986.2
Kiefer Boulevard	Grant Line Road	North of SR 16	62.42	0.0	0.0	80.9	174.0
Mather Boulevard	Femoyer Street	Douglas Road	67.65	0.0	83.8	180.2	174.0
Douglas Road	Mather Boulevard	Sunrise Boulevard	68.84	0.0	100.6	216.4	466.0
Douglas Road	Sunrise Boulevard	Grant Line Road	65.47	0	60.1	129	277.7
International Drive	South White Rock Road	Zinfandel Drive	69.59	64.1	133.7	286.0	615.1
International Drive	Zinfandel Drive	Sunrise Boulevard	67.12	0.0	92.5	196.3	421.5
White Rock Road	Zinfandel Drive	Sunrise Boulevard	70.51	85.6	175.4	373.4	802.3
White Rock Road	Sunrise Boulevard	Grant Line Road	68.29	0.0	92.4	198.7	427.9
Folsom Boulevard	Zinfandel Drive	Sunrise Boulevard	71.87	89.2	189.0	405.7	873.1
Folsom Boulevard	Sunrise Boulevard	Hazel Avenue	73.09	89.7	192.9	415.2	894.4
Mather Field Road	Folsom Boulevard	U.S. 50 WB ramps	73.01	105.6	224.9	483.2	1,040.2
Mather Field Road	U.S. 50 EB ramps	International Drive	73.26	125.9	265.2	568.3	1,222.8
Zinfandel Drive	Folsom Boulevard	U.S. 50 WB ramps	72.35	95.8	203.5	437.0	940.6
Zinfandel Drive	U.S. 50 EB ramps	White Rock Road	74.21	144.6	306.1	656.9	1,413.8
Zinfandel Drive	White Rock Road	International Drive	70.93	90.6	186.6	397.9	855.2
Sunrise Boulevard	Gold Country Boulevard	Coloma Road	76.78	212.1	453.3	974.7	2,098.8
Sunrise Boulevard	Coloma Road	U.S. 50 WB ramps	77.14	224.0	479.1	1030.5	2,218.9
Sunrise Boulevard	U.S. 50 EB ramps	Folsom Boulevard	75.15	166.3	353.5	759.4	1,634.7
Sunrise Boulevard	Folsom Boulevard	White Rock Road	73.69	134.0	283.0	606.9	1,306.0
Sunrise Boulevard	White Rock Road	Douglas Road	74.69	135.9	290.6	625.1	1,346.0
Sunrise Boulevard	Douglas Road	SR 16	74.86	117.6	253.1	545.0	1,173.9
Sunrise Boulevard	SR 16	Grant Line Road	71.20	67.2	114.4	310.7	669.2
Hazel Avenue	Winding Way	U.S. 50 WB ramps	76.04	166.6	357.2	768.6	1,655.2
Grant Line Road	White Rock Road	Douglas Road	69.64	53.0	113.5	244.3	526.1
Grant Line Road	Douglas Road	SR 16	70.12	57.0	122.2	262.9	566.3
Grant Line Road	SR 16	Sunrise Boulevard	69.34	50.6	108.5	233.3	502.5
U.S. 50	Mather Field Road	Zinfandel Drive	82.10	593.7	1,273.7	2741.2	5,903.4
U.S. 50	Zinfandel Drive	Sunrise Boulevard	81.46	539.0	4,455.4	2486.1	5,353.8
U.S. 50	Sunrise Boulevard	Hazel Avenue	81.02	466.2	1,000.1	2152.3	4,635.2
U.S. 50	Hazel Avenue	Folsom Boulevard	81.00	424.3	911.4	1,961.9	4,225.5

Notes:
CNEL = community equivalent noise level; dBA = A-weighted decibels; EB = eastbound; ft = feet; L_{dn} = day-night average noise level; SR = State Route; U.S. 50 = U.S. Highway 50; WB = westbound
Traffic noise levels were modeled using the FHWA Traffic Noise Prediction Model (FHWA-RD-77-108) based on traffic data obtained from the traffic analysis prepared for the Rio del Oro EIS.
Source: Data provided by EDAW in 2005

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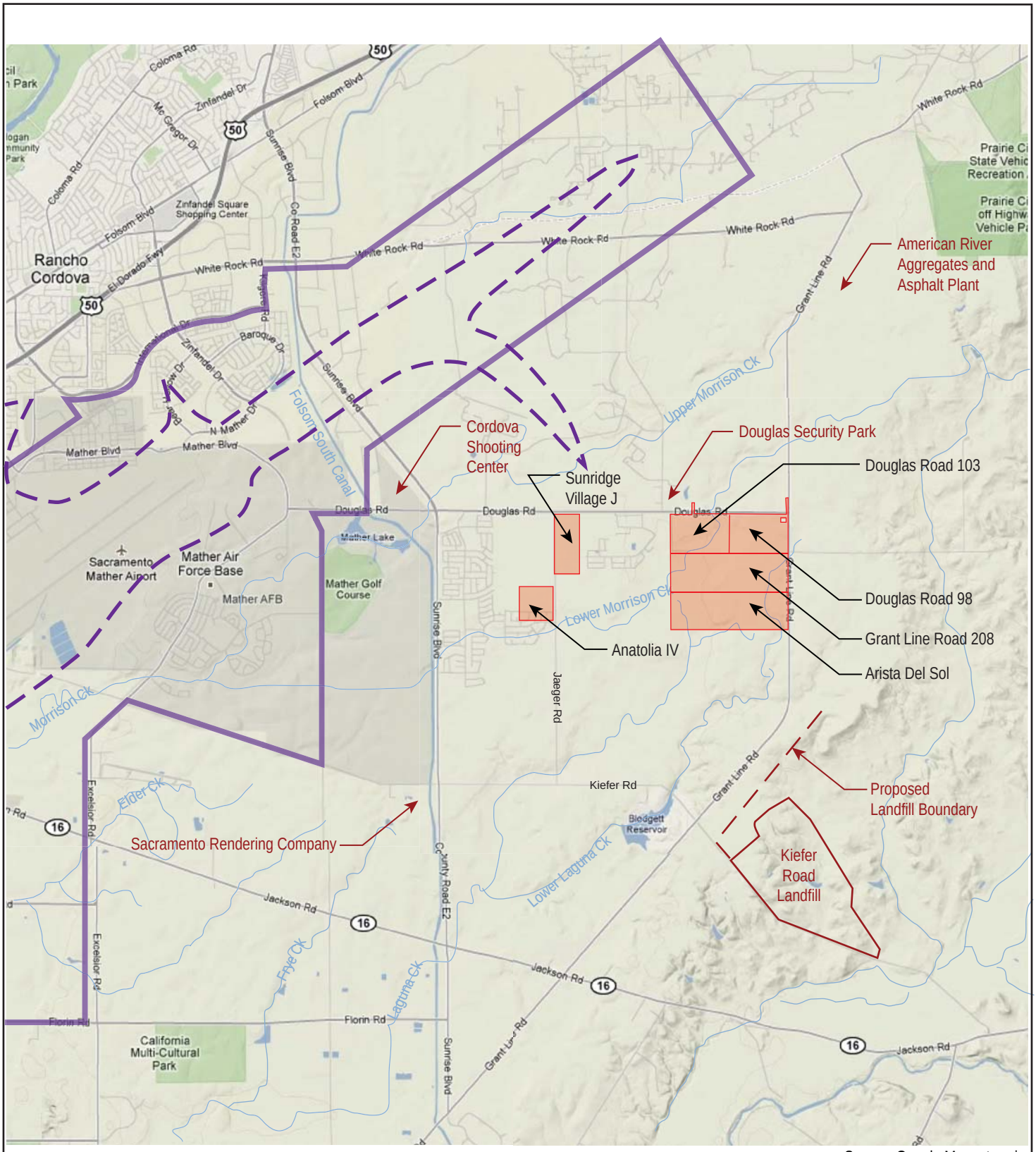

Figure 3.8-2. Noise and Odor Sources Near the Project Site

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3.8.3.4 AMERICAN RIVER AGGREGATES AND ASPHALT PLANT

The American River Aggregates and Asphalt Plant is located northeast of the analysis area, east of Grant Line Road. Operations at the plant include rock crushing, sorting, and movement by loaders, bulldozers, and dump trucks. Noise from the plant operations can be heard at the project site. Heavy trucks also cross Grant Line Road from the plant site to the parcel west of Grant Line Road. Noise from these truck movements is also audible at the project site.

Plant operations may occur 24 hours a day, especially during warmer months. Plant operations are reported to occur from midnight to 1:30 p.m. Noise due to dump truck movements on the plant site was measured at 72 to 79 dBA on the west side of Grant Line Road. This condition could occur at the project site boundary if heavy equipment were to be operated at the western or southern ends of the plant property. Noise from generalized sources at the plant was measured at 56 dBA at the west property boundary of the plant (County of Sacramento, 2001).

3.8.3.5 KIEFER ROAD LANDFILL

Sacramento County operates the Kiefer Road Landfill, which is located east of Grant Line Road at Kiefer Boulevard. Operations at the landfill include movement of heavy equipment and the arrival of approximately 500 garbage trucks each workday, and 275 on the weekend. The landfill operates seven days a week, daytime hours only. Current landfill operations are over 1.7 miles away from the nearest edge of the project site, but future plans involve moving landfill activity closer to Grant Line Road (County of Sacramento, 2001).

Noise is produced by the vehicles and heavy equipment using or operating the landfill. No other significant noise sources are present. At present, during usual operating hours, the noise environment is dominated by trucks on area roadways. As landfill equipment approaches the site boundaries, it can become a significant factor in the noise exposure. The current noise exposure in the vicinity of the landfill is best described by the traffic noise on local roads.

3.8.3.6 SACRAMENTO RENDERING COMPANY

The Sacramento Rendering Company plant is located on Kiefer Boulevard between Eagles Nest Road and Sunrise Boulevard. Noise sources at the plant include grinders, boilers, and scrubbers. The plant operates 24-hours a day on weekdays, and midnight to mid-afternoon on Saturdays. The sound level at the plant boundary is approximately 50 dBA at night at the plant entrance near Kiefer Boulevard (County of Sacramento, 2001).

3.8.3.7 DOUGLAS SECURITY PARK

The Douglas Security Park is located on the north side of Douglas Road. This industrial park currently includes fifteen uses; the two closest to the project site are AIM, Inc., and Precision West.

The AIM facility remanufactures automotive alternators and starters, and operates during the daytime on weekdays. Noise producing machinery is kept inside the shop building and includes drills, lathes, grinders, and a milling machine. The Precision West facility is a metal stamping operation which uses punch presses for tool and die stamping.

Noise levels associated with industrial land uses can vary greatly depending on the activities conducted. Activities involving the use of heavy-duty equipment such as front-end loaders, forklifts, and diesel-

powered trucks are common noise sources typically associated with these land uses. Noise typically associated with industrial operations, including the use of heavy-duty equipment, can reach maximum levels of approximately 85 dBA at 50 feet (USEPA, 1971).

3.8.4 REGULATORY FRAMEWORK

Noise levels are regulated by Federal and state guidelines, as well as the Mather Airport Land Use Compatibility Plan, and the City of Rancho Cordova's noise ordinance. These regulations protect residents from unnecessary noise levels in the area of analysis.

3.8.4.1 FEDERAL PLANS, POLICIES, REGULATIONS, AND LAWS

U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

The guidelines of the U.S. Department of Housing and Urban Development (HUD) for the acceptability of residential land uses are established in "Environmental Criteria and Standards" (24 Code of Federal Regulations (CFR) Part 51). These guidelines identify an exterior noise exposure threshold of 65 dBA L_{dn}. Noise levels of 65 to 75 dBA L_{dn} are considered normally acceptable, provided that appropriate sound attenuation is provided to reduce interior noise levels to within acceptable levels. Noise levels above 75 dBA L_{dn} are considered unacceptable. The goal of the interior noise levels is 45 dBA L_{dn}. These guidelines apply only to new construction supported by HUD grants and are not binding upon local communities.

3.8.4.2 STATE PLANS, POLICIES, REGULATIONS, AND LAWS

CALIFORNIA BUILDING CODE

Title 24 of the California Code of Regulations establishes standards governing interior noise levels that apply to all new multi-family residential units in California. These standards require that acoustical studies be performed before construction begins at building locations where the existing exterior noise levels exceed 60 dBA L_{dn}. Such acoustical studies are required to establish mitigation measures that will limit maximum L_{dn} to 45 dBA in any inhabitable room. Although there are no generally applicable interior noise standards pertinent to all uses, many communities in California have adopted a 45 dBA L_{dn} as an upper limit on interior noise in all residential units.

STATE OF CALIFORNIA GENERAL PLAN GUIDELINES

The State of California General Plan Guidelines, published by the Governor's Office of Planning and Research (2003), provides guidance for the acceptability of projects within specific CNEL/L_{dn} contours. Table 3.8-4 summarizes acceptable and unacceptable community noise exposure limits for various land use categories. Generally, residential uses are considered to be acceptable in areas where exterior noise levels do not exceed 60 dBA CNEL/L_{dn}. Residential uses are normally unacceptable in areas exceeding 70 dBA L_{dn} and conditionally acceptable within 55 to 70 dBA L_{dn}. Schools are normally acceptable in areas up to 70 dBA CNEL and normally unacceptable in areas exceeding 70 dBA CNEL. Commercial uses are normally acceptable in areas up to 70 dBA CNEL. Between 67.5 and 77.5 dBA CNEL, commercial uses are conditionally acceptable, depending on the noise insulation features and the noise reduction requirements. The guidelines also present adjustment factors that may be used to arrive at noise acceptability standards that reflect the noise control goals of the community, the particular community's sensitivity to noise, and the community's assessment of the relative importance of noise pollution.

Table 3.8-4
State of California Noise Compatibility Guidelines by Land Use Category

Land Use Category	Community Noise Exposure (L_{dn} or CNEL, dBA)			
	Normally Acceptable[1]	Conditionally Acceptable[2]	Normally Unacceptable[3]	Clearly Unacceptable[4]
Residential—Low-Density Single-Family, Duplex, Mobile Home	<60	55–70	70–75	75+
Residential—Multiple-Family	<65	60–70	70–75	75+
Transient Lodging, Motel, Hotel	<65	60–70	70–80	80+
School, Library, Church, Hospital, Nursing Home	<70	60–70	70–80	80+
Auditorium, Concert Hall, Amphitheater		<70	65+	
Sports Arenas, Outdoor Spectator Sports		<75	70+	
Playground, Neighborhood Park	<70		67.5–75	72.5+
Golf Courses, Stable, Water Recreation, Cemetery	<75		70–80	80+
Office Building, Business Commercial, and Professional	<70	67.5–77.5	75+	
Industrial, Manufacturing, Utilities, Agriculture	<75	70–80	75+	

Notes:
CNEL = community equivalent noise level; dBA = A-weighted decibels; L_{dn} = day-night average noise level
[1] Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.
[2] New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning, will normally suffice.
[3] New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design. Outdoor areas must be shielded.
[4] New construction or development should generally not be undertaken.
Source: Governor's Office of Planning and Research 2003

3.8.4.3 REGIONAL AND LOCAL PLANS, POLICIES, REGULATIONS, AND ORDINANCES

MATHER 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 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, safety, and height restrictions. The SACOG also works with cities and counties to ensure consistency between local land use plans and CLUPs developed for local airports.

The ALUCP for Mather Airport, formerly called the Mather Airport CLUP, was adopted in May 1997 and includes regional policies for land use compatibility with respect to aircraft noise. The ALUCP for Mather Airport requires that as development occurs in the area near the airport, affected cities and counties should

evaluate the impact of aircraft noise on proposed development. The ALUCP prohibits new residential development within the 65 dBA CNEL noise contours.

The County is currently in the process of developing the Mather Airport Master Plan. The Master Plan will be used to guide airport development over the next 20 years, while attempting to resolve related aviation, environmental, and socioeconomic issues existing in the community. One of the primary issues to be addressed in the plan relates to the exposure of citizens in nearby communities to noise generated by aircraft on approach and departure routes from Mather Airport.

RANCHO CORDOVA GENERAL PLAN

The City of Rancho Cordova was incorporated in July 2003, and the City adopted the Rancho Cordova General Plan in June 2006. The Rancho Cordova General Plan Noise Element identifies noise criteria for various stationary and transportation noise sources. The Noise Element of the Rancho Cordova General Plan supersedes the Noise Element of the County of Sacramento General Plan except where the Rancho Cordova General Plan is silent on an issue (e.g., the Mather Airport Policy Area [MAPA], as described below).

Goals and policies of the Rancho Cordova General Plan relating to noise that Rancho Cordova has found to be applicable to the alternatives. Performance standards for stationary noise sources and maximum allowable noise exposure from transportation noise sources, as specified in the Noise Element of the Rancho Cordova General Plan, are included below as Tables 3.8-5, 3.8-6, and 3.8-7 because they are included in the thresholds for determining the significance of impacts for this analysis.

Table 3.8-5
Performance Standards for Typical Stationary Noise Sources – Rancho Cordova General Plan Noise Element

Noise Level Descriptor	Daytime (7 a.m. - 10 p.m.)	Nighttime (7 a.m. - 10 p.m.)
Hourly L_{eq} dBA	55	45

Notes:
dBA = decibels; L_{eq} = energy-equivalent noise level
Source: City of Rancho Cordova 2005a

Table 3.8-6
Performance Standards for Stationary Noise Sources that are Tonal, Impulsive, Repetitive, or Consist Primarily of Speech or Music – Rancho Cordova General Plan Noise Element

Noise Level Descriptor	Daytime (7 a.m. - 10 p.m.)	Nighttime (7 a.m. - 10 p.m.)
Hourly L_{eq} dBA	50	40

Notes:
dBA = decibels; L_{eq} = energy-equivalent noise level
Source: City of Rancho Cordova 2005a

Table 3.8-7
Maximum Allowable Noise Exposure, Transportation Noise Sources –
Rancho Cordova General Plan Noise Element

Land Use	Outdoor Activity Areas[1]	Interior Space	
	L_{dn}/CNEL, dBA	L_{dn}/CNEL, dBA	L_{eq}, dBA[2]
Residential	60[3]	45	-
Residential subject to noise from railroad tracks, aircraft overflights, or similar noise sources that produce clearly identifiable, discrete noise events (the passing of a single train, as opposed to relatively steady noise sources such as roadway)	60[3]	40[5]	-
Transient Lodging	60[4]	45	-
Hospitals, Nursing Homes	60[3]	45	-
Theaters, Auditorium, Music Halls	-	-	35
Churches, Meeting Hall	60[3]	-	40
Office Buildings	-	-	45
Schools, Libraries, Museums	-	-	45
Playground, Neighborhood Parks	70	-	-

Notes:
CNEL = community equivalent noise level; dBA = A-weighted decibels; L_{dn}= day-night average noise level;
L_{eq} = energy-equivalent noise level

[1] Where the location of outdoor activity areas is unknown, the exterior noise level standard shall be applied to the property line of the receiving land use. Where it is not practical to mitigate exterior noise levels at patio or balconies of apartment complexes, a common area such as a pool or recreation area may be designated as the outdoor activity area.

[2] As determined for a typical worst-case hour during periods of use.

[3] Where it is not possible to reduce noise in outdoor activity areas to 60 dB L_{dn}/CNEL or less using a practical application of the best-available noise reduction measures, an exterior noise level of up to 65 dB L_{dn}/CNEL may be allowed provided that available exterior noise level reduction measures have been implemented and interior noise levels are in compliance with this table.

[4] In the case of hotel/motel facilities or other transient lodging, outdoor activity areas such as pool areas may not be included in the project design. In these cases, only the interior noise level criterion will apply.

[5] The intent of this noise standards is to provide increased protection against sleep disturbance for residences located near railroad tracks.

The Noise Element of the Sacramento County General Plan identifies the MAPA for properties located in the vicinity of Mather Field. The MAPA was approved by the Sacramento County Board of Supervisors in 1998 and is intended to create additional protection beyond the restrictions described in the ALUCP for Mather Airport. In addition to prohibiting new residential development within the 65 dBA CNEL contour, per the ALUCP for Mather Airport, the MAPA prohibits new residential development within the 60 dBA CNEL contour. While Mather Field is not located within the City of Rancho Cordova current boundaries, the policies are incorporated into the Rancho Cordova General Plan for land within Rancho Cordova. As shown in Figure 3.8-2, the project site is located outside the 60 dBA CNEL contour. In addition, new residential development within the MAPA, but outside the 60 dBA CNEL contour, may be approved but will be subject to the following conditions:

- Provision of minimum noise insulation to achieve 45 dB within new residential dwellings, including detached single-family dwellings, with windows closed in any habitable room;
- Notification in the public report prepared by the California Department of Real Estate disclosing to prospective buyers that the parcel is located within the MAPA; and

- An aviation easement prepared by the County Counsel's Office, granted to the Sacramento County, recorded with the County Recorder, and filed with the County Department of Airports. Such an aviation easement shall acknowledge the property location within the MAPA and shall grant the right of flight and unobstructed passage of all aircraft into and out of Mather Airport.

CITY OF RANCHO CORDOVA NOISE ORDINANCE

The Rancho Cordova Noise Ordinance establishes maximum allowable exterior and interior noise levels for affected land uses. The standards from the Rancho Cordova Noise Ordinance are summarized in Table 3.8-8. The ordinance generally limits exterior noise levels (measured at boundary of residential land and agricultural land uses) to a maximum of 55 dBA during any cumulative 30-minute period during the daytime hours (7 a.m. to 10 p.m.), and 50 dBA during any cumulative 30-minute period during the nighttime hours (10 p.m. to 7 a.m.). The ordinance sets somewhat higher noise limits for noise of shorter duration; however, noise shall not exceed 75 dBA during the day and 70 dBA at night. Activities generally considered to be exempt from the noise standards include construction activities (provided that they occur between the daytime hours of 7 a.m. to 6 p.m., Monday through Saturday, and 9 a.m. to 6 p.m. on Sunday), school athletic and entertainment events, activities conducted on public parks and playgrounds, and transportation noise.

Table 3.8-8
City of Rancho Cordova Noise Control Ordinance Standards

Land Use	Period of Measurement	Maximum Acceptable Noise Standards	
		Exterior Noise	Interior Noise
Residential, School, Church, Hospital, Agricultural Land Uses	7 a.m. to 10 p.m.	55 dBA[2]	-
	10 p.m. to 7 a.m.	50 dBA[2]	-
	10 p.m. to 7 a.m.[3]		
Apartment, Condominium, Townhouse, Duplex, or Multidwelling Unit	5 minutes/hour	-	45 dBA
	15 minutes/hour		50 dBA
	Any period of time		55 dBA

Notes:
dBA = A-weighted decibels

[1] The following noise standards, unless otherwise specifically indicated in the City of Rancho Cordova Municipal Code, shall apply to all properties within a designated noise area.

[2] Cumulative duration of intrusive sound: It is unlawful for any person within the city to create any noise that causes the noise level on the affected property, when measured in the designated noise area, to exceed for the duration of time set forth following, the specified exterior noise standards in any one hour by (noise limits shall be reduced by 5 dBA for impulsive or simple tone noise, or noise consisting of speech or music):

A. 30 minutes: +0 dBA
B. 15 minutes: +5 dBA
C. 5 minutes: +10 dBA
D. 1 minute: +15 dBA
E. Level not to be exceeded for any time: +20 dBA

In addition to the above standards, interfering noise at schools, churches, or hospitals, while the same is in use, that is 10 dBA or more greater than the ambient noise level at the building, shall be deemed excessive and unlawful. Residential-use HVAC [heating, ventilation, and air conditioning] system equipment, such as pumps, fans, air conditioners, and cooling towers, shall not exceed 60 dBA at any point at least 1 foot inside the property line of the affected residential or agricultural property line, or 55 dBA when measured in the center of a neighboring patio or at the exterior window of the affected residential unit.

[3] Based on cumulative periods of time during any one hour. Interior noise levels, when measured in the neighboring unit, shall not exceed the specified standards for the corresponding cumulative period of time during any hour.

Source: City of Rancho Cordova Municipal Code, Noise Control Ordinance

3.8.5 ENVIRONMENTAL CONSEQUENCES AND MITIGATION MEASURES

This section describes the potential environmental consequences related to noise from the alternatives. This section describes the impact's thresholds of significance, the methodology used for analysis, and the impact analyses.

3.8.5.1 THRESHOLDS OF SIGNIFICANCE

The thresholds for determining the significance of impacts for this analysis are based on factors taken into account under the National Environmental Policy Act (NEPA) to determine the significance of an action in terms of its context and the intensity of its effects. A noise impact is considered significant if implementation of the alternatives under consideration would do any of the following:

- Result in short-term noise levels during construction that would exceed applicable Rancho Cordova noise standards (Tables 3.8-5, 3.8-6, and 3.8-7) or result in increased levels of annoyance or sleep disruption during noise-sensitive periods of the day (for purposes of this analysis, between 7 p.m. and 7 a.m.);

- Result in long-term stationary-source noise levels that would exceed applicable Rancho Cordova noise standards (Tables 3.8-5 and 3.8-6);

- Result in a noticeable increase in traffic noise levels (i.e., 3 dBA CNEL or greater) or contribute to existing or predicted traffic noise levels that exceed applicable noise standards (Table 3.8-7) at noise-sensitive receptors (persons and land uses);

- Result in predicted noise levels at on-site receptors exceeding applicable noise criteria for land use compatibility (Table 3.8-8); or

- Expose on-site receptors to single-event aircraft noise that would result in potential speech interference or sleep disruption. For purposes of this analysis, speech interference and sleep disruption would be anticipated to occur at noise levels of 60 dBA and 80 dBA SEL, respectively (Caltrans, 2002, FICON, 1992).

The land use compatibility noise criteria in the Rancho Cordova General Plan are listed in Table 3.8-8. Additional noise standards, including the State of California interior noise standards for multifamily residential dwellings (Title 24 of the California Code of Regulations) and the Rancho Cordova noise standards for non-transportation noise sources (Tables 3.8-4, 3.8-5, and 3.8-6), were also taken into consideration.

3.8.5.2 ANALYSIS METHODOLOGY

Noise analyses were conducted in the Rio del Oro Specific Plan Project EIR/EIS (City of Rancho Cordova and USACE, 2006) and in the Sunrise-Douglas Community Plan/Sunridge Specific Plan EIR (County of Sacramento, 2001). The Sunrise-Douglas Community Plan/Sunridge Specific Plan EIR utilized existing information to analyze impacts, while the Rio del Oro Specific Plan Project EIR/EIS utilized the following approach:

Construction-noise and stationary-source noise impacts were calculated based on the distance from source to receptor, assuming an average noise attenuation rate of 6 dBA per doubling of distance. The FHWA Roadway Noise Prediction Model (FHWA-RD-77-108) was used to

calculate traffic noise levels along affected roadways, based on estimates of average daily traffic volumes obtained from the traffic analysis prepared for this project. Increases in traffic noise levels attributable to the proposed project and alternatives under consideration were calculated by comparing the predicted noise levels at 50 feet from the centerline of the near travel lane with and without project-generated traffic, under baseline conditions.

3.8.5.3 IMPACT ANALYSIS

IMPACT3.8-1 – Temporary exposure to construction generated noise. *Construction activities could temporarily exceed applicable standards at nearby noise-sensitive receptors.*

Proposed Project Alternative, Reduced Footprint Alternative, and No Action Alternative- Under all three alternatives, development occurs. The development under the alternatives includes primarily residential land uses, with some commercial, schools, and open space. Construction of on-site public services, utilities, and other infrastructure improvements, such as roadways and bicycle paths, would be needed to support development of the project. Off-site improvements for proposed roadway alignments and utility construction would also be necessary, including new buildings, parking lots, utility relocations and installations, and roadway construction.

Construction noise typically occurs intermittently and varies depending upon the nature or phase of construction (e.g., demolition/land clearing, grading and excavation, erection). Construction noise in any one particular area would be temporary and would include noise from activities such as site preparation, truck hauling of material, pouring of concrete, and use of power tools. Noise would also be generated by construction equipment, including earthmovers, material handlers, and portable generators, and could reach high levels for brief periods. Although noise ranges are generally similar for all construction phases, the grading phase tends to involve the most equipment. The U.S. Environmental Protection Agency (USEPA) has found that the noisiest equipment types operating at construction sites typically range from 88 dBA to 91 dBA L_{max} at 50 feet (Table 3.8-9). Typical operating cycles may involve 2 minutes of full power, followed by 3 or 4 minutes at lower settings. Average noise levels at construction sites typically range from approximately 65 to 89 dBA L_{eq} at 50 feet, depending on the activities performed (USEPA, 1971).

The Rancho Cordova Noise Ordinance restricts construction operations to the hours of 7 a.m.to 6 p.m. Monday through Saturday and 9 a.m. to 6 p.m. on Sundays. Construction activities outside this period would be required to comply with the standards in the noise ordinance and performance standards in the Rancho Cordova General Plan Noise Element. Activities occurring during the more noise-sensitive evening and nighttime hours of 6 p.m. to 7 a.m. Monday through Saturday or 6 p.m. to 9 a.m. on Sunday are of increased concern given the potential for increased levels of annoyance and disruption to residents living south of Douglas Road in the Sunridge Specific Plan area. In addition, implementation a phased development of the site would result in potential disruption of on-site sensitive receptors. It is important to note that currently the only noise-sensitive land uses are the newly developing residential areas south of Douglas Road in the Sunridge Specific Plan area. However, phased development of the Sunridge Specific Plan Properties would result in potential noise conflicts.

Table 3.8-9
Construction Equipment Noise Levels

Type of Equipment	Typical Noise Level (dBA) at 50 feet	
	Without Feasible Noise Control	With Feasible Noise Control [1]
Dozer or Tractor	80	75
Excavator	88	80
Compactor	82	75
Front-end Loader	79	75
Backhoe	85	75
Grader	85	75
Crane	83	75
Generator	78	75
Truck	91	75

Notes:
dBA = A-weighted decibels
[1] Feasible noise control includes the use of intake mufflers, exhaust mufflers, and engine shrouds in accordance with manufacturer's specifications.
Source: EPA 1971

In addition, construction operations occurring during the daytime hours and in the vicinity of schools or other noise-sensitive daytime land uses such as childcare and convalescent care facilities, hospitals, residences, or places of worship may result in increased interior noise levels. Increases in interior daytime noise levels in excess of 45 dBA L_{eq}, particularly within school classrooms, are typically considered to result in a potentially significant noise impact (Caltrans, 2002). Assuming an average exterior-to-interior noise reduction of 20 dBA (with windows closed), exterior construction-generated noise levels in excess of 65 dBA at the façade of a building would be considered to result in potential increases in interior noise levels in excess of 45 dBA L_{eq}. Based on this same assumption, and assuming a maximum construction noise level of 89 dBA L_{eq} and an average attenuation rate of 6 dBA per doubling of distance from the source, construction activities located within approximately 800 feet of daytime noise-sensitive receptors could result in interior noise levels in excess of 45 dBA L_{eq}. Construction-generated noise would therefore be considered to result in a **direct significant** temporary noise impact on nearby noise-sensitive land uses. **No indirect** impacts would occur.

Mitigation Measure 3.8-1: Implement measures to prevent exposure of sensitive receptors to temporary construction-generated noise.

To reduce impacts associated with noise generated during construction activities, the project applicant(s) for all project phases shall conform to the following requirements imposed by City noise ordinances:

- Noise-generating construction operations shall be limited to the hours between 7 a.m. and 7 p.m. Monday through Friday, and between 8 a.m. and 6 p.m. on Saturday and Sunday.

- All construction equipment and equipment staging areas shall be located as far as possible from nearby noise-sensitive land uses.

- All construction equipment shall be properly maintained and equipped with noise-reduction intake and exhaust mufflers and engine shrouds, in accordance with manufacturers' recommendations. Equipment engine shrouds shall be closed during equipment operation.

- All motorized construction equipment shall be shut down when not in use to prevent idling.

The following measures shall be required for exterior activities that involve the use of heavy-duty construction equipment (see Table 3.8-9) located within 800 feet of occupied noise-sensitive daytime land uses (e.g., school classrooms, childcare and convalescent care facilities, inpatient medical facilities, places of worship):

- Individual operations and techniques shall be replaced with quieter procedures (e.g., using welding instead of riveting, mixing concrete off-site instead of on-site).

- Written notification of construction activities shall be provided to all noise-sensitive receptors located within 800 feet of construction activities. Notification shall include anticipated dates and hours during which construction activities are anticipated to occur and contact information, including a daytime telephone number, for the project representative to be contacted in the event that noise levels are deemed excessive. Recommendations to assist noise-sensitive land uses in reducing interior noise levels (e.g., closing windows and doors) shall also be included in the notification.

- To the extent feasible, acoustic barriers (e.g., lead curtains, sound barriers) shall be constructed to reduce construction-generated noise levels at affected noise-sensitive land uses. The barriers shall be designed to obstruct the line of sight between the noise-sensitive land use and on-site construction equipment. When installed properly, acoustic barriers can reduce construction noise levels by approximately 8-10 dBA (USEPA, 1971).

With implementation of Mitigation Measure 3.8-1, construction would be limited to daytime hours, for which associated noise levels are considered exempt from the provisions of the Rancho Cordova Noise Ordinance, and equipment would be properly maintained, sound barriers installed, and setbacks established, resulting in levels below the City's noise standards. Therefore, implementation of this mitigation measure would reduce potentially significant impacts from temporary construction noise under all three alternatives to a **less-than-significant** level.

IMPACT3.8-2 – Potential exposure to stationary source noise generated by on-site land uses. *Implementation could result in potential exposure of sensitive receptors to noise levels from on-site stationary sources in excess of applicable standards.*

Proposed Project Alternative, Reduced Footprint Alternative and No Action Alternative - Under all three alternatives, development occurs. Development will feature primarily residential land uses, with some commercial, schools, and parks. The sources and levels of noise typically associated with these land uses are discussed separately below.

RESIDENTIAL LAND USES

Occupation of the proposed residential dwellings would expose nearby residences to minor increases in ambient noise levels. Noise typically associated with such development includes amplified music, adults' and children's voices, and noise generated by various recreational activities and lawn maintenance equipment. Activities associated with these land uses would result in only minor and intermittent temporary increases in ambient noise levels, as perceived at the closest residential receptors, primarily during the day and evening hours, and less frequently at night. Stationary sources of noise associated with residential land uses are typically limited to the operation of exterior central air conditioning units. Residential-use central air conditioning units typically average approximately 60 dBA or less at 3 feet

from the source (USEPA, 1971). Depending on the distance between residential dwellings, noise levels associated with air conditioning units located within side-yard areas of residential land uses could potentially exceed the Rancho Cordova noise standards. As a result, increased noise levels associated with the proposed residential land uses are considered a **significant, direct** impact. **No indirect** impacts would result.

COMMERCIAL LAND USES

As discussed previously, the project includes plans for the development of a small amount of commercial land uses. Potential sources of noise associated with these types of land uses can vary substantially. Noise associated with office and public land uses might be limited to occasional parking lot-related noise (e.g., opening and closing of doors, and people talking); however, commercial land uses may include additional noise sources such as the use of forklifts for loading and unloading of materials, as well as the operation of hydraulic lifts, pneumatic tools, and air compressors at automotive repair facilities. Early-morning truck deliveries may also be a source of elevated noise levels at nearby sensitive receptors. Noise from such equipment and activities can reach intermittent levels of up to 90 dBA at 50 feet from the source (USEPA, 1971). In addition, mechanical equipment (e.g., heating, ventilation, and air conditioning [HVAC] equipment) housed on the exterior of buildings is also a potential stationary source of noise, especially if these pieces of equipment are not properly enclosed. Based on this noise level, and assuming an attenuation rate of 6 dBA per doubling of distance from the source, areas within approximately 2,500 feet could experience noise levels in excess of 55 dBA.

Operational noise levels associated with the proposed commercial and public land uses could potentially exceed the Rancho Cordova noise standards at nearby existing and future noise-sensitive receptors. In addition, increases in single-event noise levels, such as backup alarms from material delivery trucks, occurring during the more noise-sensitive evening and nighttime hours could result in increased levels of disturbance and sleep disruption to occupants of nearby residential dwellings. As a result, increased noise levels associated with the proposed commercial land uses are considered a **significant**, **direct** impact. **No indirect impacts** would result.

SCHOOLS AND NEIGHBORHOOD PARKS

The project includes development of school-related uses and neighborhood parks. Noise generating activities occurring at such facilities would be controlled by the school and the recreation and park districts, and would depend on facility type. Daytime noise typically associated with schools and neighborhood parks typically includes intermittent noise such as adults' and children's voices, opening and closing of vehicle doors in parking lots, and use of landscape maintenance equipment. School uses may also result in mechanical noise associated with building ventilation systems. Maximum intermittent noise levels commonly associated with parking lots can reach levels of 70 dBA at 500 feet from the occasional sounding of car alarms and amplification of music. Noise levels associated with landscape maintenance activities, including the use of large gasoline-powered mowers and leaf blowers, can range from approximately 66 to 72 dBA at 25 feet. Mechanical noise associated with operation of ventilation equipment required to service school facilities can result in average noise levels of 55 dBA at approximately 175 feet from the source.

Recreational facilities at neighborhood parks, middle schools, and high schools can generate additional noise extending into the evening and nighttime hours during competitive sporting events (e.g., soccer games, football games, and track and field events). Noise sources commonly associated with these types of events include elevated voices from crowds, exterior public-address systems, and musical instruments. Based on noise measurements conducted for similar projects, noise levels typically associated with recreational events (such as soccer games), including noise from spectators and players, can exceed 50

dBA L_{eq} within 800 feet of the event. If an amplified speaker system is used during sporting events, additional increases in ambient noise levels could occur. Activities occurring during the more noise-sensitive evening and nighttime hours may result in increased levels of annoyance and sleep disruption for occupants of nearby residential dwellings. As a result, increased noise levels associated with the proposed schools and neighborhood parks are considered a **significant**, **direct** impact. **No indirect** impacts would result.

Mitigation Measure 3.8-2: Implement measures to reduce potential exposure of sensitive receptors to stationary source–generated noise.

To reduce potential long-term exposure of sensitive receptors to noise generated by project-related stationary noise sources from private activities, Rancho Cordova will evaluate individual facilities, subdivisions, and other project elements for compliance with the City Noise Ordinance and policies contained in the Rancho Cordova General Plan. All project elements shall comply with City noise standards. The project applicant(s) for all project phases will implement the following measures to assure maximum reduction of project interior and exterior noise levels from operational activities.

- The proposed land uses will be designed so that on-site mechanical equipment (e.g., HVAC units, compressors, and generators) and area-source operations (e.g., loading docks, parking lots, and recreational-use areas) are located as far as possible from or shielded from nearby noise-sensitive land uses.

- Residential air conditioning units will be located a minimum of 10 feet from adjacent residential dwellings, including outdoor entertainment and relaxation areas, or shall be shielded to reduce operational noise levels at adjacent dwellings or designed to meet City noise standards. Shielding may include the use of fences or partial equipment enclosures. To be effective, fences or barriers need to be continuous or solid, with very few gaps, and must block the line of sight to windows of neighboring dwellings. Achieved noise reductions from fences or barriers can vary, but typically range from approximately 5 to 10 dBA, depending on construction characteristics, height, and location.

- To the extent feasible, residential land uses located within 2,500 feet and within the direct line of sight of major noise-generating commercial land uses (e.g., loading docks, and equipment/vehicle storage and repair facilities) will be shielded from the line of sight of these facilities by construction of a sound barrier. To be effective, fences or sound barriers need to be continuous or solid, with very few gaps, and must block the line of sight to windows of neighboring dwellings. Achieved noise reductions from fences or barriers can vary, but typically range from approximately 5 to 10 dBA, depending on construction characteristics, height, and location. The developer will obtain the services of a professional acoustician to determine the design and location of noise barriers to be constructed.

- Dual-pane, noise-rated windows; mechanical air systems; exterior wall insulation; and other noise-reducing building materials will be used.

In addition, the City of Rancho Cordova will seek to reduce potential long-term exposure of sensitive receptors to noise generated by project-related stationary noise sources from public activities on school grounds, in neighborhood and community parks, and in open-space areas. Specifically, the City will encourage the controlling agencies (i.e., schools and park and recreation districts) to implement measures to reduce project interior and exterior noise levels to within acceptable levels, including but not limited to the following:

- On-site landscape maintenance equipment will be equipped with properly operating exhaust mufflers and engine shrouds, in accordance with manufacturers' specifications.

- For maintenance areas located within 500 feet of noise-sensitive land uses, the operation of on-site landscape maintenance equipment will be limited to the least noise-sensitive periods of the day, between the hours of 7 a.m. and 7 p.m.

- Outdoor use of amplified sound systems within 500 feet of noise-sensitive land uses will be permitted only between 7 a.m. and 10 p.m. Sunday through Thursday, and between 7 a.m. and 11 p.m. on Friday and Saturday.

Potential exposure to stationary source noise generated by on-site land uses would be reduced to a **less than significant impact with mitigation**.

IMPACT3.8-3 – Potential exposure to off-site stationary source noise. *Implementation could result in exposure of proposed sensitive receptors to noise levels from off-site stationary sources in excess of applicable standards.*

Proposed Project Alternative, Reduced Footprint Alternative and No Action Alternative - Under all three alternatives, development occurs, and the developed areas would be affected by nearby stationary noise sources, including industrial and recreational land uses. Noise levels associated with these land uses and potential impacts on on-site receptors, are discussed separately below.

INDUSTRIAL LAND USES

Nearby industrial land uses near the project include: Security Park, Kiefer Road Landfill, the Sacramento Rendering Company, and American River Aggregates. The nearest industrial use is the operations at Security Park, which is 500 feet away from the nearest portion of the project site. Hours of operation for these land uses vary, but are generally limited to daytime hours. Locations of these land uses are indicated in Figure 3.8-2.

Noise levels associated with industrial land uses can vary greatly depending on the activities conducted. Activities involving the use of heavy-duty equipment such as front-end loaders, forklifts, and diesel-powered trucks are common noise sources typically associated with these land uses. Noise from industrial activities, including the use of pneumatic tools and heavy-duty motorized equipment and vehicles, can range from approximately 65 to 85 dBA at 50 feet (USEPA, 1971). Assuming a maximum noise level of 85 dBA at 50 feet, areas located within approximately 1,500 feet of industrial land uses may be exposed to noise levels in excess of the Rancho Cordova daytime noise standard of 55 dBA, depending on the activities conducted.

The project proposes development of residential dwellings over 500 feet from existing industrial land uses located along the northern boundary of the project site. As a result, predicted noise levels from existing industrial activities could potentially exceed the local regulatory noise standards for these receptors. In addition, activities occurring during the more noise-sensitive evening and nighttime hours, such as loading-dock operations, may result in increased levels of annoyance and sleep disruption to occupants of nearby planned residential dwellings. Noise levels associated with existing industrial development adjacent to proposed residential housing are considered a **significant, direct** impact. **No indirect** impacts would result.

CORDOVA SHOOTING CENTER

The Cordova Shooting Center is located at 11551 Douglas Road, at the northwest corner of the Douglas Road/Sunrise Boulevard intersection, over one mile from the nearest portion of the project site. The shooting center includes outdoor rifle, pistol, skeet, trap, and sporting clay ranges. Hours of operation vary by season, but are generally limited to the daytime hours of 10 a.m. to 8 p.m. on weekdays and 9 a.m.to 6 p.m. on weekends. Shooting events, such as skeet tournaments, occasionally occur during the evening hours.

Noise levels generated by weapon fire are dependent on the weapon used, local shielding, and atmospheric conditions. Based on measurements conducted at the Cordova Shooting Center, noise levels from weapon fire ranged from approximately 97 to 112 dBA per round at 50 feet. Based on these noise levels, predicted maximum noise levels of 70 dBA could occur at a distance of one-half mile from this facility, depending on local shielding and atmospheric conditions (County of Sacramento, 1993).

Intermittent noise generated by daytime weapon fire at the firing range, though discernible at times, would be largely masked by the higher vehicle traffic noise on nearby roadways (i.e., Sunrise Boulevard and Douglas Road), therefore, noise levels associated with the existing Cordova Shooting Center in the vicinity of proposed residential housing are considered to have **no significant, direct** impact. **No indirect** impacts would result.

In summary, noise levels generated by off-site stationary sources could result in noise levels at proposed receptors that would exceed the Rancho Cordova noise standards. This is considered a **significant**, **direct** impact. **No indirect** impacts would occur.

Mitigation Measure 3.8-3: Implement mitigation measure 3.8-2.

Compliance with the Rancho Cordova Noise Ordinance and implementation of any additional mitigation measures for the control of stationary-source noise, such as those identified above in Mitigation Measure 3.8-2, would reduce stationary-source noise impacts and would reduce interior noise levels to a less-than-significant level. However, exterior noise levels could still exceed applicable land-use compatibility noise standards. No additional feasible mitigation measures are available to further reduce exterior noise levels; therefore, this impact remains **significant and unavoidable.**

IMPACT3.8-4 – Project-generated increases in traffic noise levels on area roadways. *Implementation would introduce new traffic to area roadways, resulting in an associated increase in traffic noise levels.*

Proposed Project Alternative, Reduced Footprint Alternative and No Action Alternative – Under all three alternatives, development occurs. Under the Proposed Project Alternative, 3,258 single family homes are built, under the Reduced Footprint Alternative, 2,511 single family homes are built, and under the No Action Alternative, 2,059 homes are built. The increase in housing results in a direct correlation of increased daily trips. The increase in daily traffic volumes resulting from implementation of any of the alternatives would generate increased noise levels along nearby roadways.

Analysis of traffic impacts was performed as part of the Rio del Oro Specific Plan Project EIR/EIS (City of Rancho Cordova, USACE, EDAW 2006), utilizing the Federal Highway Administration Traffic Noise Prediction Mode (VHWA-RD-77-108), based on existing traffic data. This model is in common use and is considered adequate for the purpose of this EIS. The model reported that noise levels would increase by 3 dBA only if traffic volumes doubled, and the 11,601 homes and their associated daily trips would not double traffic volumes; the traffic would not be sufficient to increase noise to perceptible noise levels. Housing built under the three alternatives would be less than one third of the housing developed as part of the Rio del Oro Specific Plan Project, and corresponding traffic noise would also be less than the noise generated by traffic from the homes developed by the Rio del Oro Specific Plan Project. Therefore, the

direct impact is considered **less than significant**, and **no indirect** impacts would occur.

Mitigation Measure 3.8-4: No mitigation measures are required.

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3.9 UTILITIES AND PUBLIC SERVICES

This section describes the affected environment, environmental consequences, and mitigation measures with respect to utilities and public services. Utilities and public services include: energy services, fire protection, law enforcement, schools, parks and recreation, telephone, television, public transit, library, solid waste services, and wastewater services.

Information presented for utilities and public services is based upon the Sunrise-Douglas Community Plan/Sunridge Specific Plan Final Environmental Impact Report (County of Sacramento, 2001). The information was updated as necessary, to reflect current conditions, both physical and regulatory.

3.9.1 AREA OF ANALYSIS

The area of analysis is located in the Sunridge Specific Plan Area, within the Sunrise-Douglas Community Plan, in the incorporated City of Rancho Cordova. A framework for urban public facilities and services has been planned for the Sunrise-Douglas Community Plan area; however, not all facilities and services are currently in place.

3.9.2 AFFECTED ENVIRONMENT

The following is a discussion of the basic public services needed and provided at the project site and the agencies responsible for those services.

3.9.2.1 ENERGY SERVICES

Electricity within the area is provided by the Sacramento Municipal Utility District (SMUD). SMUD owns and maintains the following:

- 69 kilovolt (kV) and 12kV along the east side of Sunrise Boulevard;
- 69kV along the Jackson Highway;
- 12kV along Douglas Road to Jaeger Road and south along Jaeger Road; and
- Overhead electric service lines along the existing roadways through the project site, providing electrical service to the existing residences and wells.

Two 230kV transmission lines traverse the area near the project sites, northeast to southwest, in a 350-foot wide corridor. One line is owned by SMUD, and the other is owned by Pacific Gas and Electric Company (PG&E). Land use is restricted within the easement beneath the tower line including a prohibition against buildings and structures, swimming pools, wells, or other bodies of water within the boundaries, and height limitations for lighting and landscaping. Clear and unrestricted access is required for maintenance along the entire easement. One substation with capacity for approximately 400 residential units was available in 2001 (County of Sacramento, 2001).

Throughout the year, SMUD buys and sells energy and capacity on a short-term basis to meet load requirements and reduce costs. SMUD is currently operating Phase I of the Cosumnes Power Plant, which is part of SMUD's long-range power supply plan to meet the service area energy needs. The Cosumnes Power Plant is a natural gas-fired electrical generating facility and would provide SMUD with

a total of 500 megawatt (MW) additional capacity. The Cosumnes Power Plant Phase I came on line in 2006 and provides enough power to meet the annual needs of 450,000 single-family homes.

3.9.2.2 NATURAL GAS

Natural gas service within the area is provided by PG&E. PG&E is the natural gas service provider for the City of Rancho Cordova. Natural gas is delivered to Rancho Cordova through portions of PG&E's 43,000-mile natural-gas pipeline system. The existing facilities in the city consist of 4.5- to 16-inch conveyance pipelines. Existing conveyance lines at the project sites run underground from the Sunrise Boulevard/White Rock Road intersection and follow White Rock Road east for approximately 2.3 miles. All construction and maintenance activities for natural gas facilities are the responsibility of PG&E.

PG&E owns and operates an 8-inch feeder main along Sunrise Boulevard near the project sites. This feeder main is currently operating at 60 pounds per square inch (psi), but is intended to be a future high pressure main. In the vicinity, PG&E also owns and operates the following 6-inch diameter gas mains:

- North of the project sites on Sunrise Boulevard;
- Along Kiefer Boulevard west of Sunrise Boulevard; and
- Along White Rock Road north of the project sites.

PG&E has indicated that a new pressure regulation station would be required on the existing 8-inch diameter feeder main near the intersection of Sunrise Boulevard and Douglas Road. The existing 8-inch main would be upgraded from the current 60 psi pressure to a proposed operating pressure of 150 psi. Six-inch diameter transmission mains would extend from the new regulation station along Douglas Road and then along the major north/south roadways (Jaeger Road and Americanos Boulevard). Smaller diameter feeder mains would extend off the 6-inch transmission mains into individual development projects.

3.9.2.3 FIRE PROTECTION

The Sacramento Metropolitan Fire District would provide fire protection and emergency medical response to development within the project sites. The fire district operates 42 stations in an area servicing 640,000 people in a 416 square mile service area. The nearest existing fire stations to the project sites are Station 68 located at 4381 Anatolia Drive and Station 66 located at 3180 Kilgore Road. Station 68 is approximately 2 miles from the eastern boundary of the analysis area and Station 66 is approximately 9 miles from the northern boundary (Sacramento Metropolitan Fire District, 2010).

The Insurance Services Office (ISO) assigns a fire insurance protection classification rating to fire districts based on water supply, communications, staffing, and equipment level. ISO ratings are intended to describe a district's ability to defend against a major fire. The most common usage of the ISO rating is for setting fire insurance premiums. The ratings are set on a scale of 1 to 10, with Class 1 indicating the highest protection level and Class 10 indicating no fire protection. Classes 2 through 9 reflect varying degrees of intermediate protection. The current ISO rating for the Sacramento Metropolitan Fire District are Class 3 and Class 8 for areas with and without fire hydrants, respectively (Sacramento Metropolitan Fire District, 2004).

3.9.2.4 LAW ENFORCEMENT

The Rancho Cordova Police Department provides law enforcement services and police protection to the City, including the project site. These services include response to calls and incidents, investigations, surveillance, and routine patrolling.

Demand for services currently exceeds the supply of resources. Demand results from population growth, increased rate of crime, and services mandated by the state and the courts. Supply of resources is linked primarily to the City General Fund. Growing demand and a relatively slower growing resource base has led to an inability to maintain historic levels of service. While population and the number and severity of crimes have increased substantially over the past 10 years, the number of patrol officers has increased less than 1% (two officers).

Reallocating resources has led to a reduction in local services. The Department no longer provides patrol and investigative service in response to all citizen complaints. Case acceptance criteria are used to screen citizen calls, set priorities for response, and determine how staff would be assigned. Felonies take priority over misdemeanors, and crimes against persons take priority over property crimes. Visits on residential burglaries, noise disturbances, vandalism, vehicle thefts, vehicle burglaries, and preventive patrol are no longer provided.

The design of a development can influence the demand for services through the presence or absence of internal security measures. Project circulation design can also affect the Department's ability to provide timely emergency response. The Department has identified standard design recommendations for residential developments.

3.9.2.5 SCHOOLS

The analysis area is located within the Elk Grove Unified School District, which provides public elementary through high school education (Figure 3.9-1). The Elk Grove Unified School District has more than 62,000 students that attend 64 schools. Although the school district boundaries are periodically adjusted as a new school is built or the population in a particular area changes, the analysis area is serviced by the Cosumnes River Elementary School, Katherine L. Albiani Middle School, and Pleasant Grove High School. Proposed school sites must conform to school district standards for location and configuration. The district has adopted site location requirements relating to site configuration, power lines, noise, airports, access, environmental constraints, adjacent land use, and utilities.

3.9.2.6 PARKS AND RECREATION

FOLSOM LAKE

The Folsom Lake State Recreation Area (SRA) is located approximately 10 miles north of the project sites. The SRA serves the greater Sacramento area for summer recreation in the form of boating, camping, hiking, biking, and other outdoor recreation activities. The California Department of Parks and Recreation manages the Folsom Lake SRA, which includes Folsom Lake and the surrounding facilities. The lake features approximately 75 miles of shoreline and 80 miles of trails that provide opportunities for hiking, horseback riding, nature studies, camping, and picnicking. There are seven major recreation areas with facilities located around the lake. The Folsom Lake SRA receives 2 to 3 million visitor days per year, mostly in the spring and summer. Most of these activities are water-related. The park also includes Lake Natoma, downstream from Folsom Lake, which is popular for crew races, sailing, kayaking and other aquatic sports.

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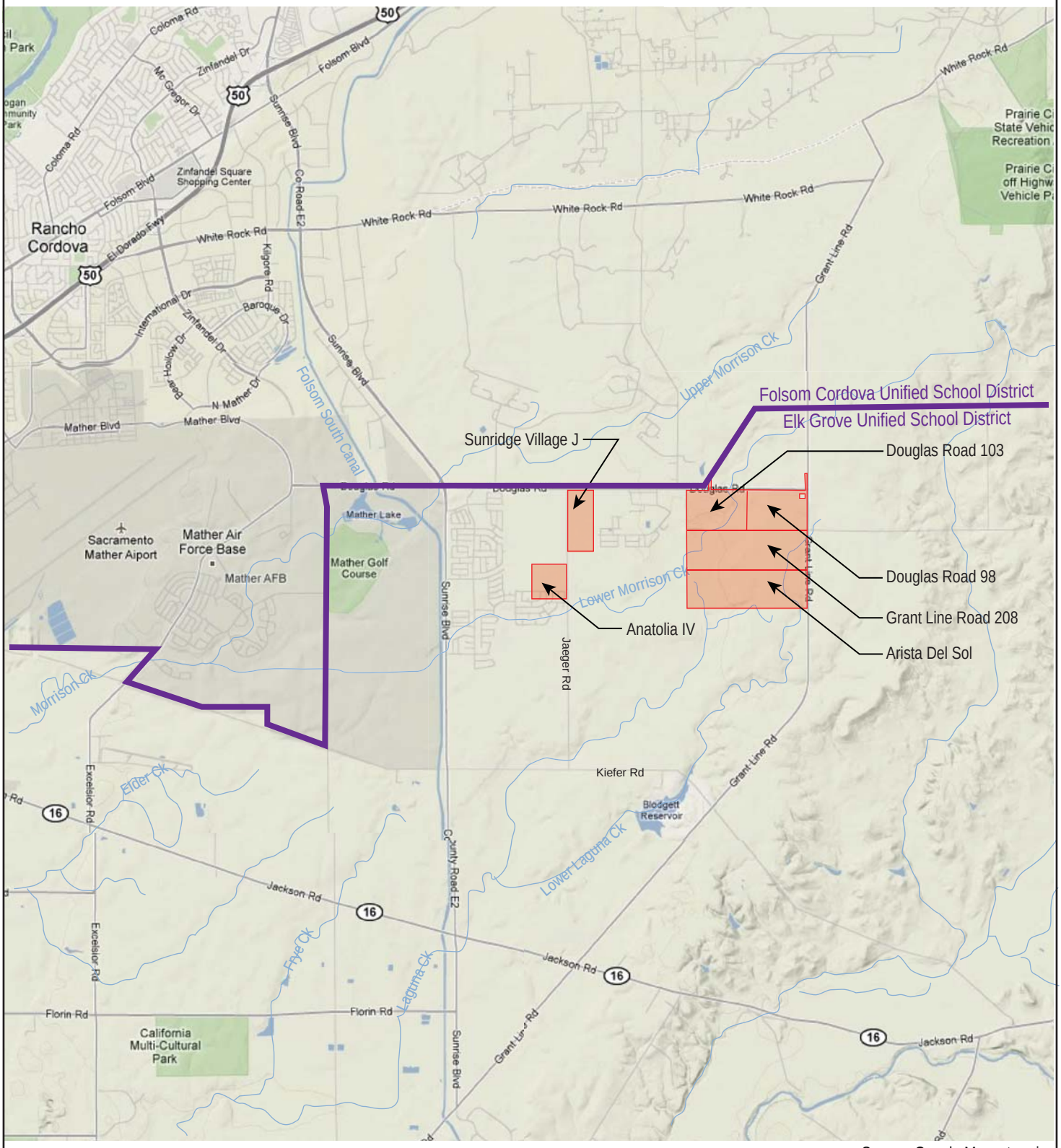

Source: Google Maps, terrain

Figure 3.9-1. School District Boundaries Near the Project Site

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A 32-mile bicycle path connects Folsom Lake with several Sacramento County parks situated along the American River, ending at the Sacramento River to the west. Beginning at Beal's Point at Folsom Lake, the trail goes by the southwest corner of the lake, the west shore of Lake Natoma, parallels the American River, and ends in Discovery Park in Old Sacramento, where it meets the Sacramento River bike trail.

SACRAMENTO-SAN JOAQUIN DELTA

The Sacramento–San Joaquin Delta (Delta) has nearly 1,000 miles of navigable channels. As such, recreation opportunities are generally water oriented, consisting primarily of boating and fishing. Other common activities include water skiing, wakeboarding, sailing, operating personal watercraft (e.g., jet skis), houseboating, kayaking, swimming, boat camping, and windsurfing. Land-based recreational activities in the Delta include hunting, camping, picnicking, walking, bicycling, viewing and photographing wildlife, sightseeing, and attending festivals and special events.

PRAIRIE CITY STATE VEHICULAR RECREATION AREA

The Prairie City State Vehicular Recreation Area (SVRA), located on White Rock Road approximately 3 miles northeast of the project sites, is a year-round off-highway vehicle park. Along with 836 acres of varying terrain and trails for motorcycles, all-terrain vehicles, and four-wheel-drive vehicles, the Prairie City SVRA includes a motocross track, a quarter midget track, a 4x4 vehicle area, a motorcycle/all-terrain vehicle area, several practice tracks, a go-kart track, and several staging areas that include picnic facilities. The Prairie City SVRA is operated by the Off-Highway Vehicle Division of the California Department of Parks and Recreation.

AMERICAN RIVER PARKWAY

The American River Parkway is an open space greenbelt which extends approximately 29 miles from Folsom Lake to the Sacramento River. The American River is the central focus of the Parkway. The Parkway's trail system, which has been designated a "National Recreation Trail," includes the 32-mile-long multiuse (pedestrian, equestrian, and bicycle) Jedediah Smith Memorial Trail, which parallels the American River from Folsom to downtown Sacramento. There are several points of entry to this recreation area from neighborhoods and county and city parks for pedestrians, cyclists, equestrians, automobiles, and boaters.

The Parkway abuts the City's northern boundary with miles of river frontage, where it is accessible at numerous locations in Rancho Cordova, including Hagan Park. Within the city, the Parkway also includes River Bend Park (formerly C.M. Goethe Park), consisting of 444 acres, providing hiking, bicycling, and horseback riding trails as well as picnic areas.

CORDOVA RECREATION AND PARK DISTRICT

Rancho Cordova has a variety of open space, parks, and trails that are managed by an independent agency, the Cordova Recreation and Park District (CRPD). Providing parks is a cooperative effort, combining the City's land use authority and CRPD's efforts to build and operate park and recreation facilities. The City coordinates with CRPD in its land use authority to ensure that parkland dedication requirements are met and that parks are provided in accordance with the CRPD Master Plan and City policies on parks and open space.

The Cordova Recreation and Park District would own and operate any neighborhood and community-scale parks within the analysis area. The district acquires and improves parks through land dedication and/or in-lieu fees authorized under the Subdivision Map Act (the Quimby Act). The dedication of

land for parks may also be satisfied by payment of an "in-lieu" fee equal to the value of the land that would otherwise have been dedicated.

CRPD is located in the east-central portion of Sacramento County, south of the American River, and is bisected by U.S. Highway 50. The CRPD administers a total of 438 acres, which includes 27 neighborhood parks and six community parks that offer swimming pools, picnic areas, basketball courts, soccer fields, and playgrounds. Other amenities include four community swimming pools, the Cordova Senior Center, the Mather Sports Complex, the Cordova Public Shooting Center, and the Cordova Golf Course. The 75-acre Hagan Park near Cordova High School has several swimming pools, a community center, a petting barn, and a miniature steam railroad.

3.9.2.7 TELEPHONE AND CABLE TELEVISION

The American Telephone and Telegraph Company (AT&T) would provide telephone service to the project sites. Pacific Bell owns an existing fiber optic cable on Sunrise Boulevard near the intersection with International Drive, north of the project sites.

AT&T is planning to extend the fiber optic cable south along Sunrise Boulevard to the intersection with Douglas Road. Fiber optic service lines would be extended to controlled environment vaults (CEVs) located in exclusive AT&T easements measuring 20 feet by 30 feet. From the CEV, smaller backbone cables would be extended along the major roadways to service cabinets that would accommodate up to 5,000 individual phone lines (County of Sacramento, 2001). The location of these service cabinets would be determined by AT&T at the time of tentative map approval. Under current practices, copper phone lines would then be extended from the service cabinets within new developments.

Sacramento Cable would provide cable television service within the project sites. Sacramento Cable owns and operated a hub facility, including fiber optic and microwave feeds, near the intersection of Sunrise Boulevard and Folsom Boulevard.

New fiber optic cables would be extended from the existing hub facility along Sunrise Boulevard and then along the major roads within the project sites. Coaxial cables would extend from the optic lines into new developments within the public utility easements at the back of walks.

3.9.2.8 PUBLIC TRANSIT

There is no direct public transit service to the analysis area at this time. However, there is light rail transit and bus feeder service near the area. This service is provided by Regional Transit (RT) and includes standard and peak hour express service along Folsom Boulevard and US Highway 50.

Light rail transit currently extends from downtown Sacramento to two terminus points:

- Watt Avenue/I-80
- Folsom

The project sites are closest to the Sunrise station on the Folsom line. This station provides light rail service to the downtown area every 15 minutes during peak hours, and every 30 minutes during off-peak hours.

The closest bus transit routes to the project sites are located along Folsom Boulevard and Highway 50, and along White Rock Road west of Sunrise Boulevard. The RT 20-year Master Plan for transit facilities

(Figure 3.9-2) identifies planned feeder bus service for Sunrise Boulevard. This bus line is intended to support light rail along the Folsom Boulevard corridor.

3.9.2.9 LIBRARY SERVICE

The analysis area is served by the Sacramento Public Library Authority. The Sacramento Public Library Authority is the fourth largest library system in California serving the public in the City and County of Sacramento and the cities of Citrus Heights, Elk Grove, Galt, Isleton and Rancho Cordova. The Sacramento Public Library operates 27 libraries, which includes a Central Library in downtown Sacramento, has over 300 staff members, a collection of 2 million volumes, and a budget of $35,000,000. Residents in the analysis area currently have access to library services at the Rancho Cordova Branch Library located near Folsom Boulevard and Bradshaw Road, and at the Elk Grove Branch Library located at Elk Grove Boulevard and Elk Grove-Florin Road.

3.9.2.10 SOLID WASTE SERVICE

Refuse collection and solid waste disposal service within the analysis area would be provided by the Waste Management and Recycling Division of the Sacramento County Public Works Agency. Solid waste would be transported to the Kiefer Landfill, a county-owned and operated facility located southeast of the intersection of Grant Line Road and Kiefer Boulevard. The Kiefer Boulevard facility is the primary landfill for all solid waste generated within the unincorporated areas of the County and the City of Rancho Cordova. The landfill is regulated by the Department of Resources Recycling and Recovery (CalRecycle) and the County of Sacramento Environmental Management Department. The landfill has a total capacity of 117 million cubic yards (58 million tons) and can accept a maximum of 10,815 tons per day of solid waste (CalRecycle, 2010).

The average per-capita solid-waste disposal rate for Sacramento County is 0.36 ton per resident per year. Business waste disposal rates calculated by the CalRecycle range from 0.3 ton per year for general-merchandise stores to 3.1 tons per year for restaurants (City of Rancho Cordova and USACE, 2006b). Currently, the landfill is operating below permitted capacity and is projected to cease operation in year 2064.

This 650 acre landfill is a Class II-2 facility, a classification that cannot accept waste that consists of chemically and biologically decomposable material that would significantly affect groundwater quality. No hazardous materials are allowed in this facility. Solid waste service would be funded through user fees.

3.9.2.11 WASTEWATER

The Sacramento Regional County Sanitation District (SRCSD) and County Sanitation District No. 1 (CSD-1) provide public sewer service to the urbanized portion of Sacramento County including the City of Rancho Cordova. All of the project sites are within the general plan urban service boundary and the general plan urban policy area, and therefore is included within the sanitation districts' spheres of influence. All of the project sites have also been annexed into the sanitation districts' service boundaries.

The SRCSD's facilities include the Sacramento Regional Wastewater Treatment Plant, and interceptors. CSD-1 provides the local sewage collection and transport from its facilities to the regional sewage transmission, treatment, and disposal facilities operated by SRCSD. Treated effluent is ultimately discharged to the Sacramento River at the SRCSD's treatment plant, located near Freeport.

SRCSD and CSD-1 classify sewer pipelines carrying 10 million gallons per day or more as "interceptors." Sewer pipes carrying between 1 and 10 million gallons per day are known as "trunks."

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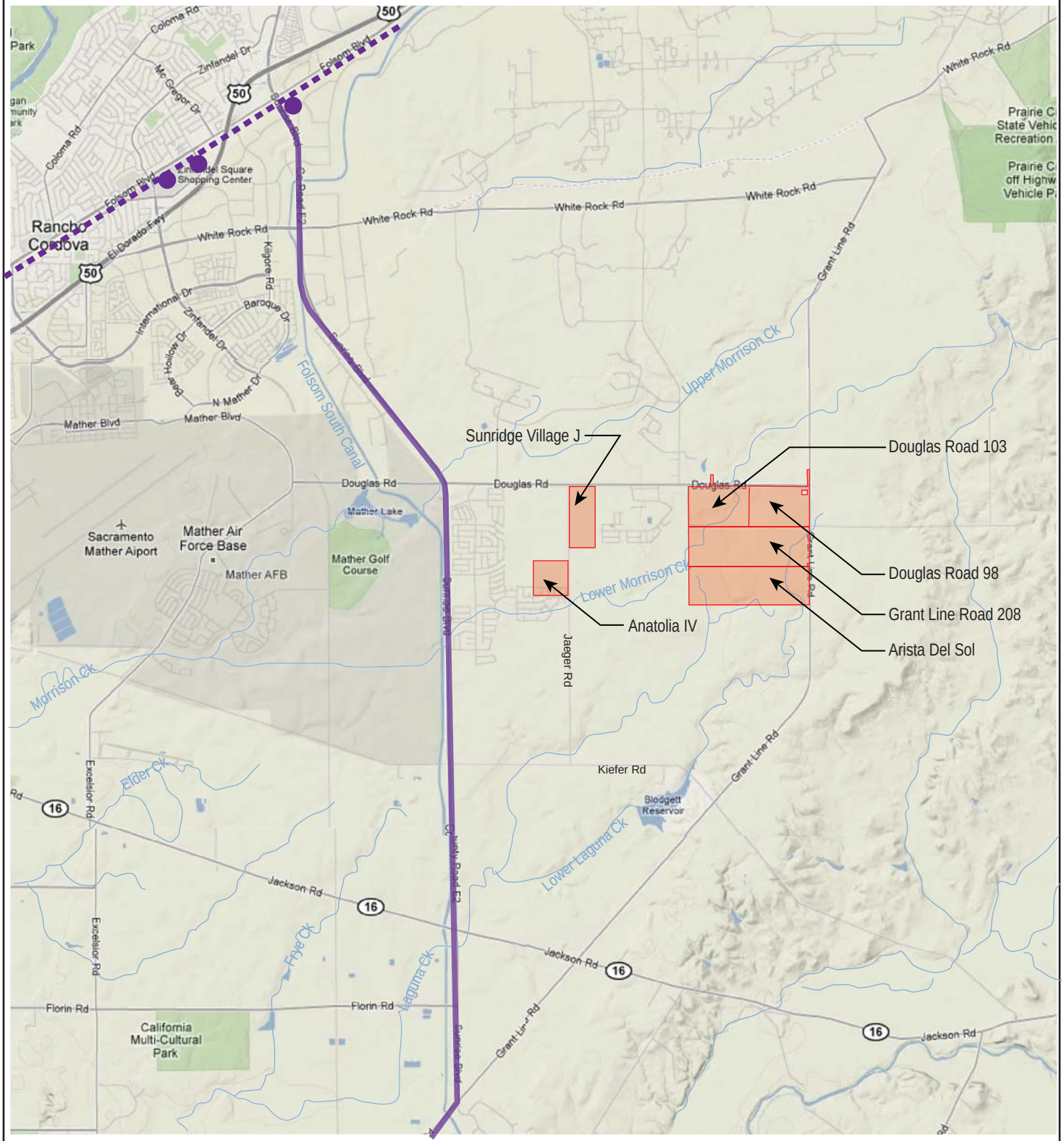

Source: Google Maps, terrain

Figure 3.9-2. Transit Corridors Near the Project Site

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Sewer pipes carrying less than one million gallons per day are referred to as "collectors." The cost of interceptor and trunk facilities are reimbursable or creditable against sewer fees. The construction of collectors is the responsibility of the developer of a specific project. The 84-inch interceptor 20-mile-long Bradshaw Interceptor provides sewer capacity for the cities of Folsom and Rancho Cordova, as well as for the eastern unincorporated areas of Sacramento County.

In November 1996, the SRCSD and CSD-1 Board of Directors approved the Sacramento Sewerage Expansion Master Plan, which identified future projects needed to accommodate growth. The plan includes two major conveyance facilities that would provide sewer service to the project sites, the Mather Interceptor Sewer and the Laguna Creek Interceptor Sewer. In 2008, both the South Interceptor and the Mather Interceptor projects were put on hold. Due to slower development in 2008, the pressure to construct interceptor facilities was reduced. After reevaluation of the sewer services, the SRCSD determined that both the South and Mather Interceptors could be delayed for several years (Sacramento Regional County Sanitation District, 2008).

3.9.3 REGULATORY FRAMEWORK

The following section describes the federal, state, and local rules and regulations applicable to the alternatives.

3.9.3.1 FEDERAL LAWS, REGULATIONS, POLICIES, AND PLANS

There are no federal plans, policies, regulations, or laws related to utilities and public service that are applicable to the alternatives under consideration.

3.9.3.2 STATE LAWS, REGULATIONS, POLICIES, AND PLANS

QUIMBY ACT

Cities and counties have been authorized since the passage of the 1975 Quimby Act (California Government Code §66477) to pass ordinances requiring that developers set aside land, donate conservation easements, or pay fees for park improvements. The Quimby Act requires developers to help mitigate the impacts of property improvements. The act gives authority for passage of land dedication ordinances to cities and counties. The fees must be paid and land conveyed directly to the local public agencies that provide park and recreation services community-wide.

The Quimby Act applies only to the acquisition of new parkland; it does not apply to the physical development of new park facilities or associated operations and maintenance costs. Therefore, the Quimby Act effectively preserves open space needed to develop park and recreation facilities, but it does not ensure the development of the land or the provision of park and recreation services to residents. In addition, the Quimby Act applies only to residential subdivisions. Nonresidential projects could contribute to the demand for park and recreation facilities without providing land or funding for such facilities. As described below, the CRPD collects Quimby Act fees.

3.9.3.3 REGIONAL AND LOCAL LAWS, REGULATIONS, POLICIES, AND PLANS

CITY OF RANCHO CORDOVA GENERAL PLAN

Public services and utilities are governed by a large number of policies described in the Rancho Cordova General Plan including the Land Use Element, Economic Element, Safety Element, and Natural

Resources Element. Goals, policies, or actions from the City of Rancho Cordova General Plan relating to utilities and recreation, which are applicable to the alternatives under consideration, are presented below.

GOAL LU.2 - ESTABLISH GROWTH PATTERNS BASED ON SMART GROWTH PRINCIPLES AND THE CITY BUILDING BLOCKS CONCEPT.

Policy LU.2.1 - Ensure future land use and growth within the Planning Area adheres to the City's nine smart growth principles, as described in this Element.

Action LU.2.1.1 - Amend the Zoning Code and Citywide Design Guidelines to include the City's smart growth principles as appropriate.

Policy LU.2.2 - Promote new development and redevelopment in accordance with the building blocks concepts of neighborhoods, villages, and districts.

Action LU.2.2.1 - Identify the building block components of neighborhoods, villages, and districts in the existing areas of the City and encourage redevelopment using the building blocks principles.

Policy LU.2.3 - Encourage the clustering of similar uses into areas or districts that have common needs and that are compatible with one another, in order to maximize their efficiency and identity for Rancho Cordova. Uses to consider clustering include the following:

- Entertainment area (Performing Arts Center, local theaters, and studios);
- Sports/recreation facilities (e.g. bowling alleys and major sports facilities);
- Hospitals and other care facilities;
- Youth activity centers;
- Amphitheatres; and
- Regional shopping opportunities

GOAL LU.3 - ESTABLISH RANCHO CORDOVA AS A DESTINATION PLACE IN THE REGION AND A LEADER IN THE COLLECTIVE RESOLUTION OF REGIONAL ISSUES.

Policy LU.3.4 - Consult with state and federal regulatory and resource agencies during initial review of development projects to identify potential environmental conflicts and establish, if appropriate, concurrent application processing schedules.

Policy LU.3.5 - Work with community service providers such as the Cordova Recreation and Park District and the Rancho Cordova Neighborhood Center to expand their services to new areas of the City as opportunities arise.

GOAL ISF.2 – ENSURE THE DEVELOPMENT OF QUALITY INFRASTRUCTURE TO MEET COMMUNITY NEEDS AT THE TIME THEY ARE NEEDED.

Policy ISF.2.1 – Ensure the development of public infrastructure that meets the long-term needs of residents and ensure infrastructure is available at the time such facilities are needed.

Action ISF.2.1.1 - Except when prohibited by state law, require sufficient capacity in all public facilities to maintain desired service levels and avoid capacity shortages, traffic congestion, or other negative effects on safety and quality of life.

Action ISF.2.1.2 – Adopt a phasing plan for the development of public facilities in a logical manner that encourages the orderly development of roadways, water and sewer, and other public facilities.

Action ISF.2.1.3 - Withhold public financing or assistance from projects that do not comply with the planned phasing of public facilities, and approve interim facilities only in special circumstances.

Action ISF.2.1.4 - Work with utility providers to coordinate the installation or upgrading or relocation of utilities to minimize multiple trenching of City streets.

Policy ISF.2.2 - Coordinate with independent public service providers, including schools, parks and recreation, utility, transit, and other service districts, in developing service and financial planning strategies.

Action ISF.2.2.1 – Establish a Technical Review Committee for continued coordination with outside service agencies, including water and sewer providers, the Cordova Recreation and Park District, and the school districts, during the review of plans and development projects.

Policy ISF.2.3 - Ensure that adequate funding is available for all infrastructure and public facilities, and make certain that the cost of improvements is equitably distributed.

Action ISF.2.3.1 - Require secure financing for all components of the transportation system through the use of special taxes, assessment districts, developer dedications, or other appropriate mechanisms. Financing should be sufficient to complete required major public facilities at their full planned capacities in a single phase. Major facilities include roadways of collector size or larger; all wells, water transmission lines, treatment facilities, and storage tanks needed to serve the project; and all sewer trunk and interceptor lines and treatment plants or treatment plant capacity.

Action ISF.2.3.2 - Require new development to fund its fair share portion of its impacts to all public infrastructure and facilities.

Action ISF.2.3.3 - Include sufficient funding in fee programs and/or other finance mechanisms to cover the costs of each of the following roadway items:

- Design, engineering, environmental compliance, and construction of roadway lanes, traffic signals, and bridges.
- Right of way acquisition, design, engineering, environmental compliance, and construction costs.
- Drainage and other facilities related to new roadway construction.
- Installation of landscaped medians, sidewalks, and streetscaping where appropriate.

Policy ISF.2.5 - Ensure that water flow and pressure are provided at sufficient levels to meet domestic, commercial, industrial, and firefighting needs.

Policy ISF.2.6 - Ensure that sewage conveyance and treatment capacity are available in time to meet the demand created by new development, or are guaranteed to be built by bonds or other sureties.

Action ISF.2.6.1 - Require all subdivision developments to adhere to the following provisions, to the extent permitted by State law:

- Sewage/wastewater treatment capacity shall be available at the time of tentative map approval.
- The agency providing sewer service to the subdivision shall demonstrate prior to the approval of the Final Map by the City that sufficient capacity shall be available to accommodate the subdivision plus existing development, and other proposed or approved projects which have received sewage treatment capacity commitment.
- On-site and off-site sewage conveyance systems required to serve the subdivision shall be in place prior to the approval of the Final Map, or their financing shall be assured to the satisfaction of the City, consistent with the requirements of the Subdivision Map Act.
- Sewage conveyance systems within the subdivision shall be in place and connected to the sewage disposal system prior to the issuance of any building permits. Model homes may be exempted from this policy as determined appropriate by the City and subject to approval by the City.

Policy ISF.2.7 – Minimize visual impacts and physical impediments of utility sites, infrastructure, and equipment.

Action ISF.2.7.1 – Coordinate with utility agencies to underground, strategically place, and screen equipment to the maximum extent feasible.

Action ISF.2.7.2 - Require complete visual screening of all utility sites, facilities, and equipment, with special emphasis on screening in proximity to residential property or in viewshed.

GOAL ISF.3 – PROVIDE A FULL RANGE OF LOCAL SERVICES THAT MEET LOCAL NEEDS.

Policy ISF.3.1 – Foster the provision of comprehensive services targeted to meet the needs of the City's growing population.

Action ISF.3.1.1 – City Staff shall actively work with other agencies and jurisdictions in the development/expansion and funding of a wide range of public services including, but not limited to neighborhood services, social and cultural services, special needs services, housing services, educational and community services, and recreational services.

Policy ISF.3.2 – Support enhanced library services for existing and future residents and employees that exceed regional and national standards.

Action ISF.3.2.2 - Encourage the County to locate new libraries within Rancho Cordova accessible to pedestrians, bicycles, and public transit riders, in a highly visible location that is accessible to unaccompanied children.

GOAL ISF.4 – PROVIDE EDUCATIONAL OPTIONS THAT RESULT IN WELL EDUCATED CHILDREN AND ADULTS IN THE CITY OF RANCHO CORDOVA.

Policy ISF.4.1 - Encourage school districts to locate and site facilities in an integrated manner with the rest of the community.

Action ISF.4.1.1 – Convene a focused design effort with the School Districts to establish design guidelines for schools. Key issues include:

- Proper sizing of school campuses and consideration of urban school design.
- Design solutions that enhance; rather than impact neighborhoods.
- Address shared use of school facilities, including continued park/school combined facilities and community use of school campus libraries.

Action ISF.4.1.2 - Support the School Districts in siting new school facilities according to the following criteria:

- Schools should be within walking distance of most residences, and should connect with trails, bikeways, and pedestrian paths.
- Schools should serve as a focal point of neighborhood activity and be interconnected with churches, parks, greenways, and off-street paths whenever possible.
- New schools should continue to be placed adjacent to neighborhood and community parks whenever possible and be designed to promote joint use of appropriate facilities.

Action ISF.4.1.3 – Conduct focused discussion with local school districts to discuss design of pedestrian and bicycle facilities adjacent to and within the school sites.

Policy ISF.4.2 – Support a single unified school district serving the children of Rancho Cordova.

Action ISF.4.2.1 – Continue to pursue a single unified school district for the City's K-12 children.

GOAL NR.7 - REDUCE PER CAPITA ENERGY CONSUMPTION.

Policy NR.7.1 - Increase energy conservation Citywide.

Policy NR.7.2 - Promote the development and use of advanced energy technology and building materials in Rancho Cordova.

Policy NR.7.3 - Encourage the development of energy efficient buildings and subdivisions.

Action NR 7.3.1 - Offer incentives (e.g., reduced fees, expedited entitlement processing, density bonus) for plans/projects that exceed Title 24 energy efficiency requirements by 10%.

GOAL NR.8 - PROMOTE WASTE REDUCTION, REUSE, RECYCLING, AND COMPOSTING EFFORTS.

Policy NR.8.1 - Support recycling efforts by developing a set of programs to educate residents on recycling and provide recycling services.

Action NR.8.1.1 - Continue providing curbside recycling and green waste service to all single-family and duplex residences in Rancho Cordova.

Action NR.8.1.5 - Provide locations for household hazardous wastes to be recycled.

Policy NR.8.7 - Maintain contact with Sacramento County and Allied Waste (or its successor) regarding the capacity projections of Kiefer Landfill and Lockwood Landfill to ensure an adequate capacity in their disposal facilities for the long-term disposal needs of Rancho Cordova.

GOAL OSPT.1: CREATE A PREMIER SYSTEM OF PUBLIC PARKS AND RECREATION PROGRAMS THAT MEET THE NEEDS OF ALL RESIDENTS.

Policy OSPT.1.1 - Review all proposals for new residential development to ensure each project complies with the City's minimum standards for parkland dedication [five acres of land per 1,000 population], and is consistent with Cordova Recreation and Park District goals.

Action OSPT.1.1.3 – Establish a procedure for determining an appropriate in lieu fee amount that ensures CRPD will have adequate funds to purchase required parkland for which in lieu fees are paid.

Policy OSPT.1.2 - Coordinate with the Cordova Recreation and Park District to ensure that parks are provided, developed, and operated in a way that ensures that the City's parks goals are achieved throughout the community.

Policy OSPT.1.3 - Encourage park development adjacent to school sites and other compatible uses (public and private) for enhanced civic space and integration into the community.

Policy OSPT.1.4 – Ensure that adequate and reliable funding sources are established for the long- term maintenance of parks and trails.

Policy OSPT.1.5 - Support the Cordova Recreation and Park District in their construction and maintenance of recreational facilities.

GOAL OSPT.2: ESTABLISH A SYSTEM OF OPEN SPACE AREAS THAT CONNECT ALL PARTS OF THE COMMUNITY AND PROVIDE OPPORTUNITIES FOR PASSIVE AND NEIGHBORHOOD-BASED RECREATION.

Policy OSPT.2.1 - Review all proposals for new residential development to ensure compliance with the City's minimum open space standards [1.75 acres of land per 1,000 population, including Mandatory Open Space, and Performance Based Open Space].

Action OSPT.2.1.7 - Consider including encumbered land (such as a power line easement) that meets all other requirements for open space for inclusion in the open space system on a case-by-case basis.

Policy OSPT.2.2 - Create a [comprehensive Open Space Preservation Plan] for identifying and maintaining open space.

Action OSPT.2.2.1 - Consider locating public parks adjacent to mitigation lands to create a greater sense of open space and to take advantage of opportunities for vistas and trail connections.

Policy OSPT.2.3 - Maximize the potential benefits of natural resource mitigation lands within urban development.

Action OSPT.2.3.1: - Encourage projects to accomplish the following:

- Align roads and public spaces to take advantage of vistas over mitigation lands;

- Site publicly accessible trails adjacent to the boundaries of mitigation lands to take advantage of the open character and uninterrupted edge of the mitigation lands; and

- Consider locating public parks adjacent to mitigation lands to create a greater sense of open space and to take advantage of opportunities for vistas and trail connections.

GOAL OSPT.3: CREATE A SYSTEM OF PEDESTRIAN AND BICYCLE TRAILS THAT MAXIMIZE USAGE WHILE PROVIDING PLACES FOR WALKING AND BICYCLING WITHOUT CONFLICTS WITH MOTOR VEHICLES.

Policy OSPT.3.1 - Develop a trails system that provides for maximum connectivity, so that all trails are linked for greater use as recreational and travel routes.

Action OSPT.3.1.3 - Provide appropriate pedestrian and bicycle linkages to existing facilities, particularly to those facilities within the American River Parkway and the Folsom South Canal.

AMERICAN RIVER PARKWAY PLAN

The American River Parkway Plan was adopted by Sacramento County in 1985 to manage the Parkway's natural resources, to allow recreation in a natural environment, and to coordinate Parkway planning and management efforts. The County recently updated the American River Parkway Plan and the City of Rancho Cordova is a partner in the planning efforts to preserve and enhance the area and recreational uses adjoining the City's northern boundary.

3.9.4 ENVIRONMENTAL CONSEQUENCES AND MITIGATION MEASURES

The alternatives were evaluated for impacts on existing utilities, public services and parks and recreation, and the adequate provision of these services to the planned developments. The primary issues at the project sites involve the provision of adequate utilities and public services to the planned developments, and not negatively impacting existing utilities and public services that may be affected by project activities.

Land use mitigation measures would be enforced by the City of Rancho Cordova; the project applicants would participate in their implementation.

3.9.4.1 THRESHOLDS OF SIGNIFICANCE

Impacts to utilities and public services will be considered significant if any of the following criteria are met:

- Consistency with policies of the City of Rancho Cordova General Plan relating to energy, fire protection, law enforcement, schools, parks and recreation, telephone and cable television, public transit, libraries, solid waste handling and sewage.

- Provision of adequate services for energy, fire protection, law enforcement, schools, parks and recreation, telephone and cable television, public transit, libraries, solid waste handling and sewage.

- Not increasing the demand from existing agencies providing services for energy, fire protection, law enforcement, schools, parks and recreation, telephone and cable television, public transit,

libraries, solid waste handling and sewage without contributing to the cost of such services, or otherwise compensating for the additional services required.

The City of Rancho Cordova and CRPD's Quimby Act standard for dedication of parkland is 5 acres per 1,000 residents. A park and recreation impact is considered significant if implementation of the alternatives under consideration would do either of the following:

- Provide insufficient mini, neighborhood, and community parkland according to CRPD standards;
- Provide insufficient parkland according to the City and CRPD's Quimby standard of 5 acres per 1,000 residents.

3.9.4.2 ANALYSIS METHODOLOGY

The following impact analysis of each utility and public service covers the entire plan area, whereas the six project sites represent only 14.4% of the Sunrise-Douglas Community Plan dwelling units. Therefore, the impacts can be expected to be proportionately less for the Proposed Project Alternative. The Reduced Footprint Alternative would have 77% of the development of the Proposed Project Alternative, and the No Action Alternative, 63%. Planned utilities and public services would be scaled back to serve these smaller developments.

The evaluation of recreational resources is based on a comparison between existing and planned future recreational facilities and City of Rancho Cordova and CRPD policies. The demand for recreational resources was estimated based on Draft Master Plan standards for parkland acreage relative to population size. The number of residents on the project site was estimated based on a per-dwelling-unit population generation factor of 2.6.

Because the City of Rancho Cordova would measure the park land standard for the Specific Plan area as a whole, and not for each individual lot, this analysis evaluates the park land acreage and population for the entire Specific Plan area, and not for the six properties. In addition, the Sunridge Specific Plan Area is organized into discrete neighborhoods, or "Villages." The boundaries of the Villages generally do not correspond with the property boundaries of the applicants. Neighborhood amenities, including parks, were planned to correspond to the Village boundaries and are not necessarily evenly distributed within each applicant's property. Therefore, for this impact analysis, the ratio of park acreage to expected population was compared for the entire Specific Plan area, as opposed to the ratio for each applicant's property, or for the six properties as a whole. The CRPD confirmed that their calculations would be performed for the Specific Plan as a whole (Pers. Comm., Mr. Dave Edmonds, CRPD, April 2010).

Parklands (community and neighborhood parks) proposed for the project are the focus of this analysis. Open Space, Open Space Preserve, Private Recreation, bike paths, and Public/Quasi-Public land uses (including multiuse stormwater detention basins) are not considered part of this analysis because CRPD does not consider these uses as meeting parkland dedication requirements; therefore, these uses were not included in the estimating total parkland acreage.

3.9.4.3 IMPACT ANALYSIS

The Utilities and Public Services impact analysis is provided for the Sunridge Specific Plan Area. This section addresses the environmental consequences of the Proposed Project Alternative, Reduced Footprint Alternative, and No Action Alternatives.

IMPACT3.9-1 - Increased demand for energy services. *Implementation would increase the demand for electricity and infrastructure including electrical transmission lines and substations.*

Proposed Project Alternative, Reduced Footprint Alternative and No Action Alternative. Approximately 400 residential units may be able to be served initially by an existing electrical substation located near Sunrise Boulevard and Jackson Highway. Development of the entire community land area would require approximately six new electrical substations and overhead 69kV transmission lines along major roadways. Three of the new electrical substations would be needed to serve the area, plus construction of power lines along Douglas and Grant Line Roads.

In order to provide natural gas service, new gas distribution feeder mains, regulator station, odorizer stations, valve lots, and distribution and transmission lines would also be needed.

Land uses beneath the existing 230kV transmission lines that traverse the analysis area are restricted in the 350-foot corridor easement. No structures or water bodies are allowed in this area, and clear unrestricted access must be maintained.

Implementation of the mitigation measures would ensure consistency with the requirements identified herein and would fully mitigate the potential for impacts associated with the provision of electrical and gas services. The Proposed Project, Reduced Footprint, and No Action Alternatives impact would be **less than significant with mitigation**.

Mitigation Measure 3.9-1: Coordination with electric utility service.

The project applicants would address and resolve project-related electrical facility issues through close coordination with SMUD in project planning and development. The applicants would grant all necessary right-of-way for installation of electrical facilities. Coordination with SMUD would occur and any required agreements would be established prior to necessary permits or approvals for the project.

To promote the safe and reliable maintenance and operation of utility facilities, the California Public Utility Commission has mandated specific clearance requirements between utility facilities and surrounding objects or construction activities. To ensure compliance with these standards, future development project applicant(s) would coordinate with PG&E early in the development of their development plans and would provide for unrestricted utility access and prevent easement encroachments that might impair the safe and reliable maintenance and operations of PG&E's facilities.

Residential design in all subdivisions would adhere, to the greatest practical extent, to the SMUD energy Efficiency/Load Management Measures for Residential New Construction.

IMPACT3.9-2 - Increased demand for fire protection services. *Implementation would increase the demand for fire protection services and delay service response time.*

Proposed Project Alternative, Reduced Footprint Alternative and No Action Alternative. The Specific Plan would allow 10,020 dwelling units and 1.74 million square feet of commercial uses on 2,632 acres, within a portion of the proposed Sunrise-Douglas Community Plan. The Sacramento Metropolitan Fire District had indicated that one or more new staffed fire stations would be required to provide adequate fire protection within the Specific Plan at buildout. There is presently a station five miles to the south of the plan area and another existing station six miles to the north.

In March 2003, the Sacramento Metropolitan Fire District board of directors approved a $50 million Fire Station Replacement Program to construct eight new fire stations in the district. The largest of the proposed new stations in the replacement program is Station 68, which was constructed at 4381 Anatolia Drive, 2 miles from the eastern boundary of the project site. This station has 16,000 square feet of space and house 13 firefighters. The District has reviewed the project and indicated their support for the proposed system of major streets (arterials and collectors). Specific design requirements of the District would be implemented which would fully mitigate potential project impacts on fire protection service. The Proposed Project, Reduced Footprint and No Action Alternative's impact would be **less than significant with mitigation**.

Mitigation Measure 3.9-2: Optimizing fire protection service and water supply infrastructure.

The Specific Plan land use map would be modified to reflect an appropriate fire station site, in consultation with the Sacramento Metropolitan Fire District.

Cul-de-sacs would not exceed 150-feet in length where possible, in order to facilitate emergency vehicle response throughout the development area. Off-street bikeways, pathways, and recreational areas would provide adequate access for firefighting apparatus.

All development would meet minimum water supply requirements for fire flow, type of land use.

Accessibility for fire control would meet the specifications of the Fire District and would be in place during all phases of the project.

IMPACT3.9-3 - Increased demand for law enforcement services. *Implementation would increase the demand for police services may result in delay in service response time.*

Proposed Project Alternative, Reduced Footprint Alternative and No Action Alternative. Demand for services currently exceeds the supply of resources, which is linked primarily to the County General Fund. Growing demand and a relatively slower growing resource base has led to an inability to maintain historic levels of service. Reducing services has enabled the Sheriff's office to maintain essential services.

The design of a development can influence the demand for services through the presence or absence of internal security measures. Project circulation design can also affect the Sheriff Department's ability to provide timely emergency response. The Department has standard design recommendations for residential developments. The Sheriff's office has reviewed the proposed project and identified various design features which would minimize the demand for law enforcement services. The Proposed Project Alternative, Reduced Footprint and No Action Alternative's impact would be **less than significant with mitigation**.

Mitigation Measure 3.9-3: Public safety and crime prevention planning.

Future development projects would consult with the Sheriff's Department and implement recommended crime prevention/safety development design measures to the maximum extent feasible.

IMPACT3.9-4 - Increased demand for school services. *Implementation would increase the demand for public school services beyond the school district capacity.*

Proposed Project Alternative, Reduced Footprint Alternative and No Action Alternative. Build-out of the Specific Plan would generate the following student population, by District:

- In the Folsom Cordova Unified School District 235K-6; 64 Middle; 121 High
- In the Elk Grove Unified School District: 3,560 K-6; 982 Middle; 1,590 High

In addition to these 6,552 (total) new students generated by build-out of the Specific Plan, development of the remaining Community Plan area would ultimately generate an additional 8,168 students, for a total student population of 14,720 within the Sunrise-Douglas planning area.

For the Specific Plan, four elementary schools, one middle school, and one high school would be needed in the Elk Grove District. The land use plan includes four elementary school sites within the Specific Plan area, and one combined middle school and high school site within the Community Plan area, which is expected to be adequate to serve Specific Plan development. Additional school sites would need to be designated within the Community Plan area at the time that specific land use plan(s) are developed for that area, in order to provide an adequate number of school sites to serve build-out development within the remaining Community Plan area. The location of future school sites within the Community Plan area would be determined in consultation with the relevant school district, and would meet the following minimum local criteria and any applicable state criteria for schools siting:

- School sites shall be basically level and square in shape, with no more than 3 to 5 width-to-length ratio.

- Schools shall be located away from major power lines, such as the 230kV corridor that traverses the Plan area.

- Schools shall not be located within an existing or proposed noise contour line of 65 CNEL/L_{dn} or greater and all portions of the site must be mitigable to 60 L_{dn}.

- Schools shall not be located with any aircraft accident exposure or airport safety areas, nor conflict with any Airport Land Use Commission (ALUC), Federal Aeronautics Administration (FAA), Air Installation Compatible Use Zone (AICUZ), or California Division of Aeronautics policies or regulations. If a site is within 2 miles of the Mather Airport runways, or any other runway or heliport, it must receive California Division of Aeronautics review.

- The schools shall be located in residential neighborhoods along secondary collector streets, typically with two street frontages.

- Schools and adjacent lands affecting the use of the site must be free of any significant environmental constraints, including but not limited to protected habitats or species, water courses, wetlands or vernal pools, potentially toxic and hazardous substances, and geologic, seismic, topographic, or soil restrictions. Application of agricultural chemicals on farmlands adjacent to proposed school sites may be considered a constraint.

- School sites must be free of wetland constraints or within an area permitted to be filled.

- The site must not be significantly affected by any nuisance factors such as odors associated with farm operations, landfills, or sewage treatment plans. Proximity to the Sacramento Rendering Company and prevailing wind direction shall be disclosed.

- Schools must be adjacent to the compatible uses. Industrial and commercial uses are not typically considered compatible adjacent uses for elementary schools.

- Schools should not be on land under active Williamson Act contract.

- Schools must have timely access to all utilities and services, including sewer, water, gas, electric and drainage. Utility easements on school sites should be avoided. The site must not be traversed by or immediately adjacent to major fuel, natural gas, or hazardous materials/waste pipelines or storage tanks.

The Public Facilities Financing Plan for the Specific Plan area indicates that funding of needed school facilities would occur through the payment of Elk Grove and Folsom Cordova school impact fees, through participation in the Elk Grove School District's Mello Roos Community Facilities District (CFD), and through the State School Building Program. By contributing towards the costs of school facilities as outlined in the proposed Financing Plan, and by designating an adequate number of sites for new school construction, Sunrise-Douglas Plan area development would have a less than significant impact on school facilities. The Proposed Project Alternative, Reduced Footprint Alternative and No Action Alternative impact would be considered **less than significant**.

Mitigation Measure 3.9-4: No mitigation measures are required.

IMPACT3.9-5 - Increased demand for telephone and cable television services. *Implementation could increase demand on telephone and cable television services.*

Proposed Project Alternative, Reduced Footprint Alternative and No Action Alternative. Telephone and cable television service would be provided by AT&T and Sacramento Cable using lines placed within public utility easements along roadways. Service cabinets and other infrastructure would be placed as needed throughout proposed subdivisions, as directed by the service provider. Coordination between the service providers and developer(s) would preclude any adverse impacts associated with the provision of these services. The Proposed Project Alternative, Reduced Footprint Alternative and No Action Alternative impact would be considered **less than significant with mitigation**.

Mitigation Measure 3.9-5: Coordination with the applicable service provider.

Future development project applicants would address and resolve issues related to the provision of telephone and cable television services within the Specific Plan Area through close coordination with the applicable service provider during project planning and development.

IMPACT3.9-6 - Increased demands for transit service. *Implementation could increase demand for transit services.*

Proposed Project Alternative, Reduced Footprint Alternative and No Action Alternative. The RT does not currently provide service to the Sunrise-Douglas planning area. Although this planning area is within RT's district boundaries, the area south of Douglas Road and east of Sunrise Boulevard is not within RT's "activated" territory. For RT to serve this area in the future, the Board of Supervisors must adopt a resolution requesting activation of the area within the RT district.

The extension of bus service on Sunrise Boulevard to the project site is not within RT's short-range planning horizon, although it is within RT's long range (20+) year planning horizon. However, the RT Planning Manager has indicated that bus service would only be extended if land use densities/intensities in the corridor are sufficient to support public transit service, and adequate transit capital and operating funds are available (Anthony Palmere, RT Planning Manager, NOP Comment Letter, March 18, 1997). Policy CI-13 of the County General Plan, however, indicates that if the Specific Plan is approved, the Board of Supervisors would support a minimum level of transit to this development area, even if it does not have the densities to generate sufficient transit ridership for "high quality service."

In the Highway 50 corridor, light rail service was extended in 1998 from Butterfield Station to a new station at Mather Field Road, and to the City of Folsom from the Mather Field/Mills Station in 2005. This extension includes a station at Sunrise Boulevard.

RT staff has cited four "primary reasons" why RT believes it would not be cost effective to extend "high quality" (frequent) fixed-route bus service to the proposed new community:

- Low proposed densities overall
- Medium density areas that are limited in size and distributed rather than clustered
- A planning area that is isolated from other transit-supporting land uses
- No identified transit capital or operating funds

If RT were to extend bus service to the proposed community, the Planning Manager has indicated that the most likely service scenario would be the provision of one or two peak hour trips from the intersection of Sunrise Boulevard and Douglas Boulevard to the nearest light rail station, or hourly "lifeline" service to connect the new community with other adjacent communities and light rail station(s). The RT Planning Manager has indicated that "it is highly unlikely that" the proposed predominantly low density residential community "would generate sufficient ridership to achieve minimum transit productivity standards to justify a high level of transit service" (July 15, 1998).

The Specific Plan proposes a private shuttle system with 15 to 30 minute headway, which would loop through the Plan area and connect commuters with Regional Transit service. The Draft Specific Plan PFFP includes a fee component of $195,000 to cover the capital costs of three shuttle vehicles. However, the PFFP does not identify how the private shuttle system's operation and maintenance costs would be funded. Such a funding mechanism should be identified to ensure that the shuttle system can function properly. On-site bus stop construction costs would be included in the costs of frontage improvements to be paid for by adjacent development.

Development within the Plan area would also be subject to the payment of District 3 County Roadway and Transit Fees, to help fund public regional roadway and transit facilities.

Implementation of the Specific Plan would not disrupt or interfere with planned public transit facilities. However, the project's overall low proposed densities would likely preclude the extension of high quality public transit service in to the planning area, which would exacerbate the traffic and air quality impact resulting from development of the planning area. Increasing the project's residential densities and non-residential intensities in proximity to potential future transit routes to encourage the delivery of high quality public transit serviced, and successful operation of the private shuttle system, would reduce the impacts from the Proposed Project, Reduced Footprint Alternative and No Action Alternative on transit availability and usage to a **less than significant with mitigation**.

Mitigation Measure 3.9-6: Establish funding for shuttle network system.

The Specific Plan Public Facilities Financing Plan shall identify a funding mechanism for the private shuttle systems long-term operating and maintenance costs commensurate with the level of transit service proposed.

IMPACT3.9-7 - Increased demands for library service. *Implementation may increase demand for library services.*

Proposed Project Alternative, Reduced Footprint Alternative and No Action Alternative. According to the proposed Specific Plan PFFP, space for a public library is planned to be provided in the combined middle school, high school, and community park complex within the Community Plan area. The Draft Specific Plan PFFP contains an initial fee component of $2,718,000 for the Specific Plan area's contribution towards funding of library facilities. Therefore, Proposed Project Alternative, Reduced Footprint Alternative and No Action Alternative impacts upon library services are expected to be **less than significant**.

Mitigation Measure 3.9-7: No mitigation measures are required

IMPACT3.9-8 - Increased demand for solid waste service. *Project implementation increases demands for solid waste service.*

Proposed Project Alternative, Reduced Footprint Alternative and No Action Alternative. Development of the Specific Plan area would generate the need for expanded solid waste collection and disposal services, which would be funded through the collection of user fees. Expansion of the Kiefer Landfill was recently approved, which would provide capacity to accommodate projected population growth through the year 2035. These planned solid waste facilities would therefore be sufficient to serve development of the Plan area. The Proposed Project Alternative, Reduced Footprint Alternative and No Action Alternative's impact on solid waste service is considered to be **less than significant**.

Mitigation Measure 3.9-8: No mitigation measures are required

IMPACT3.9-9 - Lack of consistency with the General Plan. *Implementation may be in conflict with the principles of the General Plan.*

Proposed Project Alternative, Reduced Footprint Alternative and No Action Alternative. The Sunridge Specific Plan includes development standards and design guidelines. The Specific Plan appears to be substantially consistent with General Plan policies relating to the provision of public services.

The utility and public service impact analysis for the Reduced Footprint Alternative and No Action Alternative is essentially the same as that for the Proposed Project Alternative; it varies only in degree. The utility and public service impact analysis for the Proposed Project Alternative, described in Section 4.2.4, covers the entire Specific Plan area. The Reduced Footprint Alternative represents approximately 25% of the Specific Plan dwelling units, the No Action Alternative approximately 21%, and the Reduced Footprint and No Action Alternatives impacts can be expected to be proportionately less. The Proposed Project Alternative, Reduced Footprint Alternative and No Action Alternative's impact would be considered **less than significant**.

Mitigation Measure 3.9-9: No mitigation measures are required

IMPACT3.9-10 - Sufficiency of project site parkland to meet project site demand/ increased demand on regional parks. *City of Rancho Cordova standards require 5 acres of parkland per 1,000 residents. Implementation should not increase the demand on existing neighborhood, community and regional parks such that the physical deterioration of the existing facilities would occur or be accelerated.*

Proposed Project Alternative, Reduced Footprint Alternative and No Action Alternative. The City of Rancho Cordova and CRPD require 5 acres of parks for every 1,000 residents. Residential development for the Sunridge Properties would involve construction of 3,258 dwelling units, generating a population of 8,471 persons at buildout, requiring 42 acres of parks to meet the standard. The Proposed Project Alternative

includes 45 acres of parks for Anatolia IV, Sunridge Village J, Douglas Road 98, and Arista del Sol, as well as additional parkland for Grantline 208 and Douglas Road 103 (undifferentiated from other lands uses; see Table 2-2) .

This acreage provides sufficient park facilities to meet the demand generated by the Proposed Project Alternative population at buildout, and there would be a **no impact** related to parkland acreage.

Because the Reduced Footprint Alternative and No Action Alternative are expected to maintain the same ratio of residential units to parkland, the Reduced Footprint Alternative also would be expected to provide park land required and there would be a **no impact** related to parkland acreage.

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3.10 HAZARDOUS, TOXIC, AND RADIOACTIVE WASTE

This section describes the affected environment and environmental consequences with respect to Hazardous, Toxic, and Radioactive Waste (HTRW). The information presented for the affected environment for HTRW is based upon readily available environmental documents produced from 1997 to 2010.

This HTRW section evaluates the six project sites for evidence of potential soil and groundwater contamination resulting from current and former activities that could result in impacts to future residents. This section presents the Preliminary Phase I Environmental Site Assessment Sunrise-Douglas Specific and Community Plans (PSA) (Wallace-Kuhl, 1997). The Preliminary Phase I PSA was prepared for the Sunrise-Douglas Community Plan/Sunridge Specific Plan EIR (County of Sacramento, 2001) and remains relevant to this area of analysis. The assessment addressed the environmental conditions at this area of analysis and is incorporated by reference.

The Preliminary Phase I PSA also reviewed and referenced other project studies on the potential soil and groundwater impacts from regional contamination plumes. The other project studies referenced included Phase I Preliminary Site Assessment by Anderson Consulting Group (May 1997) and the Draft Evaluation of Groundwater Impacts Report by Bookman-Edmonston Engineering, Inc. (October 1996).

3.10.1 AREA OF ANALYSIS

The HTRW project location is defined as the soils and groundwater directly under the Sunridge Properties geographic boundaries and sources nearby that may affect groundwater under the Sunridge Properties geographical boundaries.

3.10.2 AFFECTED ENVIRONMENT

The Preliminary Phase I PSA evaluates HTRW at the six project sites through a review of environmental record sources and hazardous material databases (Wallace-Kuhl, 1997). Hazardous material means any material that, because of its quantity, concentration, or physical or chemical characteristics, poses a hazard to human health if released into the workplace or the environment. Hazardous materials include hazardous substances and hazardous waste (California Health and Safety Code §25501). Hazardous waste means a waste that meets any of the criteria for the identification of a hazardous waste (e.g., toxic, corrosive, ignitable, explosive) adopted by the regulatory agency. The environmental review followed standard environmental practice that continues to remain an acceptable environmental assessment practice today (American Society of Testing Materials (ASTM), 2005).

The 1997 review of environmental record sources and hazardous materials databases was supplemented with current information gathered through the Geotracker database. In 2005, Geotracker was created as an internet based regulatory database and geographic information system to environmental data. The database was used to supplement the Preliminary Phase I PSA and provided regulatory data about hazardous waste permitted facilities, leaking underground fuel tanks, Department of Defense, Spills-Leaks-Investigations-Cleanups and Landfill sites (State Water Resources Control Board (SWRCB), 2010).

3.10.2.1 FIELD RECONNAISSANCE AND DATA REVIEWS

The Preliminary Phase I PSA provided a review of topographic maps, historical aerial photographs, local, state, and federal databases, previous PSAs and other relevant project studies, and conducted on-site interviews. This section summarizes the findings and supplements to the Preliminary Phase I PSA.

TOPOGRAPHIC MAPS AND AERIAL PHOTOGRAPHS REVIEW

The evaluation of the topographic map did not indicate the presence of manufacturing facilities, industrial ponds, storage tanks, airfields, or other industrial facilities or related land uses at the project site. Review of aerial photographs did not indicate obvious evidence of potential hazardous materials, industrial facilities or related land use (Wallace-Kuhl, 1997).

The findings were reaffirmed with a recent review of the Rancho Cordova topographic map and satellite images. The U.S. Geological Service topographic map has not been updated since the Preliminary Phase I PSA evaluation. Consequently, the topographic map review is unchanged from the Preliminary Phase I PSA. The satellites and aerial photographs review were provided through the Google Earth imagery. The average age of Google imagery is three years (Google, 2010).

FIELD OBSERVATIONS AND OTHER PROJECT STUDY REVIEWS

The Phase I PSA observations noted that some of the rural homes in the area of analysis were constructed prior to the 1960s. Because asbestos was banned in 1979, this led to concerns of potential asbestos containing materials (ACMs) in the buildings. Regulated ACMs contains friable asbestos that can be reduced to powder by hand pressure when dry. Examples of common ACMs include spray acoustic ceilings, duct wrap, plaster, paper backing of linoleum, wallboard, and thermal insulation. Some sites were also observed to have small amounts of household garbage that had been illegally dumped. Based on the Preliminary Phase I PSA, no adverse findings were found with respect to potential hazardous materials for the vast majority of the area of analysis (Wallace-Kuhl, 1997).

On March 24, 2010, Brown and Caldwell conducted a cursory windshield survey of the area of analysis. The area of analysis remains uncultivated farmland covered with non-native grasses and vegetation. There was no visible evidence of hazardous material disposal at the area of analysis. There are no homes or buildings remaining at the Douglas Road 103, Douglas Road 98, and Grant Line Road 208 project sites. The only structures observed were several structures at Sunridge Village J, what appeared to be an unoccupied farmhouse on the southeast corner of Anatolia IV, and an occupied house and outbuildings at Arista del Sol.

An abandoned submersible domestic well, water pressure tank, and furnace remain on Sunridge Village J. Remnants of a former farming operation include a Fairbanks-Morse™ turbine pump on an abandoned irrigation well and 3 concrete stand pipes. A municipal sanitary sewer manhole is visible on the boundary of Sunridge Village J. No other building structures were observed. The windshield survey of the location observed no hazardous material storage containers or obvious evidence of hazardous materials disposal or stressed vegetation.

There is a farmhouse, detached garage, and outbuilding located on Anatolia IV. Several vehicles are located on this property. A pile of asphalt grindings, remnants of soil piles, and large diameter corrugated metal culverts were visibly stored on the property. There was no obvious evidence of hazardous material disposal or stressed vegetation at the location.

A farmhouse and outbuildings are located at Arista del Sol. The windshield survey of the location observed no obvious evidence of hazardous materials storage containers, hazardous material disposal, or stressed vegetation. The observations from the 2010 windshield survey are consistent with the information seen in the topographic map and satellite images (U.S. Geological Service, 1994; Google, 2010).

As previously stated, the Preliminary Phase I PSA provided a review of other project studies conducted in the area of analysis. These studies reported on laboratory analysis of soil and groundwater samples taken from the area of analysis. In 1991, surface soil samples from a site near an old olive orchard were laboratory analyzed. The soil samples only detected dichlorodiphenyldichloroethylene, polychlorinated biphenyls, and inorganic lead below the Department of Toxic Substance Control (DTSC) health risk guidelines. The investigation indicated that the olive orchard had been out of production for several years prior to environmental assessment and the use of potentially persistent pesticides had been uncommon. In 1997, groundwater samples were analyzed and contaminants were not detected (Wallace-Kuhl, 1997).

FEDERAL DATABASE SEARCHES

Various search radii were used during the review of federal environmental lists. The former Mather Air Force Base (MAFB) (now known as Mather Field) and Aerojet General Corporation (Aerojet) have been identified as Federal Superfund sites located near the area of analysis during review of the U.S. Environmental Protection Agency (USEPA) Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS), and National Priorities List. The CERCLIS database identifies sites or facilities that are candidates for Federal Superfund status. Within the area of analysis, the Federal databases did not identify any Resource Conservation and Recovery Act (RCRA) generators or sites listed on the USEPA Emergency Response Notification System database (Wallace-Kuhl, 1997).

To supplement the findings of the previous record search, a database search was conducted using Geotracker. Geotracker is a California legislatively-mandated database and geographic information system for online access to environmental data. The database tracks regulatory data about hazardous waste permitted facilities, leaking underground fuel tanks, Department of Defense, Spills-Leaks-Investigations-Cleanups and Landfill sites. On January 1, 2005, the State Water Resources Control Board (SWRCB) adopted regulations that require electronic submittal of information for soil and groundwater cleanup activities to Geotracker.

An updated search for information gathered through the Geotracker database did not provide any additional information not already provided through the Preliminary Phase I PSA. Using a 1-mile search distance beyond the area of analysis, the database search did not identify any additional records of RCRA hazardous waste permitted facilities or contaminated site cleanup activities (SWRCB, 2010). The search distance is consistent with the Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process and the Standards and the Practices for All Appropriate Inquiries Rule promulgated by USEPA (ASTM, 2005).

STATE AND COUNTY DATABASE SEARCHES

The Preliminary Phase I PSA provided a review of various state databases but did not identify any known contaminated municipal groundwater wells, producing or abandoned California Department of Oil and Gas petroleum wells, or active landfills on or within one-half mile of the area of analysis. The Kiefer Boulevard Sacramento County Landfill was identified with its overall site boundary located over 1.5 miles from the area of analysis. The inactive White Rock Road North Dump was also identified with its location about 2 miles northeast of the area of analysis (Figure 3.10-1).

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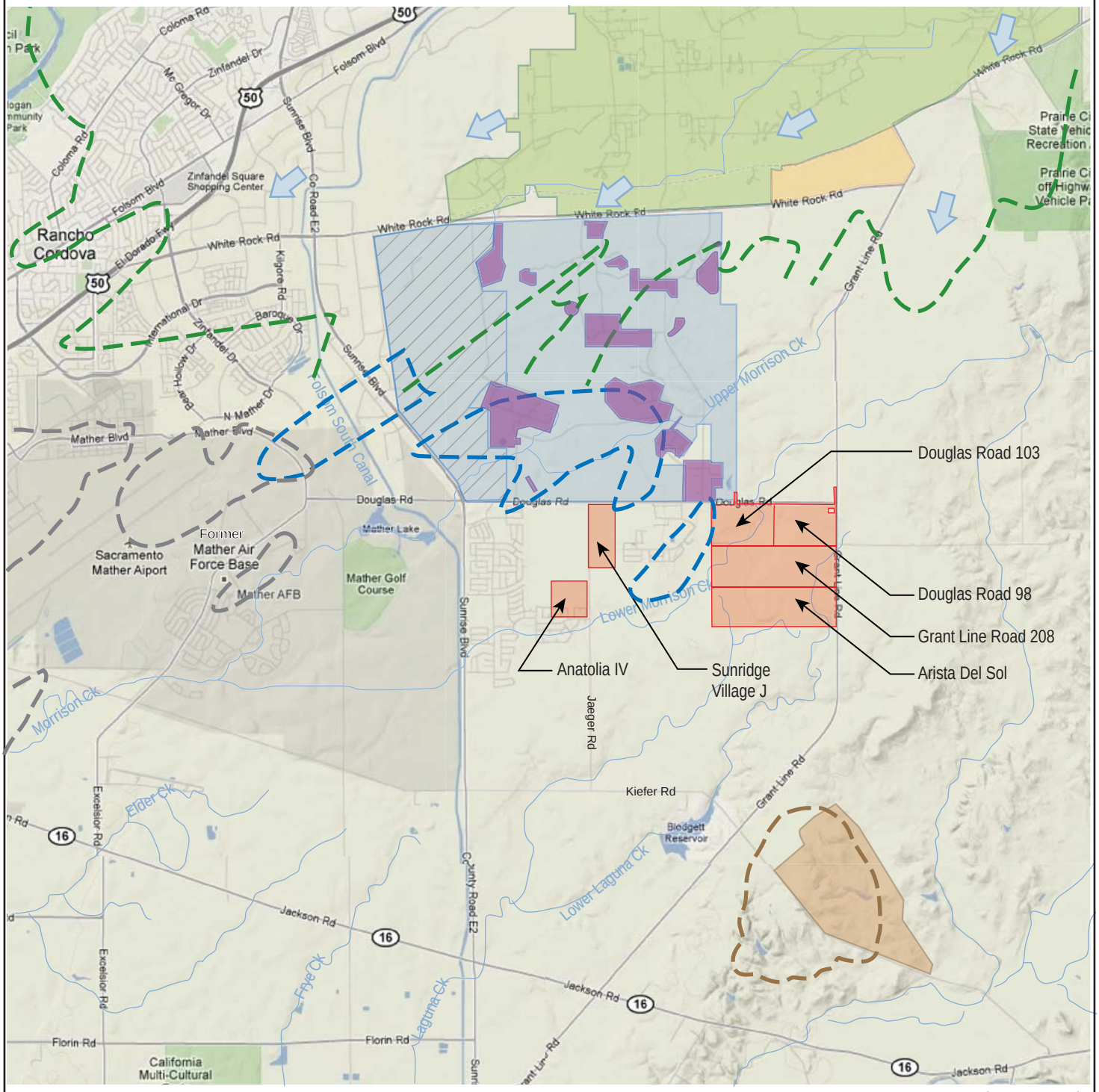

Source: Google Maps, terrain

NORTH

0 3000 6000

Scale in Feet

Site Boundaries

- Sunridge Specific Plan Area
- Aerojet General Corp
- Inactive Rancho Cordova Test Site
- Excluded Area
- IRCTS Investigation Areas (2006)
- Kiefer Landfill
- Former Mather Air Force Base
- White Rock Road North Dump (2008)

Plumes

- Aerojet General Corp (2009)
- Groundwater Flow Direction (2009)
- Inactive Rancho Cordova Test Site, TCE (2007)
- Kiefer Landfill, VOCs (2010)
- Former Mather Air Force Base (2007)

Figure 3.10-1. Site Locations and Contaminant Plumes

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The Inactive Rancho Cordova Test Site (IRCTS) (also known as McDonnell Douglas) and former MAFB appeared on the DTSC list of Active Annual Workplan Sites. The former MAFB is located west and down gradient from the area of analysis; the closest contaminant plume was approximately 2 miles west of the area of analysis and migrating away from the area of analysis (Figure 3.10-1). As previously identified, the former MAFB is a Federal Superfund site (Wallace-Kuhl, 1997).

In 1997, a review of the RWQCB's Central Valley Tank Tracking System database and the Office of Environmental Health Hazard Assessment's Hazardous Waste and Substances Sites list revealed that the only contaminated site within 0.5 mile of the area of analysis was Azteca Construction. An updated data search was conducted through the Geotracker database which indicated Azteca Construction has since been remediated and is no longer an environmental concern (Sacramento County, 2010b; SWRCB, 2010).

The RWQCB Spills-Leaks-Investigations-Cleanups database indicated contamination at the former MAFB and the IRCTS site.

The Sacramento County Environmental Management Department (SCEMD) Regulatory Compliance List revealed no underground storage tank sites listed within a mile of the area of analysis. The database search did not show any additional records of active leaking underground tanks, permitted underground storage tank facilities, or state contaminated site cleanup activities within a 1-mile radius of the area of analysis (SWRCB, 2010).

The Toxic Cleanup List (March 2010) is maintained by the SCEMD and contains an inventory of contaminated locations in Sacramento County. The Toxic Cleanup List was reviewed for locations that are currently contaminated with HTRW. The data search confirmed the information provided through Geotracker and did not reveal any additional records of active leaking underground tanks or contaminated site cleanup activities within a 1-mile radius of the area of analysis (Sacramento County, 2010b).

3.10.2.2 REGIONAL GROUNDWATER CONTAMINATION

Due to groundwater contamination issues, the USEPA has designated two Federal Superfund sites in the area likely to affect local ecosystems or people. These sites include Aerojet (including the IRCTS) and the former MAFB. Regulated cleanup activities are underway on both sites (City of Rancho Cordova, 2006).

The Sacramento County Kiefer Landfill and the White Rock Road North Dump site are located southwest and northeast of the area of analysis, respectively. Both of these locations are located 1.5 to 2 miles from the area of analysis but are presented here because of their recognition in previous studies and proximity to the area of analysis. These facilities are described below.

INACTIVE RANCHO CORDOVA TEST SITE

The IRCTS is a 2,728-acre site north of the area of analysis and is owned by GenCorp Realty Investments, the parent company of Aerojet. West of the IRCTS is the 1,100-acre site (referred to as the Excluded Area) currently owned by Elliott Homes, Inc. Together the IRCTS and Excluded Area form the 3,828-acre future Rio del Oro development. The information regarding the IRCTS in the Rio del Oro Specific Plan Project Draft EIR/EIS is incorporated by reference and a brief summary is provided below (City of Rancho Cordova and USACE, 2006). The information regarding the IRCTS from the Rio del Oro EIR/EIS continues to be relevant and appropriate for this assessment. In 1961, Douglas Aircraft Company purchased the entire property from GenCorp Realty Investments and established a static rocket assembly and testing facility known as the Sacramento Test Center. In 1977, the Sacramento Test Center was deactivated and removed. The GenCorp Realty Investments reacquired the IRCTS from the Douglas

Aircraft Company (now known as the Boeing Company) in 1984 and used the site to discharge treated groundwater. In 1979, trichloroethylene (TCE) and other volatile organic compounds (VOCs) were detected in the groundwater on and surrounding the Aerojet site north of the IRCTS. Investigations indicated that part of the contaminant plume was migrating southwest toward the IRCTS. In addition, soil at the IRCTS has been shown to be contaminated with TCE, Freon, methylene chloride, kerosene, perchlorate, dioxins and furans, lead, and other metals.

The IRCTS was consequently organized into soil and groundwater operable units (OUs) to facilitate the remediation process. The 15 soil OUs within the IRCTS underwent remedial investigation and remediation. While some of the soil OUs received a clean closure for residential land use, other areas will require land use restrictions, and are continuing in the investigation and remediation process.

The IRCTS groundwater investigation revealed the groundwater contaminant source areas and the groundwater plume gradient toward the west-southwest (Figure 3.10-1). The TCE and perchlorate contaminants were detected in monitoring wells south of the IRCTS and on the former MAFB. A risk assessment identified TCE and perchlorate as the chemicals that would pose the principal threat to human health, if people are exposed to them. In 2002, groundwater treatment was initiated at the former MAFB, south of the former Administration Area, and the IRCTS. In 2005 and 2006, additional wells were placed along Douglas Road to address the southern IRCTS plume. The groundwater treatment program is continuing to expand to capture the groundwater contaminants (Department of Toxic Substances Control, 2007).

The Excluded Area acted as a buffer zone and was not used for aerospace testing or other industrial activities. Aerojet completed investigation of the Excluded Area and concluded the area was not a contaminant source. However, evidence of illegal dumping activities of trash and junk cars, empty drums, and oily/tarry soils were encountered at various locations around the perimeter of the readily accessible dredge tailings and a former ranch site. Following cleanup activities, the soil was remediated to residential land use. Groundwater beneath the area, which is between 100 and 150 feet below ground surface, remains contaminated with VOCs (primarily TCE) and perchlorate. To address DTSC concerns about the contaminated groundwater, Aerojet reserved all rights to water lying below the surface of the Excluded Area and granted easements to itself and DTSC for the installation of monitoring wells, extraction wells, and pipelines in order to address the remediation of the contaminated groundwater. These deed restrictions prohibit use of this groundwater for potable or irrigation water supply wells (City of Rancho Cordova and USACE, 2006).

AEROJET GENERAL CORPORATION

The Aerojet site covers approximately 5,900 acres and is located about 2 miles north of the area of analysis (Figure 3.10-1). Underlying the site are extensive 40 to 100 foot-deep dredge tailings, a remnant of past gold mining operations.

Since 1953, Aerojet has manufactured liquid and solid propellant rocket engines for military and commercial applications and formulated chemicals including rocket propellant agents, agricultural, pharmaceutical, and other industrial chemicals. Unknown quantities of hazardous waste including TCE, chemicals associated with rocket propellants, and chemical processing wastes were disposed on the site. Some wastes were disposed in surface impoundments, landfills, deep injection wells, leachate fields, and by open burning (City of Rancho Cordova, 2006).

In 1979, environmental investigations began at the site. In 1983, VOCs were found off-site in private wells and in the American River. Subsequently, groundwater contamination has been defined in a number of discrete plumes that move out radially to the north, west, and south from the site. The major

contaminants found both on-site and off-site are solvents including TCE, chloroform, and rocket fuel by-products (N-nitrosodimethylamine and perchlorate). Perchlorate, a component of solid rocket fuel, was found in drinking water wells off-site above health risk levels.

Groundwater is used extensively throughout the Rancho Cordova area to supply municipal, domestic, industrial and some irrigation water. Public and private drinking water supply wells have been contaminated and wells contaminated above response levels have been closed (Wallace-Kuhl, 1997).

The cleanup approach is to control groundwater contamination moving across the facility boundary with two OUs, then remediate soil and groundwater at source areas. The first groundwater action is underway. In August 2009, groundwater actions for the OU covering the groundwater containment on the north and south sides of Aerojet were presented to the public (USEPA, 2009a). Upon completion, a cumulative risk review will be completed to determine if any further action is required for the site as a whole (USEPA, 2009b).

Aerojet is operating six groundwater extraction and treatment (GET) systems at the site boundaries to prevent further off-site migration. In addition, Aerojet has conducted a number of removal actions for on-site soils, liquids, and sludges. In 1989, Aerojet was required to complete a comprehensive remedial investigation/feasibility study, maintain the current GET systems, monitor public water supplies for perchlorate, replacing water supplies impacted by perchlorate, provide annual updates to the monitoring plan for public water supplies, and reducing the discharge limit for N-nitrosodimethylamine at currently operating groundwater extraction and treatment facilities (City of Rancho Cordova, 2006).

In 2009, the TCE and perchlorate groundwater plume extends to about ¾-mile northwest of the area of analysis (Aerojet General Corporation, 2008; USEPA 2009a).

FORMER WHITE ROCK ROAD NORTH DUMP

Adjacent to Aerojet is the former White Rock Road North Dump bordered by White Rock Road to the south, Old White Rock Road to the north, and Grant Line Road to the east. The former dump is undergoing groundwater remediation. From 1958 to 1964, the former dump received miscellaneous refuse and included a solid waste area and a liquid waste pond. Soil and soil vapor samples from the dump contained VOCs, semi-VOCs, polychlorinated biphenyls, polycyclic aromatic hydrocarbons, and dioxin/furans. Groundwater samples contained VOCs and several metals (Wallace-Kuhl, 1997; County of Sacramento, 2008). The extent of the groundwater plume from Aerojet and the former dump extends to the west-southwest (Figure 3.10-1).

FORMER MATHER AIR FORCE BASE

MAFB was established in 1918 and is comprised of approximately 5,845 acres (Figure 3.10-1). Starting in 1941, its primary mission was to train navigators to operate advanced navigation, bombing, missile and electronic warfare systems. The base's industrial activities included vehicle, aircraft, and weapons maintenance. In September 1993, MAFB was decommissioned and officially closed through Department of Defense Base Closure and Realignment Commission.

A total of 89 potentially contaminated sites have since been identified. These sites include landfills, fire training areas, fuel spill areas, fuel storage areas, sewage treatment areas, firing ranges, drainage areas, and an area associated with the Air Force Base dry cleaning facility. Soil and groundwater are contaminated with VOCs, including TCE and perchloroethylene, and petroleum products.

Since the base closure in 1993, approximately 1,300 acres have been transferred under state oversight. The U.S. Department of Health and Human Services, Agency for Toxic Substances and Disease Registry, concluded the soil exposure situations at the former MAFB pose no apparent public health hazards.

Similar to the IRCTS, the base was divided into OUs to facilitate the environmental investigation and remediation process. The U.S. Air Force and community water suppliers have closed contaminated wells, installed treatment systems, and routinely monitor active wells. Regular monitoring includes collecting quarterly samples from on-base supply systems, off-base community supply systems, and private wells to the west and south, and analyzing the samples for VOCs and perchlorate. The U.S. Air Force also connected homes and businesses with private wells on the west to the community water supply system. In order to prevent current and future exposures to contaminants at levels of health concern in surface waters and sediment, the U.S. Air Force is completing remedial actions with oversight by the USEPA and the California Environmental Protection Agency (CalEPA) (City of Rancho Cordova, 2006).

In addition, groundwater is contaminated beneath portions of the former MAFB with five groundwater plumes identified. One of the groundwater plumes is in the Aircraft Control and Warning (AC&W) Disposal Area, located on the east-central part of the base between family housing and the aircraft alert apron. The AC&W groundwater plume contains TCE. Another groundwater plume, the Site 7 plume, begins at the southern edge of former MAFB and extends off-base; it is associated with the Site 7 Disposal Area. Landfills in the northeastern area of the base are believed to be the source of the Northeast plume that has low concentrations of chlorinated solvents (USEPA, 2006).

The eastern edge of the former MAFB is about 1 mile west of the area of analysis. The gradient of the groundwater plume appears to be west-southwest (Figure 3.10-1).

SACRAMENTO COUNTY KIEFER ROAD LANDFILL

Sacramento County Kiefer Boulevard Landfill is located over 2 miles from the nearest boundary of the area of analysis (Figure 3.10-1). The groundwater contaminants include VOCs including perchloroethylene, TCE, trichloroethane, 1, 2-Dichloroethene, benzene, and vinyl chloride (Wallace-Kuhl, 1997).

The VOC plume extends about 3/4 mile to the southwest from the Kiefer Landfill boundary and about 1.5 miles from the area of analysis (Figure 3.10-1). Groundwater remediation at this landfill is on-going (Regional Water Quality Control Board, 2010; Sacramento County, 2010a). An updated search for information gathered through the Geotracker database did not provide any additional information. There are no documents concerning this site available on Geotracker (SWRCB, 2010).

3.10.3 REGULATORY FRAMEWORK

There are numerous federal, state, and local laws and regulations pertaining to hazardous waste management applicable to remedial activities at the project site. Conformance with these laws and regulations is addressed through separate environmental review and regulatory oversight specifically associated with the remedial activities. These remedial activities are separate actions that are not part of the proposed Sunridge Specific Project Plan.

Federal, state, and local laws, regulations, and ordinances that would apply to construction and operational activities as part of the project are listed below.

3.10.3.1 FEDERAL PLANS, POLICIES, REGULATIONS, AND LAWS

RESOURCE CONSERVATION AND RECOVERY ACT

On July 26, 1982, the federal RCRA regulations were promulgated. The law regulates ongoing operations involving the generation, transportation, treatment, storage, and disposal of federal classifications of hazardous waste. The law was amended in 1984 by the Hazardous and Solid Waste Amendments, which established restrictions requiring the treatment of hazardous waste before disposal in landfills. Hazardous materials meeting the federal RCRA hazardous waste classification criteria, and that are no longer wanted would be classified as a RCRA hazardous waste and requirement management and disposal as a RCRA hazardous waste. The DTSC implements the RCRA hazardous waste program that has been authorized by USEPA.

COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION, AND LIABILITY ACT

Authorized by Title III of the Superfund Amendments and Reauthorization Act, the Emergency Planning and Community Right-to-Know Act (EPCRA) was enacted by Congress as the national legislation on community safety. This law is designed to help local communities protect public health, safety, and the environment from chemical hazards. To implement EPCRA, Congress requires each state to appoint a State Emergency Response Commission (SERC). The SERCs are required to divide their states into Emergency Planning Districts and to name a Local Emergency Planning Committee for each district.

NATIONAL EMISSIONS STANDARDS FOR HAZARDOUS AIR POLLUTANTS

The National Emissions Standards for Hazardous Air Pollutants (NESHAPs) for asbestos is applicable for the cleanup of certain kinds of asbestos waste. The federal regulations establish standards for inactive waste disposal sites for asbestos mills and manufacturing and fabricating operations, for active waste disposal sites, and for disposal of asbestos-containing waste from demolition and renovation operations (40 CFR §61.152).

WORKER SAFETY REQUIREMENTS

The U.S. Department of Labor, Occupational Safety and Health Administration (OSHA), is responsible at the federal level for ensuring worker safety. OSHA sets federal standards for implementation of workplace training, exposure limits, and safety procedures for the handling of hazardous substances (as well as other hazards). OSHA also establishes the minimum standards which each state must meet to establish a state health and safety program.

3.10.3.2 STATE PLANS, POLICIES, REGULATIONS, AND LAWS

CALIFORNIA HAZARDOUS WASTE LAWS

California received USEPA authorization to administer and implement the RCRA program. The DTSC implements the RCRA program in conjunction with the state non-RCRA (California classified hazardous waste) management program, which contains requirements more stringent than the federal RCRA program. The regulations address the minimum standards for the management of RCRA and non-RCRA generation, transportation, treatment, storage, and disposal. The regulatory responsibility for the hazardous waste program in Sacramento County is shared between the DTSC and the Sacramento County Environmental Management Department (SCEMD).

CALIFORNIA HAZARDOUS MATERIALS RELEASE RESPONSE PLANS AND INVENTORY

The California Hazardous Materials Release Response Plans and Inventory Act established minimum statewide standards for Hazardous Materials Business Plans (HMBPs). Businesses must prepare an HMBP if the business uses, handles, or stores a hazardous material (including hazardous waste).

Business facilities must retain an updated copy of the HMBP. The HMBP assures that appropriate actions are taken in the event of a hazardous material release and the response by emergency workers to a hazardous materials release at the facility. The HMBP consists of an inventory of the hazardous materials stored at the facility, a site map, an emergency response plan, and an employee hazardous material training program. The right-to-know requirements in the law allow public access to hazardous materials information stored and spilled into the environment within the community.

Facilities storing acutely hazardous materials may be required to develop a Risk Management and Prevention Program. The Risk Management and Prevention Program is a comprehensive hazards evaluation including the review of safety design systems, evaluation of work practices, system reliability, risk assessment, and preventive maintenance procedures. Facilities handling acutely hazardous materials in amounts in excess of federal threshold planning quantities for extremely hazardous substances must submit an additional inventory for the storage of acutely hazardous materials to the local implementing agency (i.e., SCEMD for Sacramento County).

CALIFORNIA OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION

The California Division of Occupational Safety and Health (Cal/OSHA), protects workers from safety hazards through its Occupational Safety and Health program. The Cal/OSHA standards for hazardous materials in the workplace require the implementation of workplace training, exposure limits, and safety procedures for the handling of hazardous substances. The hazard communication program requires that hazardous substance container labeling, Material Safety Data Sheets, be available to employees, as well as information on the hazards and safety training.

3.10.3.3 REGIONAL AND LOCAL PLANS, POLICIES, REGULATIONS, AND ORDINANCES

HAZARDOUS WASTE GENERATORS

Sacramento County promulgated an ordinance to incorporate, implement, and enforce the management of hazardous waste in Sacramento County and municipalities within the County (Sacramento County Code (SCC) Chap. 6.98). The provisions of the codes establish the authority for the regulation and permitting of facilities that generate, store or treat small quantities of hazardous wastes (both RCRA and non-RCRA hazardous waste).

HAZARDOUS MATERIALS BUSINESS PLANS AND THE CALIFORNIA ACCIDENTAL RELEASE PREVENTION PROGRAM

Sacramento County promulgated an ordinance to incorporate, implement, and enforce the state hazardous materials business plan standards and procedures regarding the reporting of the location, type, quantity, and health risks of hazardous materials handled, used, stored or disposed within the unincorporated area of Sacramento County, and within the incorporated territory of each municipality within the county (SCC Chap. 6.96). This ordinance also established the authority for the regulation and permitting of facilities.

WELLS AND PUMPS

Sacramento County promulgated an ordinance to protect the health, safety, and general welfare of the people of the County of Sacramento by ensuring that the groundwater of this County will not be polluted or contaminated by improper well construction, modification, repair, inactivation, or destruction, or by improper pump installation (SCC Chap. 6.28). The local well abandonment standards are designed to prevent groundwater contamination but can also serve to prevent human exposure to existing contaminated water.

CITY OF RANCHO CORDOVA GENERAL PLAN

The goals, policies, or actions from the Rancho Cordova General Plan relating to HTRW that are applicable to the Proposed Action and alternatives under consideration are provided below (City of Rancho Cordova, 2006):

GOAL NR.5 – Protect the quantity and quality of the City's water resources.

Policy NR.5.3 - Protect surface and ground water from major sources of pollution, including hazardous materials contamination and urban runoff.

Action NR.5.3.4 - Future land uses that are anticipated to utilize hazardous materials or waste shall be required to provide adequate containment facilities to ensure that surface water and groundwater resources are protected from accidental releases. This shall include double containment, levees to contain spills, and monitoring wells for underground storage tanks, as required by local, state, and federal standards. Future land uses that include on-site storage of hazardous materials and waste comply with all applicable local, state and federal regulations, including those regulating the use, storage, handling and disposal of hazardous materials.

Policy NR.5.4 - Prevent contamination of the groundwater table and surface water, and remedy existing contamination to the extent practicable.

Action NR.5.4.2 - Require clean-up of contaminated ground and surface water by current and/or past owners or polluters.

Policy NR.5.8 - The City shall require groundwater impact evaluations be conducted for the Grant Line West, Westborough, Aerojet, Glenborough, Mather and Jackson Planning Areas to determine whether urbanization of these areas would adversely impact groundwater remediation activities associated with Mather and Aerojet prior to the approval of large-scale development. Should an adverse impact be determined, a mitigation program shall be developed in consultation with applicable local, state, and federal agencies to ensure remediation activities are not impacted. This may include the provision of land areas for groundwater remediation facilities, installation/extension of necessary infrastructure, or other appropriate measures.

3.10.4 ENVIRONMENTAL CONSEQUENCES AND MITIGATION MEASURES

The section provides a discussion devoted largely to analysis of the direct and indirect environmental impacts of the alternatives. Historic uses and surreptitious disposal practices in the area of analysis may have resulted in soil and possibly groundwater contamination. Additionally, hazardous materials will be used during implementation of the alternatives. The management of hazardous materials in construction practices may result in environmental releases if improperly managed. Implementation of any of the

alternatives could result in exposure to hazardous waste for both construction workers and future residents.

3.10.4.1 THRESHOLDS OF SIGNIFICANCE

The alternatives are evaluated for impacts related to HTRW. The thresholds for determining the significance of impacts for this analysis are based on the potential worker and future residential exposure to HTRW. The thresholds encompass the factors taken into account under NEPA to determine the significance of an action in terms of its context and the intensity of its impacts. Under NEPA, significance may be adverse or beneficial (40 CFR §1508.27). The impacts from the alternatives under consideration were determined to be significant if either of the following criteria is met:

- Construction workers or residents are exposed to hazardous waste from existing soil and groundwater contamination; or,

- Construction workers or residents are exposed to hazardous waste during construction activities or normal uses of their properties.

3.10.4.2 ANALYSIS METHODOLOGY

Effects associated with hazardous, toxic and radioactive waste that could expose people as a result of project construction and operational activities were evaluated qualitatively based on expected construction practices; materials, locations, nearby activities, and duration of project construction and related activities; and a review of published literature including maps, books, and journal articles.

3.10.4.3 IMPACT ANALYSIS

IMPACT3.10-1 - Potential for construction workers and residents exposure to hazardous materials in soil from historic uses of the project site. *Project implementation may expose people to hazardous materials because the soil may have been contaminated with hazardous materials through historic agricultural usage.*

Proposed Project Alternative, Reduced Footprint Alternative and No Action Alternative – Since the 1950s, the predominant historical uses of the Sunridge Specific Plan Area have consisted of fallowing agricultural land, dry farming, and natural grass grazing land since the 1950s. These agricultural uses typically require little to no application of environmentally persistent pesticides. In 1991, soil samples were taken from the olive orchard for laboratory analysis and organic and metal contaminants were detected. The soil samples detected only dichlorodiphenyldichloroethylene, polychlorinated biphenyls, and inorganic lead below the regulatory health risk guidelines. According to the 1997 investigation, the use of potential persistent pesticides are uncommon for olive orchards. The orchard in question has been out of production for about 20 to 30 years. Since the time of the Preliminary Phase I PSA, there has been no change in the environmental conditions from agricultural usage. Because of the minimal levels of contaminants detected in the soil, and low probability of pesticides used on olive orchards, there is minimal potential for exposure to hazardous waste or persistent pesticides from soil at the area of analysis.

The potential for exposure to soil contaminants for both alternatives would therefore be minimal and is considered a **less than significant impact** to construction workers and future residents.

Mitigation Measure 3.10-1: No Mitigation Required.

IMPACT3.10-2 - Potential for future resident exposure to groundwater contaminants from existing water wells in the area. *Regional groundwater contamination exists that may expose future residents to contaminated groundwater through abandoned wells in the area of analysis.*

Proposed Project Alternative, Reduced Footprint Alternative and No Action Alternative – The IRCTS groundwater plume is in close proximity to the area of analysis. This plume may in the future result in groundwater contaminants beneath the area of analysis. The domestic water supply proposed for the area of analysis would not use groundwater from the area of analysis or from contaminant plumes and would not pose a threat to future residents. Consequently, direct contact via domestic water supplied to the area of analysis is not a concern. However, abandoned wells (permanently discontinued use of wells) were visually observed within the area of analysis and have not been destroyed. Unless the wells are destroyed properly, these abandoned wells expose future residents to groundwater contaminants. The potential for future residential exposure to groundwater contaminants for both action alternatives would therefore exist and be considered a **less than significant impact with mitigation** to future residents.

Mitigation Measure 3.10-2: Well Destruction.

The project applicants would destroy abandoned wells in accordance with the Sacramento County well destruction standards. These procedures are established to prevent a direct conduit for contaminants to enter the groundwater. As such, the well destruction process would also prevent future resident exposure to the contaminated groundwater.

IMPACT3.10-3 - Potential construction worker and residential exposure to hazardous waste from illegal disposal practices. *Hazardous materials may be within the area of analysis resulting from illegal waste disposal practices.*

Proposed Project Alternative, Reduced Footprint Alternative and No Action Alternative - Illegal disposal practices were observed during the Preliminary Phase I PSA. The household wastes and debris disposed of may have contained household hazardous wastes. Household hazardous wastes are unwanted household products commonly used in homes, and their illegal disposal would result in a short-term threat to the construction worker and a long-term threat to future residents. The potential for future residential exposure to household hazardous waste exists and would be considered a **less than significant impact with mitigation** to future residents.

Mitigation Measure 3.10-3: Debris Removal.

The project applicants would remove all debris, trash, rubble, refuse and abandoned, discarded and/or out-of-service items within the area of analysis from the affected properties and dispose of them in a permitted landfill, Sacramento County household hazardous waste center, or recycled off-site as appropriate.

IMPACT3.10-4 - Potential construction worker and residential exposure to hazardous wastes from demolition and construction. *Hazardous wastes may be encountered when existing buildings are demolished or if construction wastes are improperly disposed of.*

Proposed Project Alternative, Reduced Footprint Alternative and No Action Alternative - The Phase I PSA observations noted that some of the rural homes in the area of analysis were constructed prior to the 1960s. Regulated asbestos-containing material contains friable asbestos that can be reduced to powder by hand pressure when dry. Because asbestos was not banned until 1978, there is a potential that asbestos-

containing materials are in the existing buildings. Friable asbestos fibers released into the air may become inhaled and pose a threat to human health.

Additionally, construction projects commonly generate waste from the use of petroleum products, asphalt products, concrete curing compounds, pesticides, acids, paints, stains, solvents, wood preservatives, roofing tar, and other hazardous materials. Waste hazardous materials from demolition and development may be a short-term threat to the construction worker and a long-term threat to future residents if improperly contained and disposed on site. The potential for future residential exposure to existing demolition and construction contaminants would exist and be considered a **potentially significant impact** to future residents.

Mitigation Measure 3.10-4: Implement Hazardous Waste Best Management Practices.

The project applicants would take care to prevent creating friable asbestos during the demolition of existing buildings. Hazardous wastes generated during construction would be managed using best management practices. Hazardous wastes would be contained, labeled, and disposed at an off-site permitted facility in accordance with local, state, and Federal hazardous waste requirements to prevent exposure to construction workers and future residents. The potential for future residential exposure to household hazardous waste would exist but would be considered a **less than significant impact with mitigation** to future residents.

3.11 PUBLIC HEALTH AND SAFETY

This section describes the affected environment and regulatory framework of public health and safety as it relates to the project. This section also analyzes environmental consequences and the effects of mitigation on those consequences.

3.11.1 AREA OF ANALYSIS

The area of analysis for public health and safety is the Sunridge Properties.

3.11.2 AFFECTED ENVIRONMENT

This section describes the conditions in the area of analysis vicinity related to issues of public safety including potential flooding, wildfires, proximity to Mather Field, handling and transport of hazardous materials, construction safety hazards, and mosquito-borne diseases.

3.11.2.1 AFFECTED ENVIRONMENT

FLOOD ZONES

The City of Rancho Cordova is bounded to the northwest by the American River and to the southeast by the 100-year floodplain of the Cosumnes River. Both rivers are considered potential flood hazards (City of Rancho Cordova, 2006). The area of analysis is outside of the 100-year floodplain. The nearest natural surface water drainage, Morrison Creek, consists mostly of natural channels or small ditches and swales that may be inundated during large storm events.

WILDFIRES

Much of the area of analysis is currently undeveloped with agricultural lands and grassland habitat. For the area of analysis, the wildfire hazard is considered moderate, according to the California Fire Alliance Fire Planning and Mapping website (California Fire Alliance, 2009). The risk of wildfires in the area of analysis would be higher during the dry season, and the hazard is of most concern where open space meets residential development. Wildfires occur regularly in grassland habitats.

MATHER FIELD

Mather Field, the former Mather Air Force Base, is a full-service airport with 24-hour air traffic control and an 11,300 foot runway. It is due west of the Sunridge Properties. The runway for Mather Field lies in a southwest to northeast direction. The project site is not within the direct landing and take-off patterns for the airport; therefore, they are not at risk from potential, but unlikely, aircraft crashes related to landing patterns for the airport.

ON-SITE HAZARDOUS MATERIALS

Currently there is no on-site storage of hazardous materials. However, implementation of the alternatives would involve the storage, use, and transport of hazardous materials at the project site during construction activities. Additional analysis of hazardous material and hazardous waste is presented in Section 3.4 HTRW.

CONSTRUCTION SAFETY HAZARDS

Currently there is no construction within the project site. Project-related construction activities could result in potential safety hazards to construction workers.

HUMAN HEALTH HAZARDS ASSOCIATED WITH MOSQUITO-BORNE DISEASES

Construction workers or future residents could be exposed to an increased risk of mosquito-borne diseases. The mosquito population in the Sacramento Valley is most active in the spring and early summer. The female mosquito needs blood in order to produce eggs. Hosts that can supply blood include reptiles, amphibians, mammals, birds, and humans. All mosquito species are potential vectors of organisms that can cause disease to pets, domestic animals, wildlife, or humans.

The project sites are located within the Sacramento-Yolo Mosquito and Vector Control District (SYMVCD). The District employs technicians certified in pesticide usage and mosquito identification by the Vector-Borne Disease Section of the California Department of Public Health (CDPH). The SYMVCD solves mosquito problems using Integrated Pest Management techniques, which include surveillance and monitoring of mosquito breeding sources, reduction of mosquito breeding sites, community outreach and public education, and the use of chemical, microbial, and biological methods to control both mosquito larvae and adult mosquitoes (SYMVCD, 2009). The SYMVCD's mosquito control program is contained in the SYMVCD Mosquito and Mosquito-Borne Disease Management Plan (adopted 2003, amended 2005) (SYMVCD, 2009).

The SYMVCD applies chemicals at extremely low rates, as recommended by the U.S. Environmental Protection Agency (USEPA). Pesticides in use include biological controls, such as *Bacillus* sp.; methoprene, an insect growth regulator; and pyrethrins and pyrethroids, all of which have been evaluated and are regulated by USEPA. Biological larvicides include *Bacillus thuringiensis israelensis (Bti)* and *Bacillus sphaericus (B. sphaericus)*, which are naturally occurring bacteria. The USEPA affirms that the microbial pesticides *Bti* and *B. sphaericus* have undergone extensive testing before registration. They are essentially nontoxic to humans, so there are no concerns about human health effects with *Bti* or *B. sphaericus* when they are used according to label directions. The USEPA testing also indicates that there are no risks to wildlife, nontarget species, or the environment associated with these microbial pesticides, when used according to label directions (USEPA, 2006a). Only mosquitoes, black flies, and certain midges are susceptible to these bacteria. Other aquatic invertebrates and nontarget insects are unaffected. Larvicidal oils and monomolecular films are used to drown the mosquito larvae in their later aquatic stages, when they are not feeding, by forming a thin coating on the surface of the water. For example, methoprene is an insect growth regulator that is target-specific and is designed not to harm mammals, waterfowl, or beneficial predatory insects.

The USEPA also indicates that pyrethroids can be used for public health mosquito control programs without posing unreasonable risks to human health when applied according to the label. They also do not pose unreasonable risks to wildlife or the environment, although pyrethroids are toxic to fish and to bees. For that reason, USEPA has established specific precautions on the label to reduce such risks, including restrictions that prohibit the direct application of products to open water or within 100 feet of lakes, streams, rivers, or bays (USEPA, 2006b). The District uses pyrethrins and pyrethroids for its adult mosquito fogging program in and around populated areas. Pyrethrins are insecticides that are derived from an extract of chrysanthemum flowers, and pyrethroids are synthetic forms of pyrethrins. These are generally applied by truck-mounted or handheld foggers. These materials used to control both adult and larval mosquitoes are registered with USEPA, which evaluates safe use by assessing potential human health and environmental effects associated with use of each product (USEPA, 2006c).

3.11.3 REGULATORY FRAMEWORK

3.11.3.1 FEDERAL PLANS, POLICIES, REGULATIONS, AND LAWS

HAZARDOUS MATERIALS HANDLING

At the federal level, the principal agency regulating the generation, transport, and disposal of hazardous substances is USEPA, under the authority of the Resource Conservation and Recovery Act (RCRA). The RCRA established an all-encompassing federal regulatory program for hazardous substances that is administered by USEPA. Under the RCRA, USEPA regulates the generation, transportation, treatment, storage, and disposal of hazardous substances. The RCRA was amended in 1984 by the Hazardous and Solid Waste Amendments of 1984 (HSWA), which specifically prohibits the use of certain techniques for the disposal of various hazardous substances. The Federal Emergency Planning and Community Right-to-Know Act of 1986 imposed hazardous materials planning requirements to help protect local communities in the event of accidental release. USEPA has delegated much of the RCRA requirements to the California Department of Toxic Substances Control (DTSC).

WORKER SAFETY REQUIREMENTS

The U.S. Department of Labor, Occupational Safety and Health Administration (OSHA) is responsible at the Federal level for ensuring worker safety. The OSHA sets Federal standards for implementation of workplace training, exposure limits, and safety procedures for the handling of hazardous substances (as well as other hazards). The agency also establishes criteria by which each state can implement its own health and safety program.

3.11.3.2 STATE PLANS, POLICIES, REGULATIONS, AND LAWS

HAZARDOUS MATERIALS HANDLING

The California Hazardous Materials Release Response Plans and Inventory Law of 1985 (Business Plan Act) requires preparation of Hazardous Materials Business Plans and disclosure of hazardous-materials inventories. A Business Plan includes an inventory of hazardous materials handled, facility floor plans showing where hazardous materials are stored, an emergency response plan, and provisions for employee training in safety and emergency response procedures (California Health and Safety Code, Division 20, Chapter 6.95, Article 1). Statewide, DTSC has primary regulatory responsibility for management of hazardous materials, with delegation of authority to local jurisdictions that enter into agreements with the state. Local agencies, including the County Department of Environmental Management and the City, administer these laws and regulations.

WORKER SAFETY REQUIREMENTS

The California Occupational Safety and Health Administration (Cal-OSHA) assumes primary responsibility for developing and enforcing workplace safety regulations within California. The Cal-OSHA regulations pertaining to the use of hazardous materials in the workplace, as detailed in CCR Title 8, include requirements for safety training, availability of safety equipment, accident and illness prevention programs, hazardous substance exposure warnings, and preparation of emergency action and fire prevention plans. The agency enforces hazard communication program regulations that contain training and information requirements, including procedures for identifying and labeling hazardous substances, communicating hazard information related to hazardous substances and their handling, and preparation of health and safety plans to protect workers and employees at hazardous-waste sites. The

hazard communication program requires that Material Safety Data Sheets be available to employees and that employee information and training programs be documented.

EMERGENCY RESPONSE TO HAZARDOUS MATERIALS INCIDENTS

California has developed an Emergency Response Plan to coordinate emergency services provided by Federal, state, and local governments and private agencies. Response to hazardous-materials incidents is one part of this plan. The plan is managed by the Governor's Office of Emergency Services (OES), which coordinates the responses of other agencies including the California Environmental Protection Agency, California Highway Patrol, California Department of Fish and Game, Central Valley RWQCB, County Sheriff's Department, Rancho Cordova Police Department, and Sacramento Metropolitan Fire District (SMFD).

HAZARDOUS MATERIALS TRANSPORT

The U.S. Department of Transportation regulates transportation of hazardous materials between states. State agencies with primary responsibility for enforcing Federal and state regulations and responding to hazardous materials transportation emergencies are the California Highway Patrol and the California Department of Transportation. Together, these agencies determine container types used and license hazardous-materials haulers for transportation on public roads.

3.11.3.3 REGIONAL AND LOCAL PLANS, POLICIES, REGULATIONS, AND ORDINANCES

The County is responsible for enforcing the state regulations that govern hazardous-substance generators, hazardous-substance storage, and underground storage tanks (including inspections, enforcement, and removals).

RANCHO CORDOVA GENERAL PLAN SAFETY ELEMENT

The Safety Element addresses present and anticipated concerns about the well being of City residents, employees, and visitors. The goals, policies, and actions identify methods to minimize the potential risk of death, injuries, property damage, and economic losses resulting from fires, floods, earthquakes, landslides, and other hazards. The Element also addresses safety and hazards related to airport land use.

FIRE CODES AND GUIDELINES

The SMFD requires the availability of sufficient water flows and pressure for fire protection. The district requires fire sprinklers to be installed in all new commercial construction that exceeds 3,600 square feet and some residential properties exceeding 2,999 square feet. In addition, all signals installed on the project site must include traffic control devices that allow the district to activate the light, and control the flow of traffic, in order to maintain response times. Fire lanes must be installed and dedicated prior to project approval (Rancho Cordova, 2006).

3.11.4 ENVIRONMENTAL CONSEQUENCES AND MITIGATION MEASURES

3.11.4.1 THRESHOLDS OF SIGNIFICANCE

A public health hazard and safety impact is considered significant if implementation of the proposed project and alternatives under consideration would do any of the following:

- Create a public-health hazard through the use, production, generation, release, or disposal of materials that pose a hazard to human, animal, or plant populations;

- Expose construction workers to hazardous materials that would create health risks during construction; or create a health or potential health hazard;

- Be located on a hazardous materials site that is included on the list generated by Government Code §65962.5 (Cortese List);

- Create a safety hazard for people living or working at the project site as a result of a project located within an airport land use plan or within 2 miles of a public airport, or in the vicinity of a private airstrip; or

- Expose people to a significant risk of loss, injury, or death from exposure to wildland fires.

3.11.4.2 ANALYSIS METHODOLOGY

The impact assessment is based on a qualitative evaluation of the alternatives with the impact assessment criteria.

3.11.4.3 IMPACT ANALYSIS

IMPACT3.11-1 - Create a public health hazard through the use, production, generation, release, or disposal of materials that pose a hazard to human, animal, or plant populations. *Implementation of the alternatives would involve the storage, use, and transport of hazardous materials at the project site during construction activities.*

Proposed Project Alternative and Reduced Footprint Alternative - Development of the project site for residential uses would involve the storage, use, and transport of hazardous materials (e.g., asphalt, fuel, lubricants, and solvents) during construction activities. Direct impacts include those that could result from the use and transport of hazardous materials during construction activities. 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. The project applicant(s), builders, contractors, and others would be required to use, store, and transport hazardous materials in compliance with federal, state, and local regulations during project construction. 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, and disposal of hazardous materials would occur with project implementation. This **direct** impact is considered **less than significant** and **no indirect** impacts would occur for both alternatives.

No Action Alternative – Fewer houses would be built under the No Action Alternative, but hazardous materials would be used in the same manner as under the Proposed Project Alternative and Reduced Footprint Alternative and thus this **direct** impact is also considered **less than significant. No indirect** impacts would occur.

Mitigation Measure 3.11-1: No mitigation is required.

IMPACT3.11-2 - Potential safety hazards from construction activities. *Ongoing project related construction activities could result in potential safety hazards to construction workers.*

Proposed Project Alternative and Reduced Footprint Alternative - Construction would require grading of the project sites and construction of new homes, utility relocations and installations, and roadway construction. Fenced construction staging areas would be established during each phase of project development and would be used for storage of vehicles, equipment, materials, fuels, lubricants, and solvents.

Even with the planned precautions listed above, construction activities could result in hazards to workers during construction. Temporary potential safety hazards associated with construction activities would be considered a **significant, direct impact** under both alternatives. **No indirect** impacts would occur.

No Action Alternative - Fewer houses would be built under the No Action Alternative, but construction activities could still result in hazards to workers during construction. Temporary potential safety hazards associated with construction activities would be considered a **significant, direct impact**. **No indirect** impacts would occur.

Mitigation Measure 3.11-2: The construction contractors would be required to follow all Cal-OSHA safety requirements related to work practices and handling of hazardous materials. Adherence to the OSHA regulations would reduce safety hazard incidents and the impact would be less than significant with mitigation.

IMPACT3.11-3 - Human health hazards associated with mosquito-borne diseases. *Construction workers and/or future residents could be exposed to an increased risk of mosquito-borne diseases.*

Proposed Project Alternative and Reduced Footprint Alternative - While the project sites are located within the SYMVCD and subject to district regulations, the City also requires that wetland mosquito management guidelines be incorporated into the design of water retention structures, drainage ditches, and swales to reduce the potential for mosquito-borne disease transmission. Wetland features that would remain on the project sites currently do not have mosquito management guidelines. Although the mosquito controls applied by the SYMVCD are considered to be appropriate and safe for human exposure, the project could result in a new risk of adverse health effects associated with vector-borne diseases or hazards associated with vector control, because new water-related sources of mosquito breeding habitat would be created, and the project currently does not have wetland mosquito management guidelines. Therefore, implementation of the Proposed Alternative or the Reduced Footprint Alternative would have a **significant, direct** impact on human health related to mosquito-borne diseases. **No indirect** impacts would occur.

No Action Alternative – Under the No Action Alternative, fewer houses would be built than under the Proposed Project Alternative and Reduced Footprint Alternative, however, construction workers and/or future residents could be exposed to a greater increased risk of mosquito-borne diseases since fewer wetlands would be filled within the vicinity of the houses under this alternative. Therefore, implementation of the No Action Alternative would also have a **significant**, **direct** impact on human health related to mosquito-borne diseases. **No indirect** impacts would occur.

Mitigation Measure 3.11-3: Mosquito Control: Adherence to SYMVCD rules for vector control would minimize any risks due to vector borne diseases, and reduce the impact to less than significant with mitigation.

IMPACT3.11-4 - Located on a hazardous materials site that is included on the list generated by Government Code §65962.5 (Cortese List).

Proposed Project Alternative, Reduced Footprint Alternative and No Action Alternative - The project site is not located within a hazardous materials area as listed by this government code. Therefore, there is **no direct or indirect impact** based on this criterion.

Mitigation Measure 3.11-4: No mitigation is required.

IMPACT3.11-5 - Create a safety hazard for people living or working at the project sites as a result of a project located within an airport land use plan, located within 2 miles of a public airport, or located in the vicinity of a private airstrip.

Proposed Project Alternative, Reduced Footprint Alternative and No Action Alternative -The project site is not located within the direct take-off or landing pattern of aircraft associated with Mather Field. Therefore, there is not an aircraft safety risk and **no direct or indirect impact** based on this criterion.

Mitigation Measure 3.11-5: No mitigation is required.

IMPACT3.11-6 - Expose people to a significance risk of loss, injury, or death from exposure to wildland fires.

Proposed Project Alternative, Reduced Footprint Alternative and No Action Alternative - The conversion of the land from grassland to urban landscape coupled with the widening of roadways acting as firebreaks would significantly reduce any potential for wildland fires. Therefore, there would be **no direct or indirect impacts** based on this criterion.

Mitigation Measure 3.11-6: No mitigation is required.

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3.12 ENVIRONMENTAL JUSTICE

This section addresses the potential for environmental justice concerns that could result from disproportionately high and adverse human health or environmental effects on minority or low-income populations from the project alternatives. According to the Federal Council on Environmental Quality (CEQ) guidelines for environmental justice analyses, minority populations should be identified where the minority population of the affected area exceeds 50%, or the minority population percentage of the affected area is meaningfully greater than the minority population percentage of the general population. Low income populations should be identified based on poverty thresholds defined by the U.S. Census Bureau (CEQ, 1997).

Environmental justice is defined by the USEPA Office of Environmental Justice as "the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies." Fair treatment means that "no group of people, including racial, ethnic, or socioeconomic group shall bear a disproportionate share of negative environmental consequences resulting from industrial, municipal, and commercial operations or the execution of federal, state, local, and tribal programs and policies." Analysis of effects of projects on environmental justice is required by the National Environmental Policy Act (NEPA).

3.12.1 AREA OF ANALYSIS

The analysis area for environmental justice includes Sacramento County and the City of Rancho Cordova. For the purposes of an environmental justice screening, race, ethnic origin, and poverty status were obtained for all of the City; part of the County of Sacramento; and all or part of the unincorporated communities of Carmichael, Fair Oaks, Gold River, La Riviera, Rosemont, Arden-Arcade, and North Highlands. These cities and unincorporated community boundaries represent a 6-mile radius surrounding the project sites, which is the area that is appropriate for consideration pursuant to USEPA Guidelines.

3.12.2 AFFECTED ENVIRONMENT

3.12.2.1 SACRAMENTO COUNTY

From 2005-2007, Sacramento County had a total population of 1.4 million. Approximately 19% of the County's population was Hispanic or Latino, 14% was Asian, 11% was black or African-American, and 64% of the population was white (Census Bureau, 2008a). Table 3.12-1 presents these demographics.

Table 3.12-1 Sacramento County Demographics, 2005-2007		
Demographics	**Number**	**Percent**
Total Population	1,373,773	100.0%
Hispanic or Latino (of any race)	263,610	19.2%
Not Hispanic or Latino	1,110,163	80.8%
White	842,858	64.1%
Black or African American	138,501	10.5%
American Indian or Alaska Native	12,680	1.0%
Asian	184,209	14.0%
Native Hawaiian or other Pacific Islander	10,731	0.8%
Some other Race	126,769	9.6%
Two or more Races	58,025	4.2%
Source: U.S. Census Bureau American Community Survey, 2008a		

Approximately 30% of households earned less than $35,000 from 2005-2007. Median household income was $55,822 and per capita income was $26,405. Approximately 9% of families and 13% of individuals were below the poverty level (U.S. Census Bureau, 2008a). The U.S. Census Bureau defines poverty thresholds (levels of income) for people of various family, individual, and age characteristics. In 2006, the average poverty threshold for an individual was an annual income of or below $10,294 and $16,079 for a family of three. Table 3.12-2 provides the income and poverty status data for Sacramento County.

Table 3.12-2 Sacramento County Income and Poverty Status		
Income and Poverty Status (2007)	**Number**	**Percent**
Households	500,777	100.0%
Less than $10,000	25,682	5.1%
$10,000 to $14,999	26,754	5.3%
$15,000 to $24,999	49,756	9.9%
$25,000 to $34,999	49,914	10.0%
$35,000 to $49,999	72,862	14.5%
$50,000 to $74,999	97,351	19.4%
$75,000 to $99,999	70,702	14.1%
$100,000 to $149,000	69,619	13.9%
$150,000 to $199,999	22,741	4.5%
Greater than $200,000	15,396	3.1%
Median Household Income ($)	$55,822	--
Median Family Income ($)	$64,461	--
Per Capita Income ($)	$26,405	--
Poverty Status – Families	--	9.3%
Poverty Status – Individuals	--	12.5%
Source: U.S. Census Bureau American Community Survey, 2008a		

3.12.2.2 CITY OF RANCHO CORDOVA

From 2005-2007, the City's population was 58,000. About 19% of the population was Hispanic, 11% was Asian, 10% was black or African-American, and 68% was white (U.S. Census Bureau, 2008b). Table 3.12-3 provides the demographics for the City.

Table 3.12-3 Rancho Cordova Demographics, 2005-2007		
Demographics	**Number**	**Percent**
Total Population	57,799	100%
Hispanic or Latino (of any race)	11,144	19.3%
Not Hispanic or Latino	46,655	80.7%
Demographics	**Number**	**Percent**
White	37,817	68.20%
Black or African American	5,659	10.20%
American Indian or Alaska Native	680	1.20%
Asian	6,027	10.90%
Native Hawaiian or other Pacific Islander	87	0.20%
Some other Race	5,204	9.40%
Two or more Races	2,325	4.00%
Source: U.S. Census Bureau American Community Survey, 2008b		

Approximately 38% of households earned less than $35,000 in 2007. Median household income was $45,472 and per capita income was $22,707. Approximately 13% of families and 17% of individuals were below the poverty level (U.S. Census Bureau, 2008b). Table 3.12-4 provides the income and poverty status for the City.

Table 3.12-4 Rancho Cordova Income and Poverty Status		
Income and Poverty Status (2007)	**Number**	**Percent**
Households	21,801	100%
Less than $10,000	1,152	5.3%
$10,000 to $14,999	1,237	5.7%
$15,000 to $24,999	2,941	13.5%
$25,000 to $34,999	3,030	13.9%
$35,000 to $49,999	3,370	15.5%
$50,000 to $74,999	3,969	18.2%
$75,000 to $99,999	2,553	11.7%
$100,000 to $149,000	2,639	12.1%
$150,000 to $199,999	673	3.1%
Greater than $200,000	237	1.1%
Median Household Income ($)	$45,472	--
Median Family Income ($)	$53,776	--
Per Capita Income ($)	$22,707	--
Poverty Status – Families	--	13.4%
Poverty Status – Individuals	--	17.2%
Source: U.S. Census Bureau American Community Survey, 2008b		

3.12.3 REGULATORY FRAMEWORK

3.12.3.1 FEDERAL LAWS, REGULATIONS, POLICIES, AND PLANS

The 1994 Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, requires all Federal agencies to conduct "programs, policies, and activities that substantially affect human health or the environment, in a manner that ensures that such programs, policies, and activities do not have the effect of excluding persons (including populations) from participation in, denying persons (including populations) the benefits of, or subjecting persons (including

populations) to discrimination under, such programs, policies, and activities, because of their race, color, or national origin." Section 1-101 of the Order requires Federal agencies to identify and address "disproportionately high and adverse human health or environmental effects" of programs on minority and low-income populations (Executive Order, 1994).

The purpose of Executive Order 12898, "Federal Actions to Address Environmental Justice in Minority and Low Income Populations" (1994), is to identify and address the disproportionate placement of adverse environmental, economic, social, or health impacts from federal actions and policies on minority and/or low-income communities. This order requires that planners take into account impacts on minority or low-income populations when they prepare environmental and socioeconomic analyses of projects or programs that are proposed, funded, or licensed by federal agencies.

Executive Order 12898, signed by President Clinton on February 11, 1994, requires the following:

> *To the greatest extent practicable and permitted by law…each Federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations. (Section 1-101)*
>
> *Each Federal agency shall conduct its programs, policies, and activities that substantially affect human health or the environment, in a manner that ensures that such programs, policies, and activities do not have the effect of excluding persons (including populations) from participation in, denying persons (including populations) the benefits of, or subjecting persons (including populations) to discrimination under, such programs, policies, and activities, because of their race, color, or national origin. (Section 2-2)*
>
> *Each Federal agency shall work to ensure that public documents, notices, and hearings relating to human health or the environment are concise, understandable, and readily accessible to the public. (Section 5-5[c]).*

In addition, the presidential memorandum accompanying the Executive Order states that "each Federal Agency shall analyze the environmental effects, including human health, economic and social effects, of Federal actions, including effects on minority communities and low-income communities, when such analysis is required by the NEPA [National Environmental Policy Act] of 1969."

Two documents provide some measure of guidance to agencies required to implement the Executive Order. The first is Environmental Justice Guidance under the National Environmental Policy Act, published by the CEQ. The second document, Final Guidance for Incorporating Environmental Justice Concerns (published in USEPA's NEPA Compliance Analysis), serves as a guide for incorporating environmental justice goals into preparation of environmental impact statements under NEPA. These documents provide specific guidelines for determining whether there are any environmental justice issues associated with a proposed federal project.

3.12.3.2 STATE LAWS, REGULATIONS, POLICIES, AND PLANS

California law defines environmental justice as the "fair treatment of people of all races, cultures, and incomes with respect to the development, adoption, implementation, and enforcement of environmental laws, regulations, and policies," in Government Code §65040.12(e). Government Code §65040.12(a) designates the Governor's Office of Planning and Research (OPR) as the coordinating agency in state government for environmental justice programs and requires OPR to develop guidelines for incorporating environmental justice into general plans.

There are no state plans, policies, regulations, or laws related to environmental justice that are applicable to the proposed project or alternatives under consideration. However, Senate Bill (SB) 115 (Solis, Chapter 690, Statutes of 1999) defined environmental justice in statute and established the OPR as the coordinating agency for state environmental justice programs (Government Code §65040.12). The senate bill further required the California Environmental Protection Agency (Cal-EPA) to develop a model environmental justice mission statement for boards, departments, and offices within the agency by January 1, 2001 (Public Resources Code Sections 72000–72001).

In 2000, SB 89 (Escutia, Chapter 728, Statutes of 2000) was signed, which complemented SB 115 by requiring the creation of an environmental justice working group and an advisory group to assist Cal-EPA in developing an intra-agency environmental justice strategy (Public Resources Code Sections 72002–72003). Senate Bill 828 (Alarcón, Chapter 765, Statutes of 2001) added and modified due dates for the development of Cal-EPA's intra-agency environmental justice strategy and required each board, department, and office within Cal-EPA to identify and address, no later than January 1, 2004, any gaps in its existing programs, policies, and activities that may impede environmental justice (Public Resources Code Sections 71114–71115).

Assembly Bill (AB) 1553 (Keeley, Chapter 762, Statutes of 2001) required OPR to incorporate environmental justice considerations in the General Plan Guidelines. The bill specified that the guidelines should propose methods for local governments to address the following:

- Planning for the equitable distribution of new public facilities and services that increase and enhance community quality of life,

- Providing for the location of industrial facilities and uses that pose a significant hazard to human health and safety in a manner that seeks to avoid over-concentrating these uses in proximity to schools or residential dwellings,

- Providing for the location of new schools and residential dwellings in a manner that avoids proximity to industrial facilities and uses that pose a significant hazard to human health and safety, and

- Promoting more livable communities by expanding opportunities for transit-oriented development.

Although environmental justice is not a mandatory topic in the general plan, OPR is required to provide guidance to cities and counties for integrating environmental justice into their general plans (Government Code §65040.12(c)) (Governor's Office of Planning and Research 2003). The 2003 edition of the General Plan Guidelines included the contents required by AB 1553 (see pp. 8, 12, 20–27, 40, 114, 142, 144, and 260 of the revised Guidelines).

3.12.3.3 Regional and Local Laws, Regulations, Policies, and Plans

There are no regional or local plans, policies, regulations, or laws related to environmental justice that are applicable to the proposed project or alternatives under consideration.

3.12.4 Environmental Consequences and Mitigation Measures

This section provides analysis on environmental consequences associated with the proposed project and project alternatives as well as the effects of mitigation on the identified consequences.

3.12.4.1 THRESHOLDS OF SIGNIFICANCE

To prove a violation of federal environmental justice principles, the government must demonstrate that the proposed project or alternatives under consideration would cause impacts that are "disproportionately high and adverse," either directly, indirectly, or cumulatively. To make a finding that disproportionately high and adverse effects would likely fall on a minority or low-income population, three conditions must be met simultaneously: (1) there must be a minority or low-income population in the impact zone; (2) a high and adverse impact must exist; and (3) the impact must be disproportionately high and adverse on the minority or low-income population.

3.12.4.2 ANALYSIS METHODOLOGY

According to CEQ and USEPA guidelines established to assist federal and state agencies for developing strategies to examine this circumstance, the first step in conducting an environmental justice analysis is to define minority and low-income populations. Based on these guidelines, a minority population is present in a project analysis area if: (a) the minority population of the affected area exceeds 50%, or (b) the minority population percentage of the affected area is meaningfully greater than the minority population percentage in the general population or other appropriate unit of geographic analysis. By the same rule, a low-income population exists if the project analysis area is composed of 50% or more people living below the poverty threshold, as defined by the U.S. Census Bureau, or is significantly greater than the poverty percentage of the general population or other appropriate unit of geographic analysis. The second step of an environmental justice analysis requires a finding of a high and adverse impact. The CEQ guidance indicates that when determining whether the effects are high and adverse, agencies are to consider whether the risks or rates of impact "are significant (as employed by NEPA) or above generally accepted norms." The final step requires a finding that the impact on the minority or low-income population be disproportionately high and adverse. Although none of the published guidelines define the term "disproportionately high and adverse", CEQ includes a qualitative definition stating that an effect is disproportionate if it appreciably exceeds the risk or rate to the general population.

As defined in EPA's Final Guidance for Incorporating Environmental Justice Concerns, for the purposes of an environmental justice screening, the area of analysis is an approximately 6-mile radius surrounding the project site. To use a comparable distance in this analysis, data from the U.S. Census Bureau, 2000 Census, for race, ethnic origin, and poverty status were obtained. Census tract data for 2008 were unavailable, so Census 2000 data were used. All census tracts touching on the 6-mile radius were included in the analysis.

3.12.4.3 IMPACT ANALYSIS

IMPACT3.12-1 - Potential effects on low-income populations. *Project implementation could adversely affect low-income populations.*

Proposed Project Alternative, Reduced Footprint Alternative, and No Action Alternative - None of the three alternatives would result in environmental impacts that would disproportionately adversely effect low-income populations. According to the year 2000 census data (US Census Bureau 2000), there is one tract out of a total of 59 with a poverty population greater than 50% within 6 miles of the project site. Of the 59 census tracts, 21 have poverty populations greater than 10%. Seven have poverty populations between 20 and 30% of the tract population. Tract 8800 has the highest poverty rate, with 85.8% of the population below the poverty level in the year 2000. The boundary of Tract 8800 corresponds to Mather Field (formerly Mather AFB) and is located about 0.75 miles west of the project sites. Since the closure of the base in 1995, this area has undergone substantial redevelopment, including construction of 1,300 new

homes from 1999 to 2004, modernization and improvement of streets and infrastructure, commercial development, and the continued use of Mather Airport for general aviation and air cargo. Data from Mather Field indicate that by the year 2000, approximately 2,600 new jobs had been generated by redevelopment activities, and economic development is expected to continue in the future. Poverty rates for Tract 8800 are expected to improve substantially from redevelopment activities. In addition, implementation of the project would not result in a disproportionate effect or directly influence Tract 8800 because of its distance from this area. Therefore, project implementation would not cause a disproportionately high and adverse impact on low-income populations. This would be a **less-than-significant, direct** impact for all three alternatives. **No indirect** impacts would occur.

Mitigation Measure 3.12-1: No mitigation measures are required.

IMPACT3.12-2 - Potential effects on minority populations. *Project implementation could affect minority communities.*

Proposed Project Alternative, Reduced Footprint Alternative, and No Action Alternative - None of the project alternatives would create a disproportionate placement of adverse environmental impacts on minority communities. Analyzing the data across the census tracts in aggregate, the minority population present in the project analysis area is less than 50%. The Caucasian population is approximately 74%. Minority (non-Caucasian) populations comprise 26.3% of the combined populations of the 2000 census tract data (US Census Bureau, 2000). Therefore, project implementation would not cause a disproportionately high and adverse impact on minority populations. This would be a **less-than-significant, direct** impact for the three alternatives. **No indirect** impacts would occur.

Mitigation Measure 3.12-2: No mitigation measures are required.

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3.13 VISUAL RESOURCES

This section describes the affected environment, environmental consequences, and mitigation measures with respect to visual resources.

3.13.1 AREA OF ANALYSIS

The area of analysis is defined as the ground surface and any structures, plants or animals on the ground surface within the six Sunridge Properties, and the properties that border the project site.

3.13.2 AFFECTED ENVIRONMENT

The area of analysis has historically been used for dry land farming and grazing. The land is characterized by gently rolling terrain covered by annual grassland with scattered willow and cottonwood trees. Lower Morrison Creek and Upper Laguna Creek cross the sites from northeast to southwest. Vernal pools are present throughout. Major roadways lie along the perimeter of two sides of the area of analysis.

Land adjacent to the area of analysis is generally similar in terrain and uses, with the exception of large developments that have occurred primarily west of the area of analysis, specifically, northeast of Sunrise Boulevard and Kiefer Boulevard. Other nearby land use includes Blodgett Reservoir, which offers recreational fishing and hunting. A few industrial facilities are located within a few miles of the area of analysis. Noise, air quality, and odor issues related to the industrial facilities are described in the Section 3.4 Air Quality and Section 3.8 Noise.

Visual resources are the natural and artificial features of the landscape that can be seen and that contribute to the public's appreciative enjoyment of the environment. The impacts are generally defined in terms of a project's physical characteristics and potential visibility, and the extent to which the project's presence would change the perceived visual character and quality of the environment in which it would be located. Viewpoint 1 through Viewpoint 40 illustrate the locations and photographs of representative views of the area of analysis and bordering properties taken during a windshield survey conducted March 24, 2010.

Viewpoint 1 – Looking west toward Sunridge Village J from Canyonlands Drive: foreground includes the uncultivated farmland covered with non-native grasses and vegetation; background includes a housing development.

Viewpoint 2 – Looking southwest toward Sunridge Village J from Canyonlands Drive: foreground includes the uncultivated farmland covered with non-native grasses and vegetation; background includes non-native trees and shrubs.

Viewpoint 3 – Looking west toward Sunridge Village J from Borderlands Drive: foreground includes existing gravel road; background includes a large mound covered in grasses.

Viewpoint 4 – Looking west from Sunridge Village J: foreground includes uncultivated farmland covered with non-native grasses and vegetation; background includes a housing development.

Viewpoint 5 – Looking east toward Douglas 103 from Preserve Way: foreground and background include dirt mound covered in grasses.

Viewpoint 6 – Looking east toward Douglas 103 from Kibbie Lake Way: foreground includes uncultivated farmland of Douglas 103; background includes power lines and uncultivated farmland.

Viewpoint 7 – Looking southwest toward Douglas 103 from Douglas Road: foreground includes uncultivated farmland of Douglas 103; background includes housing development and uncultivated farmland.

Viewpoint 8 – Looking south toward Douglas 103 from Douglas Road: foreground includes uncultivated farmland of Douglas 103; background includes housing and uncultivated farmland.

Viewpoint 9 – Looking southwest toward Douglas 103 from Douglas Road: foreground includes uncultivated farmland of Douglas 103; background includes several trees on Grantline 108 and uncultivated farmland.

Viewpoint 10 – Looking south from Douglas Road toward Douglas 103: foreground includes Wakita Creek; background includes uncultivated farmland with trees.

Viewpoint 11 – Looking north from Douglas Road at property adjacent to Douglas 103: foreground includes uncultivated farmland and a vernal pool; background includes pastureland with grazing cows.

Viewpoint 12 – Looking north from Douglas Road at property adjacent to Douglas 103: foreground includes uncultivated farmland and Wakita Creek; background includes uncultivated farmland and Security Park.

Viewpoint 13 – Looking south toward Douglas 98 from Douglas Road; foreground includes uncultivated farmland of Douglas 98; background includes uncultivated farmland with trees.

Viewpoint 14 – Looking south toward Douglas 98 from Douglas Road; foreground includes uncultivated farmland with vernal pools of Douglas 98; background includes uncultivated farmland with trees.

Viewpoint 15 – Looking west toward Douglas 98 from Grant Line Road: foreground includes uncultivated farmland of Douglas 98; background includes uncultivated farmland with trees.

Viewpoint 16 – Looking north from Douglas Road at property adjacent to Douglas 98: foreground includes uncultivated farmland with wetlands; background includes uncultivated farmland.

Viewpoint 17 – Looking northeast from Douglas Road to property adjacent to Douglas 98; foreground includes uncultivated farmland with wetlands; background includes uncultivated farmland with trees.

Viewpoint 18 – Looking east from Grant Line Road to property adjacent to Douglas 98: foreground includes uncultivated farmland with wetlands; background includes uncultivated farmland with trees.

Viewpoint 19 – Looking east from Grant Line Road to property adjacent to Douglas 98: foreground includes uncultivated farmland with wetlands; background includes uncultivated farmland.

Viewpoint 20 – Looking east from Grant Line Road to property adjacent to Douglas 98: foreground includes uncultivated farmland; background includes pastureland with grazing cows.

Viewpoint 21 – Looking southeast toward Grantline 208 from Preserve Way: foreground includes grasses; background includes power lines and uncultivated farmland of Grantline 208.

Viewpoint 22 – Looking southeast toward Grantline 208 from Preserve Way: foreground includes vernal pools; background includes uncultivated farmland of Grantline 208.

Viewpoint 23 – Looking south toward Grantline 208 from Preserve Way: foreground includes naturally occurring wetlands; background includes power lines and a power plant.

Viewpoint 24 – Looking southeast toward Grantline 208 from Preserve Way: foreground includes naturally occurring wetlands; background includes power lines and a power plant.

Viewpoint 25 – Looking west toward Grantline 208 from Grant Line Road; foreground includes uncultivated farmland with wetlands of Grantline 208; background includes uncultivated farmland with trees.

Viewpoint 26 – Looking southwest toward Grantline 208 from Grant Line Road; foreground includes uncultivated farmland with wetlands of Grantline 208; background includes uncultivated farmland and existing farmhouse on Arista del Sol.

Viewpoint 27 – Looking southeast from Grant Line Road to property adjacent to Grantline 208; foreground includes uncultivated farmland with wetlands; background includes uncultivated farmland.

Viewpoint 28 – Looking west toward Arista del Sol from Grant Line Road; foreground includes uncultivated farmland of Arista del Sol; background includes existing farmhouse and barn of Arista del Sol.

Viewpoint 29– Looking northwest toward Arista del Sol from Grant Line Road: foreground includes uncultivated farmland; background includes existing farmhouse and barn.

Viewpoint 30 – Looking east from Grant Line Road to property adjacent to Arista del Sol: foreground includes uncultivated farmland; background includes uncultivated farmland with grazing cows.

Viewpoint 31 – Looking west toward Anatolia IV: foreground includes uncultivated farmland; background includes graded area with grasses and construction-induced ponding.

Viewpoint 32 – Looking north from/toward Anatolia IV: foreground includes soil stockpile with grasses; background includes graded land with grasses.

Viewpoint 33 – Looking southwest toward Sunridge Wetland Preserve from Rancho Cordova Parkway: foreground includes wetlands; background includes power lines and wetlands.

Viewpoint 34 – Looking northeast toward Sunridge Wetland Preserve from Rancho Cordova Parkway: foreground includes wetlands; background includes power lines and wetlands.

3.13.2.1 VISUAL CHARACTER OF THE SURROUNDING AREA

Land uses surrounding the area of analysis include limited amounts of residential and industrial development; most of the land is undeveloped. The general character of the surrounding area is described below and is presented through photographs contained above in Viewpoint 1 through Viewpoint 40.

- North-Douglas Road, industrial and residential land uses, and undeveloped rural lands are located north of the area of analysis. From the northern portion of the area of analysis, the Security Park with its 15-story concrete building is a prominent feature in the landscape, as are the metal transmission towers that form a line extending northwest of the area of analysis. Undeveloped, rural grassland makes up the largest part of the foreground views to the northeast, with scattered trees in the background. A few farmsteads and abandoned agricultural buildings (barns and sheds) along Jaeger Road contribute to the rural nature of this area. From roughly the midpoint of the area of analysis along Douglas Road, the most prominent feature of northern views is undeveloped grassland with mine dredging and a few former Aerojet structures. At full buildout, development associated with the Sunrise-Douglas Community Plan will fill the entire view from the northern part of the area of analysis.

- South-Undeveloped rural lands are located south of the area of analysis. From the southern portion of the area of analysis, Blodgett Reservoir is a prominent feature in the landscape. Undeveloped, rural grassland makes up the largest part of the foreground views to the south, with scattered trees in the background.

- East-Lands east of the area of analysis are undeveloped and are covered with annual grasses, shrubs, and scattered trees. The topography is gently rolling where dredge tailings have been deposited, but otherwise it is fairly level. Equipment and trucks associated with Teichert's aggregate mining operation on and to the east of the Rio del Oro property boundary are visible from a small area in the northeastern portion of the area of analysis. From the eastern part of the area of analysis looking east, where the land is flat and open, cars and trucks traveling on Grant Line Road and Douglas Road are clearly visible. On a clear day, the Sierra Nevada mountain range is visible in the background. Land immediately adjacent to the northeastern area of analysis boundary is scheduled to be developed as part of the Sunrise-Douglas Community Plan. When completed, these houses will be visible to motorists on Grant Line Road; they would block views of project-related development.

- West-Sunrise Boulevard and commercial and industrial development are located west of the area of analysis. Westward views from the northwestern portion of the area of analysis are composed entirely of several residential housing developments. Views from the southwestern portion of the area of analysis include uncultivated farmlands and the nearby Blodgett Reservoir.

3.13.3 REGULATORY FRAMEWORK

The following section describes the federal, state, and local rules and regulations applicable to the alternatives.

3.13.3.1 FEDERAL PLANS, POLICIES, REGULATIONS, AND LAWS

There are no federal plans, policies, regulations, or laws related to visual resources that are applicable to the alternatives under consideration.

3.13.3.2 STATE PLANS, POLICIES, REGULATIONS, AND LAWS

The California Department of Transportation (Caltrans) manages the California Scenic Highway Program. The goal of the program is to preserve and protect scenic highway corridors from changes that would affect the aesthetic value of the land adjacent to the highways. There are no state-designated scenic highways in the vicinity of the area of analysis.

3.13.3.3 REGIONAL AND LOCAL PLANS, POLICIES, REGULATIONS, AND ORDINANCES

There are no regional or local plans, policies, regulations, or laws related to visual resources that are applicable to the alternatives under consideration.

3.13.4 ENVIRONMENTAL CONSEQUENCES AND MITIGATION MEASURES

The section provides a discussion devoted largely to analysis of the direct and indirect environmental impacts of the alternatives

3.13.4.1 THRESHOLDS OF SIGNIFICANCE

A visual resources impact is considered significant if implementation of the alternatives under consideration would do any of the following:

- have a substantial adverse effect on a scenic vista;
- substantially damage scenic resources, including but not limited to trees, rock outcroppings, and historic buildings within a state scenic highway;
- substantially degrade the existing visual character or quality of the site and its surroundings; or
- create a new source of substantial light or glare that would adversely affect day or nighttime views in the area.

3.13.4.2 ANALYSIS METHODOLOGY

This visual impact analysis is based on field observations on March 24, 2010 and a review of maps and aerial photographs. This analysis also incorporated research on design measures for incorporating new development into surrounding land uses. Analysis of the alternative's impacts was based on evaluation of the changes to the existing visual resources that would result from implementation. In making a determination of the extent and implications of the visual changes, consideration was given to:

- specific changes in the visual composition, character, and specifically valued qualities of the affected environment;

- the visual context of the affected environment;

- the extent to which the affected environment contained places or features that have been designated in plans and policies for protection or special consideration; and

- the numbers of viewers, their activities, and the extent to which these activities are related to the aesthetic qualities affected by the project-related changes.

It should be noted that an assessment of visual quality is a subjective matter, and reasonable people can disagree as to whether alteration in the visual character of the area of analysis would be adverse or beneficial. For this analysis, a conservative approach was taken, and the potential for substantial change to the visual character of the area of analysis is generally considered a significant impact.

3.13.4.3 IMPACT ANALYSIS

IMPACT3.13-1 - Alteration of a scenic vista. *Implementation would result in the potential for construction of new homes and businesses to degrade the visual quality of a scenic vista.*

Proposed Project Alternative, Reduced Footprint Alternative and No Action Alternative – A scenic vista is generally considered a view of an area that has remarkable scenery or a resource that is indigenous to the area. The area of analysis itself does not provide any aesthetic resources that would be considered a scenic vista. The agricultural grazing lands, dredge tailings, and industrial development that make up the area of analysis do not provide scenery of remarkable character. Although the current land uses provide views of an agricultural landscape that is representative of the undeveloped areas of the region, the area of analysis does not contain resources that are exemplary of the agricultural history of the area. Views of the area of analysis are not unique in the region, and they are obscured by elevated features such as the industrial park to the north, berms and trees on the Aerojet property north of White Rock Road.

Background views of the Sierra Nevada and the Coast Range are currently available only on clear days to motorists traveling on Douglas Road. Views of the Sierra Nevada for motorists traveling east on White Rock Road are obscured by berms and trees on the Aerojet property on the north side of the road, and westward views of the Coast Range are obscured by development in the industrial park. Views of the Sierra Nevada and the Coast Range from the area of analysis are currently afforded only in the eastern portion where the land is still undeveloped. Although the Sierra Nevada and the Coast Range are visible in the background from certain parts of the area of analysis and to motorists traveling on Douglas Road these views would not qualify as a significant scenic vista because of the distance between the area of analysis and the mountain ranges. Views would be substantially the same under all alternatives. Thus, **direct** impacts related to alteration of scenic vista are considered **less than significant**. **No indirect** impacts would occur.

Mitigation Measure 3.13-1: No mitigation measure is required.

IMPACT3.13-2 – Damage to scenic resources within a state scenic highway. *Implementation could result in the potential for adverse changes to an outstanding scenic resources visible from a state scenic highway.*

Proposed Project Alternative, Reduced Footprint Alternative and No Action Alternative – A scenic resource within a state scenic highway is a resource that is noted for its outstanding scenic qualities and is visible from a state-designated scenic highway. There are no state-designated scenic highway segments adjacent

to the area of analysis. The closest county-designated scenic roadway is Scott Road, located approximately 6 miles to the east. The area of analysis is not visible from any state or county-designated scenic highways or roadways. Therefore, project implementation would not have any direct or indirect impacts on scenic resources within a state scenic highway. **No direct or indirect** impacts would occur.

Mitigation Measure 3.13-2: No mitigation measure is required.

IMPACT3.13-3 – Degradation of visual character. *Implementation could substantially alter the visual character of the area of analysis through conversion of an expanse of primarily undeveloped land to developed urban uses.*

Proposed Project Alternative, Reduced Footprint Alternative and No Action Alternative – The area of analysis consists of a 742-acre expanse of open space supporting grazing activities. All three alternatives would convert large areas of undeveloped land to urban development, associated infrastructure, and supporting uses (e.g., parks, open space). The remaining 154 acres would be preserved under the Proposed Project Alternative as part of the proposed wetland preserve. Under the Reduced Footprint Alternative, 286 acres of wetlands would be preserved, and under the No Action Alternative, 372 acres of wetlands would be avoided. Considering the relatively undisturbed and rural nature of land to the north, east, and west of the area of analysis, the alternatives, conversion from grazing land to urban development would result in a substantial alteration of the visual character of the area of analysis. The altered visual condition would be readily visible to motorists on adjacent roadways (i.e., Douglas Road and a portion of Grant Line Road), as well as existing and future residents in the Sunrise-Douglas Community Plan area, and employees at the nearby industrial parks.

Views of the area of analysis from Douglas Road and the Sunrise-Douglas Community Plan area would be substantially altered as agricultural grazing land is replaced by urban development. Motorists on Douglas Road, as well as early residents in the first phase of homes developed in the Anatolia subdivision, may perceive this as a substantial degradation of the visual character or quality of the site because one common type of viewshed found in the area (pastureland) would be replaced by another common local viewshed (urban). The presence of urban development on the area of analysis would be consistent with, and appear as a continuation of, development on the developing Anatolia site and future development in the Sunrise-Douglas Community Plan area to the south and the existing commercial/ industrial development to the west; however, the conversion of undeveloped land to urban development would be a substantial degradation of visual character as seen from Douglas Road and the first phase of the Anatolia housing development.

Reasonable people may consider the conversion of agricultural pastureland/undeveloped land to urban development on this scale (370 to 589 acres) as a loss of aesthetically pleasing and valuable viewshed. Agricultural pasturelands and rural areas can be considered a valuable aesthetic resource that is representative of the visual character of much of rural Sacramento County. In general, most people prefer to view vast expanses of undeveloped rural/pasturelands over urban development.

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 from project implementation are considered to be **direct and significant**. **No indirect impacts** would occur.

Mitigation Measure 3.13-3: Require development to conform to City General Plan Design Guidelines.

Proposed Project Alternative, Reduced Footprint Alternative and No Action Alternative – The project applicant(s) for all project phases will include design, architectural, development, and maintenance standards specified in the Sunridge Specific Plan that will ensure minimization of impacts on the existing visual character of the site. Through this process the project applicant(s) will ensure that urban development at the area of analysis is substantially consistent with the Design Guidelines adopted as part of the City General Plan. Before the approval of building permits, all structures and facilities will adhere to the City's design review process.

Implementation of Mitigation Measure 3.13-3 would partially reduce impacts related to the degradation of the local viewshed through conversion of undeveloped rural lands (i.e., rural setting) to a large-scale urban development project, but it would not reduce impacts to a less-than-significant level. Because of the scale and location of the area of analysis, there is no feasible mitigation available to address aesthetic impacts associated with the conversion of a large expanse of rural land to urban development. Although conformance of the specific plan with the City's design, architectural, development, and maintenance standards is included as mitigation to require development in the area of analysis to conform to certain aesthetic guidelines, there is no mechanism to allow implementation of the project while avoiding the conversion of the local viewshed from rural lands to large-scale urban development. Therefore, impacts would **remain significant and unavoidable**.

IMPACT3.13-4 – Temporary degradation of visual character for developed land uses caused by construction staging areas. *Implementation would likely involve phases of construction over a long period, due to the state of the housing market, and the large number of property owners. Construction activity would involve the temporary use of staging areas for construction equipment and materials, which would be visible to adjacent land uses that have already been developed.*

Proposed Project Alternative, Reduced Footprint Alternative and No Action Alternative – Implementation would likely involve several phases of similar types of construction under all alternatives. During that time, adjacent properties, including sensitive land uses such as residential housing, schools, and parks, would be occupied while construction is occurring in a different phase. Construction would involve the temporary use of fenced staging areas for construction equipment and materials. Although these staging areas would be located in disturbed areas, construction equipment and materials would be visible to developed land uses and to motorists on local roadways. Thus, these activities would have a **temporary direct, significant** impact on visual resources. **No indirect** impact would occur.

Mitigation Measure 3.13-4: Screen Construction Staging Areas.

Proposed Project Alternative, Reduced Footprint Alternative and No Action Alternative – Staging and material storage areas will be located as far away from sensitive land uses (i.e., residential areas, schools, parks) and/or nearby roadways as possible. Staging and material storage areas will be approved by the City before the approval of grading plans and building permits, and will be screened from adjacent occupied land uses in earlier development phases to the maximum extent practicable. Screens may include berms or fences. The screen design will be approved by the City to further reduce visual effects to the extent possible.

Implementation of Mitigation Measure 3.13-4 would reduce significant impacts associated with temporary visual-quality degradation for developed land uses from concurrent construction staging areas

(by providing visual screening). However, because screening may not always be feasible (i.e., projects covering a large area or tall buildings), this **temporary** impact is **significant and unavoidable.**

IMPACT3.13-5 – New light and glare effects. *Implementation would require lighting of new development, which could inadvertently cause increased light and glare effects.*

Proposed Project Alternative, Reduced Footprint Alternative and No Action Alternative – Light associated with urban development can result in spillover lighting and glare effects. Spillover lighting is artificial lighting that spills over onto adjacent properties and could cause an annoyance to neighboring residents by disturbing sleep patterns. Glare is intense light that shines directly, or is reflected off of a surface, into a person's eyes. Use of building materials such as reflective glass and polished surfaces can cause glare. During daylight hours, the amount of glare depends on the intensity and direction of sunlight. Glare is particularly acute at sunrise and sunset because of the low angle of the sun in the sky.

Under current conditions, the area of analysis has only one occupied farm house and barn that generate no significant sources of light or glare. Project development would require lighting of roadways and parks. In addition, nighttime lighting in the office/commercial areas, or the presence of reflective surfaces on buildings in this area (e.g., reflective window glazing), may result in light and glare shining primarily onto motorists on Douglas Road and Grant Line Road, which is a **less than significant direct** impact **with mitigation**. **No indirect** impacts would occur.

Mitigation Measure 3.13-5: Establish and require conformance to lighting standards and prepare and implement a lighting plan.

Proposed Project Alternative, Reduced Footprint Alternative and No Action Alternative – To reduce impacts associated with light and glare, the project will conform to the following guidelines:

- Meet the minimum City lighting standards for all project-related lighting. All lighting fixtures will be designed to be consistent with the Design Guidelines contained in the City General Plan.
- Shield or screen lighting fixtures to direct the light downward and prevent light spill on adjacent properties.
- Place and direct flood or area lighting needed for construction activities or for nighttime sporting activities to not disturb adjacent residential areas and passing motorists.
- Prohibit the use of harsh mercury vapor, low-pressure sodium, or fluorescent bulbs for public lighting in residential neighborhoods.
- Use appropriate building materials, lighting, and signage in the office/commercial areas to prevent light and glare from adversely affecting motorists on nearby roadways.
- Design exterior lighting as an integral part of the building and landscape design. Lighting fixtures will be architecturally consistent with the overall site design and character and will be consistent with the City's Design Guidelines.
- Establish standards for outdoor lighting to reduce high-intensity nighttime lighting and glare. Consideration will be given to design features, namely directional shielding for street lighting,

parking lot lighting, and other significant light sources, that will reduce effects of nighttime lighting. In addition, consideration will be given to the use of automatic shutoffs or motion sensors for lighting features to further reduce excess nighttime light. All nighttime lighting will be shielded to prevent the light from shining off of the surface intended to be illuminated.

A lighting plan will be submitted to the City for review and approval which will include the above elements. The lighting plan may be submitted concurrently with other improvement plans, and will be submitted before the installation of any lighting or the approval of building permits for all phases.

IMPACT3.13-6 – New skyglow effects. *Implementation would require lighting of new development, which could inadvertently cause increased skyglow effects.*

Proposed Project Alternative, Reduced Footprint Alternative and No Action Alternative - At night, artificial light can cause glare. Skyglow is a term for artificial lighting from urbanized uses that alters the rural landscape and, in sufficient quantity, lights up the nighttime sky, thus reducing the visibility of astronomical features such are stars.

Under current conditions, the area of analysis has only one small area of development associated with an operating farm. This area generates no significant source of skyglow into the night sky. However, a substantial increase in the amount of nighttime light and glare would result from the development of the project, potentially obscuring views of the stars, constellations, and other features of the night sky, and potentially affecting nearby motorists and future residents. This results in a **significant, direct impact**. **No indirect** impacts would occur.

Mitigation Measure 3.13-6: Implement Mitigation Measure 3.13-5.

Proposed Project Alternative, Reduced Footprint Alternative and No Action Alternative – Implementation of Mitigation Measure 3.13-5 above would partially reduce significant impacts associated with effects from skyglow, but would not reduce impacts to a less-than-significant level. Because of the scale and location of the area of analysis, screening or shielding light fixtures to direct light downward or the use of low-pressure sodium or other lighting would not reduce the effects of new skyglow on the night sky to a less-than-significant level; therefore, impacts would remain **significant and unavoidable.**

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3.14 HISTORIC AND CULTURAL RESOURCES

This section describes the affected environment, and regulatory setting for historic and cultural resources. This section also provides analysis of environmental consequences of the alternatives and the effects of mitigation on the identified consequences.

3.14.1 AREA OF ANALYSIS

Section 106 of the National Historic Preservation Act (NHPA) and the regulations in 36 CFR §800.4(a)(1) require the designation of an area of potential effect (APE) for cultural resources. The project boundary, as depicted in Figure 2-1 of this FEIS, has been used as the project APE. The six Sunridge Properties were considered together as one analysis area for purposes of the historic and cultural resources analyses in this document.

3.14.2 AFFECTED ENVIRONMENT

This section describes the affected environment for historic and cultural resources.

3.14.2.1 ARCHAEOLOGICAL AND ETHNOGRAPHIC SETTING

The earliest well-documented entry and spread of humans into California occurred at the beginning of the Paleo-Indian Period (10,000-6,000 years Before Present [B.P.]). Social units are thought to have been small and highly mobile. Known sites have been identified within the contexts of ancient pluvial lake shores and coastlines, as evidenced by the presence of such characteristic hunting implements as fluted projectile points and chipped stone crescent forms. Prehistoric adaptations over the ensuing centuries have been identified in the archaeological record by numerous researchers working in the area since the early 1900s, as summarized by Fredrickson (1974) and Moratto (1984). Because of the Central Valley's plentiful resources and temperate climate, the valley was well populated prehistorically and served as the location for some of the more substantial village sites known in California.

Lillard et al. (1939) and others conducted numerous studies that form the core of the current state of knowledge about early archaeology of the upper Central Valley. Little has been found archaeologically that dates to the Paleo-Indian or the Lower Archaic time periods (6,000-3,000 B.P.); however, archaeologists have recovered a great deal of data from sites occupied by the Middle Archaic Period (3,000-1,000 B.P.). The lack of sites from earlier periods may be a consequence of high sedimentation rates that have left the earliest sites deeply buried and inaccessible. During the Middle Archaic Period, the broad regional patterns of foraging subsistence strategies gave way to more intensive procurement practices. Subsistence economies were more diversified, possibly including the introduction of acorn processing technology. Human populations were growing and occupying more diverse settings. Permanent villages that were occupied throughout the year were established, primarily along major waterways. The onset of status distinctions and other indicators of growing sociopolitical complexity mark the Upper Archaic Period (1,000-500 B.P.). Exchange systems become more complex and formalized. Evidence of regular, sustained trade between groups was seen for the first time.

Several technological and social changes characterized the Emergent Period (1,800-500 B.P.). The bow and arrow were introduced, ultimately replacing the dart and atlatl (spear thrower). Territorial boundaries between groups became well established. It became increasingly common that distinctions in an individual's social status could be linked to acquired wealth. Exchange of goods between groups became more regularized with more goods, including raw materials, entering into the exchange networks. In the latter portion of this period (1,800-1,500 B.P.), exchange relations became highly regularized and

sophisticated. The clamshell disk bead became a monetary unit for exchange, and increasing quantities of goods moved greater distances. Specialists arose to govern various aspects of production and exchange.

Three time periods were well represented in archaeological assemblages in the general vicinity of the six project sites. These assemblages are discussed in detail in Moratto (1984) and summarized here. The Windmiller Pattern (3,000-1,000 B.P.) of archaeological assemblages included an increased emphasis on acorn use as well as a continuation of hunting and fishing activities. Ground and polished charmstones, twined basketry, baked-clay artifacts, and worked shell and bone were hallmarks of Windmiller culture. Widely ranging trade patterns brought goods in from the Coast Range and trans-Sierran sources as well as from closer trading partners. Distinctive burial practices identified with the Windmiller Pattern also appeared in the Sierra Nevada foothills, indicating possible seasonal migration into the Sierra Nevada. The Berkeley Pattern (1,000-500 B.P.) represented a greater reliance on acorns as a food source than was seen previously. Distinctive stone and shell artifacts distinguished this pattern from earlier or later cultural expressions. The Berkeley Pattern appears to have developed in the San Francisco Bay Area and was spread through the migration of Plains Miwok Indians. The Augustine Pattern (500 B.P. to Historic Era) may have been stimulated by the southern migration of Wintuan people from north of the Sacramento Valley. Their culture was marked by a population increase resulting from more intensive food procurement strategies, as well as by a marked change in burial practices, increased trade activities, and a well-defined ceramic technology.

Native Americans of the western Sierra Nevada foothills lived in relatively permanent settlements, visiting the higher reaches primarily during the summer months (Moratto, 1984). Permanent settlements ranged from a handful of people to several hundred, and tended to be situated near water, preferably on slightly raised ground. A major village might include dwellings, granaries, sweat houses, a headman's house, and dance house, or other ceremonial structures. The people of the villages would gather a wide variety of fruits, nuts, greens, bulbs, roots, and seeds, processing and storing many of them for winter. Fish, birds, deer, small game, and many other animals were hunted.

By virtue of its geographic position, the project site lies within the Nisenan (sometimes referred to as the Southern Maidu) prehistoric sphere of influence. The Nisenan belong to the Penutian linguistic family. Kroeber (1925) recognized three Nisenan dialects-Northern Hill Nisenan, Southern Hill Nisenan, and Valley Nisenan. The Nisenan territory included the drainages of the Yuba, Bear, and American Rivers, and the lower drainages of the Feather River. The Nisenan ranged from the Sierra Nevada crest to nearly sea level at the Sacramento River.

Significant Native American contact with Europeans came late in the vicinity of the six project sites. Limited encounters with explorers and trappers during the early 19th century left the Nisenan and Washoe relatively unaffected (Wilson and Towne 1978). In 1833, the Valley Nisenan were decimated by a malaria epidemic that did not spread to the Hill tribes. However, Captain John Sutter settled in Hill Nisenan territory in 1839, and the subsequent discovery of gold resulted in the widespread killing and persecution of the Nisenan. By 1860, disease, violence, forced relocation, and environmental destruction had greatly affected Nisenan populations and traditional systems (Moratto, 1984).

3.14.2.2 HISTORIC SETTING

Early European travelers through the region included Gabriel Moraga and a group of Spanish explorers in 1806–1808, and fur trappers and explorers in the 1820s. Jedediah Smith led a group of trappers along the edge of the foothills to the American River in search of a pass over the Sierra Nevada in 1826. Kit Carson and John C.Fremont crossed the mountains near Lake Tahoe and descended to Sutter's Fort traveling along the South Fork of the American River in 1844.

The Sunridge Properties lie just south of the southern boundary of the Rancho Rio de los Americanos Mexican land grant (Foothill Associates, 2004) where more than 35,500 acres was granted to William Leidesdorff and purchased by Joseph L. Folsom in 1848 after Leidesdorff's death (Hoover et al., 1990). Nearby White Rock Road was laid out in 1848 as a route between Sacramento and Placerville.

The Pony Express later used the route previously traveled by miners who were departing from Sacramento and heading for the Sierra Nevada foothills, along today's Folsom Boulevard. Several "way stations" appeared along this route through present-day Rancho Cordova. These stations were often named after proprietors or were indicative of their distance from Sacramento (e.g., Fifteen Mile House). The most famous of these was Mills Station, which was constructed in the early 1900s and subsequently used as a post office, a grocery store, and a library (FCUSD, 2005). The building was later restored by Sacramento Regional Transit; it is currently used as administrative offices at the light-rail station located near Mather Field Road and Folsom Boulevard.

Agriculture was the main industry in the region during the late 19th and the early 20th centuries. In fact, the City would later be named after the Cordova Vineyard, which was located in the center of the Rancho Rio de los Americanos land grant (Miller, 1990). The property was used primarily for wheat cultivation or grazing until the 1920s (Peak & Associates, 1999, 2005). By 1923, most of the property was owned by the Natomas Company. Gold dredging to depths of 80-110 feet took place over most of the project site from 1915 to 1962, leaving behind huge piles of tailings that filled the dredge lines and rose significantly above the landscape.

To the north of the area of analysis, the Natomas Company began selling parcels of dredged land to Aerojet beginning in 1950 (Peak & Associates, 1999, 2005). Aerojet subsequently leased approximately 1,700 acres to McDonnell Douglas Corporation (MDC), which initially constructed rocket-engine test stands, buildings, and other facilities in the Administration, Alpha, and DM-14 areas of the site. Other areas, including the Alpha Complex, Beta Complex, Kappa Complex, Gamma Complex, and Sigma Complex, were subsequently developed. These various facilities were used for assembly and testing of rocket systems through 1969 (Peak & Associates, 1999, 2005). Several parcels were leased to the National Aeronautics and Space Administration (NASA) from 1962 to 1972 for rocket engine tests. A more complete description of the static rocket test facilities and their history is provided in the Draft Historic Buildings and Structures Inventory (Weitze Research, 2004).

The U.S. Air Force constructed Mills Field, later renamed Mather Field, in 1918 to serve as a flight training school. After World War II, the base was the only aerial navigation school remaining for the U.S. military and its allies. A Strategic Air Command B-52 squadron was assigned to the air force base from 1958 through 1989, when the base was decommissioned under the Federal Base Realignment and Closure Act. The closure of the base prompted the County Board of Supervisors to examine the potential for converting the base to a public-use airport facility. The Air Force transferred the base to the County, and in May 1995, Mather Airport was opened. Other parts of the former military base were redeveloped for use as housing and a business park (Sacramento County Airport System, n.d.).

The name "Rancho Cordova" was formally applied to the area currently known as the City of Rancho Cordova in 1955 when a post office was established. Efforts by local residents to formally establish a city continued over the next 40 years, until Rancho Cordova was incorporated by voter approval in July 2003. At that time, the newly appointed city included more than 55,000 residents (City of Rancho Cordova, 2003).

3.14.2.3 ARCHAEOLOGICAL RESOURCES

According to the USACE Decision Document for the Anatolia IV Project (USACE, 2006), the Anatolia IV project site does not appear to contain any sites listed or eligible for listing on the National Register of Historic Places (NRHP). No previously recorded prehistoric or historic resources exist within the project site.

The DA Evaluation and Decision Document for the Sunridge Village J Project (USACE, 2006) states that a pedestrian survey was conducted on the Sunridge Village J property and that a single historic resource was identified. The USACE initiated consultation with the California State Historic Preservation Officer (SHPO) regarding this resource. The USACE received concurrence from the SHPO on April 7, 2006 stating that the resource was not eligible for listing on the NRHP.

According to the USACE Decision Document for the Grantline 208 Project (USACE, 2006), the Grantline 208 project site does not appear to contain any sites listed or eligible for listing on the NRHP. No previously recorded prehistoric or historic resources exist within the project site.

A Determination of Eligibility and Effect for the Douglas Road 98 Project Area (as cited in USACE, 2006) determined that the project site contains no sites listed or eligible for listing on the National Register of Historic Places or any recorded prehistoric or historic resources. The findings of the report were based on records search at the North Central Information Center of the California Historical Resources Information System Native American consultation and field survey of the project site.

According to the document *A Determination of Eligibility and Effects for the Douglas Road 103 Project Area* prepared by Peak and Associates (1997), the Douglas Road 103 project site does not contain any sites listed, or eligible for listing, on the NRHP. No previously recorded prehistoric or historic resources exist within the project site.

A Determination of Eligibility and Effect prepared for the Arista del Sol property (Foothill Associates, 2004) states that a records search was conducted at the North Central Information Center of the California Historical Resources Information System in November 2004. As a result of this records search, no sites were identified in or adjacent to the Arista del Sol parcel. A letter was sent to the Native American Heritage Commission requesting a check of the Sacred Lands files and no properties were identified as Sacred Lands. Letters were sent to individuals of the Ione Band of Miwok Indians, the Miwok Indian Community of the Wilton Rancheria, the Sierra Native Council, and the Wilton Rancheria. No replies were received as of the date of the Foothill Associates document. A field survey of the Arista del Sol property with a complete inspection of the project site was completed in November 2004, no prehistoric or historic resources were observed. The Determination of Eligibility and Effect recommended that with regard to Section 106 of the National Historic Preservation Act (NHPA), the agency seek concurrence from the SHPO with a finding of "no historic properties affected" per Section 800.4(d)(1) (Foothill Associates, 2004).

3.14.3 REGULATORY FRAMEWORK

3.14.3.1 FEDERAL PLANS, POLICIES, REGULATIONS, AND LAWS

NATIONAL HISTORIC PRESERVATION ACT

Section 470 of the NHPA directs Federal agencies to integrate historic preservation into all activities that either directly or indirectly involve land use decisions. The NHPA is administered by the National Park Service, the Advisory Council on Historic Preservation (ACHP), SHPO, and each Federal agency.

Implementing regulations promulgated by the Secretary of the Interior include 36 CFR Part 800: *Regulations of the Advisory Council on Historic Preservation Governing the NHPA Section 106 Review Process*.

Section 106 of the NHPA requires Federal agencies to take into consideration the potential effects of proposed undertakings on cultural resources listed on or determined potentially eligible for inclusion in the NRHP, and to allow the ACHP the opportunity to comment on the proposed undertaking. The Section 106 review process is usually carried out as part of a formal consultation with the SHPO, the ACHP, and other parties, such as Indian tribes, that have knowledge of, or a particular interest in, historic resources in the area of the undertaking.

This area of analysis is not located on Federal land and the proposed development is not Federally funded, but does require Federal action through a discretionary permit under Section 404 of the Clean Water Act (CWA); therefore, compliance with the requirements of Section 106 is required. Section 106 requirements apply to properties that are not formally determined eligible, but that are considered by the SHPO to meet eligibility requirements. The intensity of impacts on archaeological resources relates to the importance of the information they may contain and/or the extent of disturbance or degradation that may be caused by the impacts.

Determining the NRHP eligibility of a site or district is guided by the specific legal context of the site's significance as set out in 36 CFR Part 60.4 (see below). The NHPA authorizes the Secretary of the Interior to maintain and expand a National Register of districts, sites, buildings, structures, and objects of significance in American history, architecture, archaeology, engineering, and culture. A property may be eligible for listing in the NRHP if it meets criteria for evaluation as defined in 36 CFR §60.4, as follows:

- The quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association and:

  (a) that are associated with events that have made a significant contribution to the broad patterns of our history;

  (b) that are associated with the lives of persons significant in our past;

  (c) that embody the distinctive characteristics of a type, period or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

  (d) that have yielded, or may be likely to yield, information important in prehistory or history.

ARCHEOLOGICAL AND HISTORIC PRESERVATION ACT

The Archeological and Historic Preservation Act (AHPA) of 1974, 16 USC §469 et seq. provides for the preservation of cultural resources if an activity may cause irreparable loss or destruction of significant scientific, prehistoric, or archeological data. In accordance with the AHPA, the responsible official or the Secretary of the Interior is authorized to undertake data recovery and preservation activities.

NATIONAL NATURAL LANDMARKS

The Secretary of the Interior is authorized to designate areas as National Natural Landmarks for listing on the National Registry of Natural Landmarks pursuant to the Historic Act of 1935(16 USC 461 et seq.). In

conducting the environmental review of the proposed project, the USACE is required to consider the existence and location of natural landmarks, using information provided by the National Park Service pursuant to 36 CFR §62.6(d).

3.14.3.2 STATE PLANS, POLICIES, REGULATIONS, AND LAWS

The California State Office of Historic Preservation reviews state programs and projects pursuant to §5024 and 5024.5 of the California Public Resources Code. Federal and Federally-sponsored programs and projects are reviewed pursuant to Sections 106 and 110 of the NHPA. Section 106 of the NHPA, as amended, requires Federal agencies to consider the effects of proposed Federal undertakings on historic properties. NHPA's implementing regulations found in 36 CFR Part 800, require Federal agencies (and their designees, permittees, licensees, or grantees) to initiate consultation with the SHPO as part of the Section 106 review process.

3.14.3.3 REGIONAL AND LOCAL PLANS, POLICIES, REGULATIONS, AND ORDINANCES

RANCHO CORDOVA GENERAL PLAN

The City General Plan has goals and policies relating to cultural resources.

3.14.4 ENVIRONMENTAL CONSEQUENCES AND MITIGATION MEASURES

3.14.4.1 THRESHOLDS OF SIGNIFICANCE

Cultural resources impacts are considered significant if implementation of the proposed project or alternatives under consideration would disturb any human remains, including those interred outside of formal cemeteries.

Under the NHPA, if it is determined that historic properties may be affected by an undertaking, the agency proceeds with the Section 106 process, assessing adverse effects. The criteria of adverse effects are found in Section 800.5(a)(1) of the regulations of the NHPA. According to the criteria, an adverse effect occurs when the integrity of the historic property may be diminished by the undertaking through alteration of the characteristics that qualify the property for the NRHP. Such alteration can be caused directly as a result of the undertaking or be an indirect consequence. The criteria of adverse effect state:

> *An adverse effect is found when an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property's location, design, setting, materials workmanship, feeling, or association. Consideration shall be given to all qualifying characteristics of a historic property, including those that may have been identified subsequent to the original evaluation of the property's eligibility for the National Register. Adverse effects may include reasonably foreseeable effects caused by the undertaking that may occur later in time, be farther removed in distance or be cumulative.*

Adverse effects on historic properties include, but are not limited to:

- Physical destruction of or damage to all or part of the property;
- Alteration of a property, including restoration, rehabilitation, repair, maintenance, stabilization, hazardous material remediation, and provision of handicapped access, that is not consistent with

the Secretary of Interior's Standards for the Treatment of Historic Properties (36 CFR Part 68) and applicable guidelines;

- Removal of the property from its historic location;
- Change of the character of the property's use or of physical features within the property's setting that contribute to its historic significance;
- Introduction of visual, atmospheric, or audible elements that diminish the integrity of the property's significant historic features;
- Neglect of a property that causes its deterioration, except where such neglect and deterioration are recognized qualities of a property of religious and cultural significance to an Indian tribe or Native Hawaiian organization; and
- Transfer, lease, or sale of property out of Federal ownership or control without adequate and legally enforceable restrictions or conditions to ensure long-term preservation of the property's historic significance.

3.14.4.2 ANALYSIS METHODOLOGY

The methodology for analysis of potential impacts to cultural resources was based on a review of cultural resource studies conducted for the analysis area, identification of resources encountered and described in those reports, and a qualitative assessment of the likelihood of those resources being affected by the Proposed Project and alternatives. Several cultural resource studies have been performed for the area of analysis. These studies concluded that no cultural resource features eligible for the NRHP are present on that property and adjacent properties. Determination of requirements for archaeological resource protection will be included in any DA permit decision, should subsequent decisions be made.

3.14.4.3 IMPACT ANALYSIS

IMPACT3.14-1 - Loss of or damage to recorded cultural resource sites. *Construction activities during project implementation could result in the loss of known cultural resources.*

Proposed Project Alternative, Reduced Footprint Alternative and No Action Alternative – There are no recorded cultural resource sites located in the area of analysis, therefore **no direct or indirect** impacts would occur under the three alternatives.

Mitigation Measure 3.14-1: No mitigation measures are required.

IMPACT3.14-2 - Loss of or damage to historic sites, buildings, and structures. *Construction activities during project implementation could result in the loss of known historic sites, buildings, or structures.*

Proposed Project Alternative, Reduced Footprint Alternative and No Action Alternative – There are no known historic sites, buildings, or structures located on the project site, therefore **no direct or indirect** impacts would occur under the three alternatives.

Mitigation Measure 3.14-2: No mitigation measures are required.

IMPACT3.14-3 - Potential damage to undiscovered prehistoric sites or Native American burials. *Construction and other earthmoving activities during project implementation could result in damage to as-yet-unknown cultural resources, including prehistoric sites or Native American burials.*

Proposed Project Alternative, Reduced Footprint Alternative, and No Action Alternative – Undiscovered or unrecorded cultural resource sites may be uncovered by project-related construction activities. The potential exists for previously unidentified archaeological sites to be identified during preconstruction or construction-related ground-disturbing activities. If such resources were to represent "historical resources" or "unique achaeological resources" any destruction of these resources would be considered a significant impact. Therefore, impacts to as-yet-undiscovered cultural resources are considered **direct and significant** for the three alternatives. **No indirect impacts** would occur.

Mitigation Measure 3.14-3: Stop Potentially Damaging Work if Archaeological Sites or Human Remains are Uncovered During Construction

If archaeological sites are uncovered during construction, the project applicant(s) will retain a City-approved qualified professional archaeologist to provide on-site monitoring during construction activities in this area.

In accordance with the California Health and Safety Code, if human remains are uncovered during construction at the project site, work within 50 feet of the remains will be suspended immediately, and the City and the County Coroner will be notified immediately. If the remains are determined by the County Coroner to be Native American, the NAHC will be notified within 24 hours of that determination, and the guidelines of the NAHC will be adhered to in the treatment and disposition of the remains. Construction work in the vicinity of the remains will not resume until the mitigation is completed. Impacts to as-yet-undiscovered cultural resources are considered **less than significant with mitigation** for the three alternatives.

3.15 GEOLOGY AND SOILS

This section describes the affected environment, regulatory framework, and environmental consequences and mitigation measures with respect to geology and soils.

3.15.1 AREA OF ANALYSIS

For the purposes of evaluating geology and soils, the area of analysis is defined as the surface and ground under the six Sunridge Properties, and nearby geologic activities that may affect those six parcels.

3.15.2 AFFECTED ENVIRONMENT

PHYSIOGRAPHIC SETTING

The project site is located in the Sacramento Valley, approximately 3 miles south of the American River, 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 Range, and on the east by the Sierra Nevada and the Foothills Fault zone. Relatively few faults in the Great Valley have been active during the last 10,000 years. Most of the surface of the Great Valley is covered with Holocene and Pleistocene-age alluvium, composed primarily of sediments from the Sierra Nevada and the Coast Range that were carried by water and deposited on the valley floor.

TOPOGRAPHY

The area of analysis is located where the terrain slopes gently in a southwesterly direction with elevations ranging from 255 feet above mean sea level (msl) in the northeast to 115 feet msl in the southwest. The area of analysis consists predominantly of gently rolling hills interspersed with seasonal drainage courses. Hillside slopes range between 0% and 8% with an average slope across the area of analysis of 0.6% (County of Sacramento, 2001).

GEOLOGIC OVERVIEW

The area of analysis is located within a transitional geologic zone bounded by the Central Valley to the west and the Sierra Foothills to the east. The predominant geologic formations underlying the region in and around the area of analysis are shown in Figure 3.15-1. The predominant geologic formation within the area of analysis is Cenozoic Tertiary Mehrten Formation, consisting of andesitic conglomerate, sandstone, and breccia. The area north of the area of analysis is underlain by mostly Cenozoic Quaternary gravelly alluvial and glacial deposits, exposed at the surface as mine and dredge tailings.

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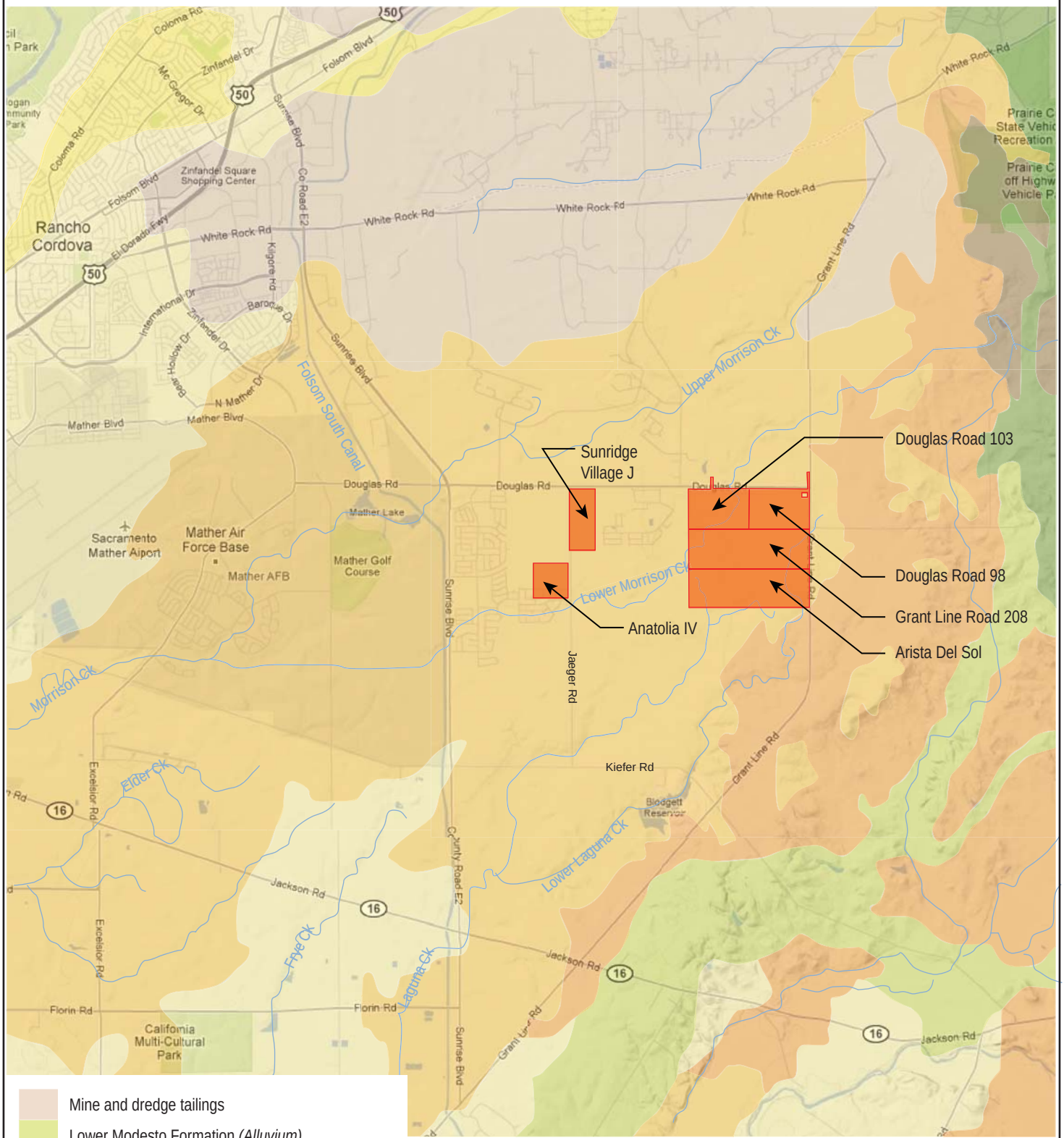

Source: Geologic Map of the Sacramento Quadrangle, 1981

Figure 3.15-1. Geologic Map

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REGIONAL SEISMICITY AND FAULT ZONES

With the exception of the Dunnigan Hills fault, located in the Woodland area, the Sacramento Valley has generally not been seismically active in the last 10,000 years. Faults closest to the area of analysis with known or estimated activity during the Holocene are generally located in the San Francisco Bay Area (Bay Area) at least 45 miles to the west and lie within the Coast Range geomorphic province (see Table 3.15-1).

Table 3.15-1
Faults Active in Holocene Time in the Vicinity of the Area of Analysis

Fault	Distance from area of analysis (miles)	Location
Dunnigan Hills	35	Sacramento Valley, Woodland
Great Valley Thrust Zone	45	Coast Range, western San Joaquin Valley
Green Valley	50	Coast Range, Bay Area
Concord	55	Coast Range, Bay Area
Clayton	55	Coast Range, Bay Area
Marsh Creek	60	Coast Range, Bay Area
Greenville	65	Coast Range, Bay Area

Sources: Harwood and Helley 1987, Jennings 1994

Potential seismic hazards resulting from a nearby moderate to major earthquake can generally be classified as primary and secondary. The primary effect is fault ground rupture, also called surface faulting. Common secondary seismic hazards include ground shaking, liquefaction, and subsidence. Each of these potential hazards is discussed below.

SURFACE FAULTING

Surface ground rupture along faults is generally limited to a linear zone a few meters wide. Because no active faults have been mapped across the area of analysis by the California Geological Survey or United States Geological Survey (USGS), nor is the area of analysis located within an Alquist-Priolo Earthquake Fault Zone, fault ground rupture does not represent a hazard at the area of analysis (California Geological Survey, 1999; Hart and Bryant, 1999).

SEISMIC GROUND SHAKING

Ground motion can be estimated by probabilistic methods at specified hazard levels. The intensity of ground shaking depends on the distance from the earthquake epicenter to the site, the magnitude of the earthquake and site soil conditions. The *Probabilistic Seismic Hazard Assessment for the State of California* (Petersen et al., 1996), published by USGS and the California Division of Mines and Geology (CDMG), identifies the seismic hazard based on a review of these characteristics and historical seismicity throughout California. The results of these studies suggest that there is a 10% to 20% probability that the peak horizontal acceleration experienced at the site would exceed 0.2 gravities in 50 years. Damage to a single-family dwelling typically begins at 0.2 gravities (Risk Prediction Initiative 1996, Rogers et al. 1996).

GROUND FAILURE/LIQUEFACTION

Liquefaction is a process by which water-saturated materials (including soil, sediment, and certain types of volcanic deposits) lose strength and may fail during strong ground shaking. Liquefaction is the transformation of a granular material from a solid state into a liquefied state as a consequence of increased pore-water pressure. This behavior is most commonly induced by strong ground shaking associated with earthquakes. In some cases, a complete loss of strength occurs and catastrophic ground failure may result. However, liquefaction may happen where only limited strains develop, and ground surface deformations are much less serious.

Because the area of analysis has a relatively deep groundwater table, soils at the area of analysis are relatively stable, and potential sources of seismic activity are a relatively long distance away, sediments underlying the area of analysis can be expected to have a low liquefaction potential.

SUBSIDENCE AND SETTLEMENT

Land surface subsidence can be induced by both natural phenomena and human activity. Natural phenomena include subsidence resulting from tectonic deformations and seismically induced settlements; soil subsidence because of consolidation, hydrocompaction, or rapid sedimentation; subsidence because of oxidation or dewatering of organically rich soils; and subsidence related to subsurface cavities. Subsidence related to human activity includes subsurface fluid or sediment withdrawal. Pumping of water for residential, commercial, and agricultural uses from subsurface water tables causes the greatest amount of subsidence in Sacramento County. According to the *County of Sacramento General Plan* (County of Sacramento, 1993) and the *Rancho Cordova General Plan,* the area of analysis is located within a potential groundwater basin subsidence area.

SOILS

Soils occurring within the area of analysis can be grouped into two categories based on general landscape and topography. There are two general categories of soils at the project site. These two categories are: "Nearly Level to Steep Soils on Hills and Filled Areas" and "Nearly Level to Hilly Soils on High Terraces and Hills." The two groups are described below.

Nearly Level to Steep Soils on Hills and Filled Areas - The soils in this group are very shallow to very deep and moderately well or well drained. These soils are underlain by weakly consolidated sediments or have cemented hardpan underlain by consolidated sediments. The moderately deep soils have a gravelly loam or fine sandy loam surface layer and a claypan. The very shallow and shallow soils are sandy loam or fine sandy loam. The map unit in this group that is found in the area of analysis is "Urban land-Xerarents-Fiddyment."

Nearly Level to Hilly Soils on high Terraces and Hills - The soils in this group are moderately deep to very deep and well or moderately well drained. They have a sandy clay loam or gravelly clay subsoil or a claypan. Some soils in this group are underlain by a cemented hardpan at a depth of 20 to 40 inches. The map unit in this group that is found in the area of analysis is "Redding-Corning-Red Bluff," which is moderately well drained soil that is moderately deep over a cemented hardpan and well drained.

Within the two main groups of soils, there are specific soil types present in the area of analysis (Figure 3.15-2). Table 3.15-2 provides a detailed summary of the physical and chemical characteristics of each soil type identified from the area of analysis. Soil characteristics are described below by map unit number.

3.15-2 Soils Map

WETLAND FEATURES

- Seasonal Wetland*/Drainage Swale
- Vernal Pool
- Seasonal Marsh
- Seep
- Ephemeral Drainage/Intermittent Drainage
- Pond*
- Ditch*

OTHER FEATURES

- 198
- 192
- 193

Data from Road Improvement projects not included.

Source:
Wetland data: Foothill Associates
Map: Arista Del Sol Biological Assessment Appendix B, Figure 5
Soils data: NRCS

N

0 500 1,000 2,000 Feet

FILE: \\Bcsac-nas01\GIS\USACE\USACE_Sunridge_EIS\ARCMAPS\WORKING\Figure 2.2 - No Development in Arista Del Sol Alternative.mxd

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Table 3.15- 2
Soil Mapping Unit Descriptions

Map[1]	Soil Series Name	Depth (inches)	USDA Texture	Shrink-Swell Potential	Perme-ability (in/hr)	Drainage	Erosion Hazard	Erosion Factors[2] K	Erosion Factors[2] T	Land Capability[3]	pH	Plasticity Index[4]
145	Fiddyment	0-8	Fine sandy loam	Low	0.6-2.0	Well drained	Moderate for excavation	0.37	2	Ive Nonirrigated Irrigated	5.6-7.3	NP-10
		8-15	Loam	Low	0.6-2.0			0.43			5.6-7.3	5-10
		15-28	Sandy clay loam	Moderate	<0.06			0.32			6.1-7.8	15-25
		28-40	Indurated	-	-			-			-	-
		40	Weathered bedrock	-	-			-			-	-
192	Red Bluff	0-8	Loam	Low	0.6-2.0	Well drained	Slight to Moderate	0.32	5	IIIe Nonirrigated	5.1-6.0	5-15
		25-Aug	Clay loam, gravelly clay loam	Moderate	0.2-0.6			0.24			5.1-6.5	10-20
		25-43	Clay loam, gravelly clay loam	Moderate	0.2-0.6			0.24			5.6-6.5	15-30
		43-68	Gravelly clay loam, very gravelly clay loam, very gravelly clay	Moderate	0.2-0.6			0.24			5.6-6.5	10-20
193	Red Bluff 45% Complex	0-8	Loam	Low	0.6-2.0	Well drained	Slight to Moderate	0.32	5	IIIe Nonirrigated	5.1-6.0	5-15
		25-Aug	Clay loam, gravelly clay loam	Moderate	0.2-0.6			0.24			5.1-6.5	10-20
		25-43	Clay loam, gravelly clay loam	Moderate	0.2-0.6			0.24			5.6-6.5	15-30
		43-68	Gravelly clay loam, very gravelly clay loam, very gravelly clay	Moderate	0.2-0.6			0.24			5.6-6.5	10-20
	Redding 40%	0-7	Gravelly loam	Low	0.6-2.0	Well drained	Slight to Moderate	0.32	5	VIIs Nonirrigated	5.6-6.5	5-15
		20-Jul	Gravelly loam, gravelly clay loam	Moderate	0.2-0.6			0.24			5.1-6.5	5-15
		20-28	Gravelly clay loam, gravelly clay	High	<0.06			0.25			5.6-6.5	15-30
		28-66	Indurated	-	-			-			-	-
198	Redding	0-7	Gravelly loam	Low	0.6-2.0	Well drained	Slight to Moderate	0.32	5	VIIs Nonirrigated	5.6-6.5	5-15
		20-Jul	Gravelly loam, gravelly clay loam	Moderate	0.2-0.6			0.24			5.1-6.5	5-15
		20-28	Gravelly clay loam, gravelly clay	High	<0.06			0.25			5.6-6.5	15-30
		28-66	Indurated	-	-			-			-	-

[1] Soil map numbers refer to numbers shown in Figure 3.15-2

[2] K is a measurement of relative susceptibility to sheet and rill erosion by water, values range from 0.10 to 0.64, with lower values representing a lower susceptibility to erosion. T represents soil loss tolerance, which is defined as the maximum rate of soil erosion without reducing production or quality, values range from 1-5 with 5 being least susceptible to erosion.

[3] Land Capability is an indication of the suitability of land for crops, values range from I to VIII, with VIII being unsuitable for crops.

[4] Soils with a high plasticity index have a wide range of moisture content in which the soil performs as a plastic material; larger values are more plastic.

Source: NRCS 1993

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145 Fiddyment Fine Sandy Loam, 1–8% Slopes The soil covers the extreme southeastern corner of the area of analysis, next to the existing Security Park. Fiddyment is a well drained soil formed from weathered sandstone or siltstone. Native vegetation consists primarily of annual grasses, forbs, and scattered oak trees. Permeability is very slow, and soils above the claypan tend to become waterlogged for short periods after heavy rainfall. Limitations affecting this site for urban development are shallow depth to hardpan and bedrock (which limits trenching activities and landscaping plants), low strength (instability affects road and street design), and very slow permeability (which increases erosion hazards for roads and building pads, especially steep slopes with cut and fill).

192 Red Bluff Loam, 2–5% Slopes Red Bluff soil is very deep, well drained, and formed from alluvium on intermediate terraces—in this instance, part of the ancient channel of the American River. Native vegetation is primarily annual grasses and forbs. Limitations affecting urban uses are low strength and a moderate shrink-swell potential, which can be compensated for by proper design.

193 Red Bluff-Redding Complex, 0–5% Slopes The Red Bluff-Redding complex is well-drained soil. The complex is composed of approximately 45% Red Bluff and 40% Redding soils, and is located on high terraces formed from alluvium. Native vegetation is primarily annual grasses and forbs. This soil is limited for urban development by a cemented pan and low strength, which can be compensated for by proper design.

198 Redding Gravelly Loam, 0–8% Slopes This soil consists of high terrace and terrace remnants formed from gravelly and cobbly alluvium. Native vegetation is primarily annual grasses and forbs. Permeability is very slow, and soils above the claypan tend to become waterlogged for short periods after heavy rainfall. Soil uses are limited by the high water-erosion hazard, moderate shrink-swell potential, low strength, shallow depth to hardpan, shallow depth to claypan, and very slow permeability.

MINERAL RESOURCES

The CDMG is responsible for classification and designation of areas containing, or potentially containing, significant mineral resources. The CDMG classification system recognizes four Mineral Resource Zones (MRZs). The area of analysis has been designated MRZ-3 with respect to aggregate resources, which are valuable resources for the construction industry. The MRZ-3 designation is utilized for areas containing mineral deposits that have an unknown significance because they cannot be evaluated from available data. There is potential for the area of analysis to be an area that contains soils that are gold bearing. Much of the land north of the area of analysis has been dredged for gold, and nearby gold dredging activities have yielded large amounts of gold. Table 3.15-3 lists the MRZ classifications, and Figure 3.15-3 indicates the classifications for the area of analysis.

Table 3.15-3
California Division of Mines and Geology Mineral Land Classification System

Classification	Description
MRZ-1	Areas where adequate information indicates that no significant mineral deposits are present or where it is judged that little likelihood exists for their presence
MRZ-2	Areas where adequate information indicates that significant mineral deposits are present or where it is judged that a high likelihood for their presence exists
MRZ-3	Areas containing mineral deposits, the significance of which cannot be evaluated from existing data
MRZ-4	Areas where available data are inadequate for placement in any other mineral resource zone

Note: MRZ = Mineral Resource Zone

Source: Dupras 1988

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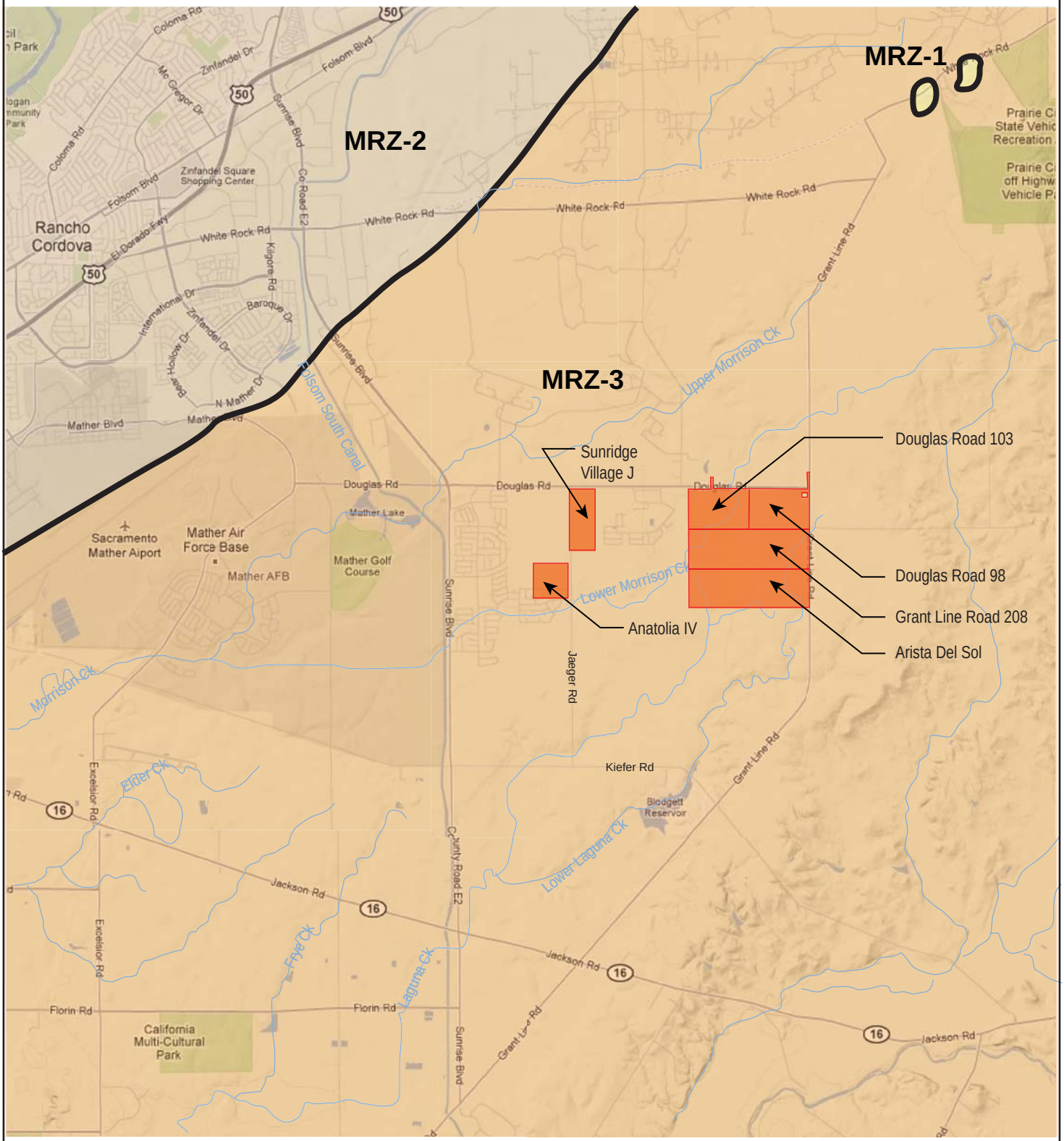

Source: Portland Cement Concrete Grade Aggregate Resources, 1988

NORTH

0 3000 6000

Scale in Feet

MRZ-1 Areas of no mineral resource significance

MRZ-2 Areas of identified mineral resource significance

MRZ-3 Areas of undetermined mineral resource significance

Figure 3.15-3. Mineral Land Classification Map

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3.15.3 REGULATORY FRAMEWORK

3.15.3.1 FEDERAL PLANS, POLICIES, REGULATIONS, AND LAWS

FEDERAL EARTHQUAKE HAZARDS REDUCTION ACT

In October 1997, the U.S. Congress passed the Earthquake Hazards Reduction Act to "reduce the risks to life and property from future earthquakes in the United States through the establishment and maintenance of an effective earthquake hazards and reduction program." To accomplish this, the act established the National Earthquake Hazards Reduction Program (NEHRP). This program was significantly amended in November 1990 by the National Earthquake Hazards Reduction Program Act (NEHRPA), which refined the description of agency responsibilities, program goals, and objectives.

The NEHRP's mission includes improved understanding, characterization, and prediction of hazards and vulnerabilities; improvement of building codes and land use practices; risk reduction through post earthquake investigations and education; development and improvement of design and construction techniques; improvement of mitigation capacity; and accelerated application of research results. The NEHRPA designates the Federal Emergency Management Agency (FEMA) as the lead agency of the program and assigns it several planning, coordinating, and reporting responsibilities. Other NEHRPA agencies include the National Institute of Standards and Technology, National Science Foundation, and USGS.

3.15.3.2 STATE PLANS, POLICIES, REGULATIONS, AND LAWS

CALIFORNIA BUILDING STANDARDS CODE

The State of California provides minimum standard for building design through the California Building Standards Code (CBC) (Title 24 California Code of Regulations). Where no other building codes apply, Chapter 29 regulates excavation, foundations, and retaining walls. The CBC also applies to building design and construction in the state and is based on the Federal Uniform Building Code used widely throughout the country (generally adopted on a state-by-state or district-by-district basis). The CBC has been modified for California conditions with numerous more detailed and/or more stringent regulations.

The state earthquake protection law (California Health and Safety Code §19100 et seq.) requires that structures be designed to resist stresses produced by lateral forces caused by wind and earthquakes. Specific minimum seismic safety and structural design requirements are set forth in Chapter 16 of the CBC. The CBC identifies seismic factors that must be considered in structural design.

Chapter 18 of the CBC regulates the excavation of foundations and retaining walls, and Appendix Chapter A33 regulates grading activities, including drainage and erosion control, and construction on unstable soils, such as expansive soils and liquefaction areas.

CALIFORNIA SEISMIC HAZARDS MAPPING ACT

The California Seismic Hazards Mapping Act of 1990 (Public Resources Code §2690 – 2699.6) addresses seismic hazards other than surface rupture, such as liquefaction and induced landslides. The Seismic Hazards Mapping Act specifies that the lead agency for a project may withhold development permits until geologic or soils investigations are conducted for specific sites, and mitigation measures are incorporated into plans to reduce hazards associated with seismicity and unstable soils.

ALQUIST-PRIOLO EARTHQUAKE FAULT ZONING ACT

The Alquist-Priolo Earthquake Fault Zoning Act (Public Resources Code §2621 – 2630) was passed by the California Legislature in 1972 to mitigate the hazard of surface faulting to structures. The act's main purpose is to prevent the construction of buildings used for human occupancy on the surface trace of active faults. The act addresses only the hazard of surface fault rupture and is not directed toward other earthquake hazards. Local agencies must regulate most development in fault zones established by the State Geologist. Before a project can be permitted in a designated Alquist-Priolo Earthquake Fault Zone, cities and counties must require a geologic investigation to demonstrate that proposed buildings would not be constructed across active faults.

CALIFORNIA SURFACE MINING AND RECLAMATION ACT

The California Surface Mining and Reclamation Act (SMARA) (Public Resources Code §2710 et seq.) was enacted by the California Legislature in 1975 to regulate activities related to mineral resource extraction. The act requires the prevention of adverse environmental effects caused by mining, the reclamation of mined lands for alternative land uses, and the elimination of hazards to public health and safety from the effects of mining activities. At the same time, SMARA encourages both the conservation and the production of extractive mineral resources, requiring the State Geologist to identify and attach levels of significance to the state's varied extractive resource deposits. Under SMARA, the mining industry in California must adequately plan for the reclamation of mined sites for beneficial uses and provide financial assurances to guarantee that the approved reclamation will actually be implemented. The requirements of SMARA must be implemented by the local lead agency with permitting responsibility for the proposed mining project.

3.15.3.3 REGIONAL AND LOCAL PLANS, POLICIES, REGULATIONS, AND ORDINANCES

SACRAMENTO COUNTY ZONING CODE TITLE II, ARTICLE 4, SURFACE MINING (ADOPTED BY THE CITY OF RANCHO CORDOVA)

The County has adopted its own SMARA ordinance, which is modeled after the state's SMARA guidelines (see above). The County's SMARA ordinance is designed to protect mineral resources from incompatible land uses, to manage the mineral resources, to assure the county of an adequate supply of these resources with due consideration for the environment, and to provide for the restoration of mined lands for future use. A Conditional Use Permit is required for surface-mining operations in Sacramento County. The City of Rancho Cordova adopted this ordinance upon incorporation in 2003.

SACRAMENTO COUNTY GRADING ORDINANCE (ADOPTED BY THE CITY OF RANCHO CORDOVA)

The County has enacted a Land Grading and Erosion Control Ordinance (County Code, Title 16, Chapter 16.44) for the purpose of minimizing damage to surrounding properties and public rights-of-way; limiting degradation of the water quality of watercourses; and curbing the disruption of drainage system flow caused by the activities of clearing, grubbing, grading, filing, and excavating land. The ordinance includes administrative procedures, minimum standards of review, and implementation and enforcement procedures for the control of erosion and sedimentation that are directly related to land-grading activities. The City of Rancho Cordova adopted this ordinance upon incorporation in 2003.

3.15.4 ENVIRONMENTAL CONSEQUENCES AND MITIGATION MEASURES

3.15.4.1 THRESHOLDS OF SIGNIFICANCE

Impacts to geology, soils, or mineral resources are considered significant if implementation of the proposed project or alternatives under consideration would do any of the following:

- Result in substantial erosion or unstable soil conditions from excavation grading or fill;
- Expose people or property to seismic hazards including fault rupture on active faults, seismic ground shaking, or seismically induced ground failure, including liquefaction;
- Expose persons or property to geologic hazards such as landslides, land subsidence, or expansive soils; or
- Result in the loss of availability of known mineral resources that would be of future value to the region.

3.15.4.2 ANALYSIS METHODOLOGY

Effects associated with geology, soils, and mineral resources that could result from project construction and operational activities were evaluated qualitatively based on expected construction practices; materials, locations, and duration of project construction and related activities; and a review of published geologic literature including maps, books, and journal articles.

3.15.4.3 IMPACT ANALYSIS

Impact 3.15-1 - Potential temporary, short-term construction-related erosion. *Construction activities during implementation would involve extensive grading and movement of earth, which could expose soils to erosion and result in the loss of topsoil.*

Proposed Project Alternative, Reduced Footprint Alternative, and No Action Alternative - Implementation would include substantial construction activity, including soil removal, trenching, pipe installation, fabrication of concrete channels, grading, and revegetation. Construction activities would result in the temporary disturbance of soil and would expose disturbed areas to winter storm events. Rain of sufficient intensity could dislodge soil particles from the soil surface. Once particles are dislodged and the storm is large enough to generate runoff, localized erosion could occur. In addition, soil disturbance during the summer months could result in loss of topsoil because of wind erosion. A **direct, significant** impact from soil erosion could result from construction activities associated with the project. **No indirect** impacts would result.

Mitigation Measure 3.15-1: Prepare and Implement a Grading and Erosion Control Plan.

A grading and erosion control plan will be prepared by a California Registered Civil Engineer retained by the project applicant(s) for grading work. The grading and erosion control plan will be submitted to the City Public Works Department before issuance of grading permits for all new development within the area of analysis. The plan will be consistent with the City's Land Grading and Erosion Control Ordinance as well as the City's National Pollutant Discharge Elimination System (NPDES) permit and will include

the site-specific grading associated with development. The plan will include the location, implementation schedule, and maintenance schedule of all erosion and sediment control measures, a description of measures designed to control dust and stabilize the construction-site road and entrance, and a description of the location and methods of storage and disposal of construction materials. Erosion and sediment control measures could include the use of detention basins, berms, swales, wattles, and silt fencing. Stabilization of construction entrances to minimize trackout (control dust) is commonly achieved by installing filter fabric and crushed rock to a depth of approximately 1 foot. The project applicant(s) will ensure that the construction contractor is responsible for securing a source of transportation and deposition of excavated materials. Impacts from soil erosion resulting from construction activities associated with the project would be **less than significant with mitigation**.

Impact 3.15-2 – Potential damage to structures from seismic activity and related geologic hazards. *The area of analysis is located in an area of low seismic activity and structures at the sites would be designed in accordance with CBC standards.*

Proposed Project Alternative, Reduced Footprint Alternative, and No Action Alternative – All three alternatives would include construction of new structures. The structures are not located in a known fault zone, no faults known to be active within Holocene time are located within 30 miles of the area of analysis; therefore, the potential for surface rupture to cause damage to proposed structures is negligible. Although potential damage to people or structures from seismic ground shaking could be a concern, compliance with the CBC would require the site's seismic-design response spectrum to be established and incorporated into the design of all new residences and buildings. Roadways, utilities, and structures would be designed to withstand seismic forces per CBC requirements for Seismic Zone 3. Furthermore, potential hazards associated with liquefaction would be negligible because the area of analysis has a fairly deep groundwater table, soils are relatively stable, the area of analysis is not located in a landslide hazard area, and potential sources of seismic activity are a relatively long distance away. Potential damage to structures from seismic activity and related geologic hazards would be a **less than significant, direct impact**. **No indirect impacts** would result.

Mitigation Measure 3.15-2: No mitigation measures are required.

Impact 3.15-3 – Potential damage to structure from construction on unstable soils. *Portions of the area of analysis are underlain by soils that have a moderate to high potential for expansion when wet, or are underlain by piles of unstable cobbles and slickens soils from dredge mining activities. Construction in any of these soils may cause foundation movements that can cause damage to overlying structures.*

Proposed Project Alternative, Reduced Footprint Alternative, and No Action Alternative – Expansive soils shrink and swell as a result of moisture change. These volume changes in the soil can result in damage over time to building foundations, underground utilities, and other subsurface facilities if they are not designed and constructed appropriately. All three alternatives would include construction of new structures. Portions of the area of analysis are underlain by clayey soils with moderate to high shrink-swell potential as identified in Table 3.15-2. Soil expansion could pose problems for foundation design, and could adversely affect interior slabs-on-grade and landscaping hardscape. This would be a **significant, indirect** impact. **No direct** impacts would result.

Mitigation Measure 3.15-3a: Prepare a Geotechnical Study and Implement Recommendations.

Before the approval of grading plans, a final geotechnical subsurface investigation report will be

prepared for the proposed development. The final geotechnical engineering report will address and make recommendations on the following:

- site preparation;
- appropriate sources and types of fill;
- potential need for soil amendments;
- road, pavement, and parking areas;
- structural foundations, including retaining wall design;
- grading practices;
- erosion/winterization;
- special problems discovered on-site (e.g., groundwater and expansive/unstable soils); and
- slope stability.

The geotechnical investigation will include subsurface testing of soil and groundwater conditions and determine appropriate foundation designs that are consistent with the CBC. If the soils report indicates the presence of critically expansive soils or other soil problems that would lead to structural defects if not corrected, additional investigations may be required for subdivisions before building permits are issued. This will be so noted on the project grading plans. Recommendations contained in the geotechnical engineering report will be noted on the grading plans and implemented as appropriate before the issuance of building permits. Design and construction of all new development will be in accordance with the CBC and the City Land Grading and Erosion Control Ordinance. Potential damage to structures from construction on unstable soils would be reduced to a **less than significant impact with mitigation**.

Mitigation Measure 3.15-3b: Ensure On-Site Monitoring by a Geotechnical Engineer.

All earthwork shall be monitored by a geotechnical engineer retained by the project applicant(s). The geotechnical engineer shall provide oversight during all excavation, placement of fill, and disposal of materials removed from and deposited on the subject sites and other sites. Before export/import of any soil to/from an off-site location, the project applicant(s) shall obtain a grading permit from the City Public Works Department.

Impact 3.15-4 – Loss of mineral resources. *The area of analysis is located within an area designated by CDMG and is classified as MRZ-3, an area containing mineral deposits, the significance of which cannot be evaluated from existing data.*

Proposed Alternative, Reduced Footprint Alternative, and No Action Alternative – Implementation of any of the three alternatives would result in developing land and foregoing the potential mineral resources. Mineral resources located directly below the development would be unavailable for mining. Because the area of analysis is designated MRZ-3, an area without identified mineral deposits, there is a **less than significant, direct** impact, and **no indirect** impacts would occur.

Mitigation Measure 3.15-4: No mitigation measures are required.

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3.16 CLIMATE CHANGE

This section describes the affected environment, regulatory framework, environmental consequences of the alternatives and mitigation of potential consequences with respect to potential climate change effects from greenhouse gas (GHG) emissions.

3.16.1 AREA OF ANALYSIS

The Sunridge Specific Plan Area, which is comprised of a total of nine residential developments, is located in the City of Rancho Cordova within Sacramento County. As discussed earlier, only six of the nine properties are addressed in this EIS. For the purposes of evaluating the Project's effect on GHG emissions, the six parcels were considered together as one analysis area.

Development of any of the Sunridge Properties would involve construction equipment, haul trucks, and employee traffic that would generate GHG emissions. The quantity of GHGs that it takes to ultimately result in climate change is not precisely known; however, it is recognized that no single project alone would measurably contribute to a noticeable incremental change in the global average temperature. Therefore, even though GHGs are global pollutants (as discussed in the Affected Environment Section below), the impacts associated with GHG emissions from the alternatives are considered on a regional, state, and national level (as appropriate).

3.16.2 AFFECTED ENVIRONMENT

GHGs refer to a group of compounds present in the earth's atmosphere that regulate temperature and climate by trapping a portion of the infrared radiation from the sun. The principal GHGs are carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), sulfur hexafluoride (SF_6), perfluorocarbons (PFCs), hydrofluorocarbons (HFCs), and water vapor (H_2O). CO_2 is the most predominant GHG in the Earth's atmosphere, and is therefore used as the baseline for determining the global warming potential (GWP) of the other GHGs (i.e., carbon dioxide equivalents (CO_2e))[1]. These GHGs are produced via natural processes as well as human activities (e.g., combustion of fossil fuels).

Since the industrial revolution, there has been a significant increase in the amount of GHGs emitted into the atmosphere. Research has shown that this exponential increase in GHG emissions from human activities has contributed to rapid global climate change. Global climate change, also known as global warming, is a change in the average weather on earth that can be measured by wind patterns, storms, precipitation and temperature. Although there is disagreement as to the speed of global warming and the extent of the impacts attributable to human activities, most agree that there is a direct link between increased emissions of GHGs and global temperature variations.

Unlike criteria air pollutants and toxic air contaminants, which are pollutants of concern on a regional and statewide scale, GHGs are global pollutants. This is because GHGs persist in the atmosphere for long enough time periods (e.g., several years) to be dispersed around the globe, resulting in widespread climate change impacts. For example, climate change resulting from global GHG emissions could impact the natural environment in California in the following ways, among others:

1 Carbon dioxide equivalency is a quantity that describes, for a given mixture and amount of greenhouse gas, the amount of CO_2 that would have the same global warming potential (GWP), when measured over a specified timescale. GWP is a measure of how much a given mass of greenhouse gas is estimated to contribute to global warming. It is a relative scale which compares the greenhouse gas in question to that of the same mass of CO_2 (whose GWP is by definition 1).

- Rising sea levels along the California coastline, particularly along San Francisco's coastline and bayside and the Sacramento-San Joaquin Delta due to ocean expansion and melting snowpack in the Sierra Nevada;

- Extreme-heat conditions, such as heat waves and very high temperatures, which could last longer and become more frequent;

- An increase in heat-related human deaths, infectious diseases, and a higher risk of respiratory problems caused by deteriorating air quality;

- Reduced snow pack and stream flow in the Sierra Nevada, affecting winter recreation and water supplies;

- Potential increase in the severity of winter storms, affecting peak stream flows and flooding;

- Changes in growing season conditions that could affect California agriculture, causing variations in crop quality and yield; and

- Changes in distribution of plant and wildlife species due to changes in temperature, competition from colonizing species, changes in hydrologic cycles, changes in sea levels, and other climate-related effects.

These changes in California's climate and ecosystems are occurring at a time when California's population is expected to increase from 34 million to 59 million by the year 2040 (California Energy Commission [CEC], 2005).

STATE OF CALIFORNIA

Worldwide, California is the 12th to 16th largest emitter of CO_2, and is responsible for approximately 2% of the world's CO_2 emissions (CEC, 2006). Transportation is responsible for 38% of the state's GHG emissions, followed by electricity generation (22%), the industrial sector (21%), agriculture and forestry (6%), residential (6%), and other sources (6%). Emissions of CO_2 and N_2O are byproducts of fossil fuel combustion, among other sources. CH_4, a highly potent GHG, results from off-gassing associated with agricultural practices and landfills, among other sources. Sinks of CO_2 include uptake by vegetation and dissolution into the ocean. California GHG emissions in 2006 totaled approximately 485 million metric tons of CO_2e (CEC, 2009).

SACRAMENTO COUNTY

Table 3.16-1 shows CO_2e emissions in Sacramento County by sector. Almost half of the emissions result from the transportation sector. Off-road equipment such as construction equipment falls under the "other" category, which is approximately 12% of the emissions in Sacramento County.

Table 3.16-1 Carbon Dioxide Equivalent Emissions by Sector in Sacramento County		
Sector	**Metric Tons CO_2e**	**Percent[1]**
Transportation	6,731,929	48.3
Commercial & Industrial	2,292,627	16.5
Residential	2,439,527	17.5
Waste	741,528	5.3
Other[2]	1,729,016	12.4

Source: SMAQMD (2009)

[1] Total emissions in Sacramento County are 13,934,627 metric tons CO_2e. Data year not specified.

[2] This category includes off-road equipment, high global warming potential gases, industrial-specific, agriculture, wastewater treatment, and the Sacramento International Airport.

CO_2e = carbon dioxide equivalent

3.16.3 REGULATORY FRAMEWORK

Climate change associated with GHG emissions is addressed through the efforts of various Federal, state, regional, and local government agencies. These agencies work jointly, as well as individually, to reduce climate change impacts through legislation, regulations, planning, and policy-making aimed at regulating GHG emissions. The agencies and legislation responsible for regulating GHG emissions are discussed below.

3.16.3.1 FEDERAL PLANS, POLICIES, REGULATIONS, AND LAWS

THE CLEAN AIR ACT

The United States Environmental Protection Agency (USEPA) is the Federal agency responsible for implementing the Federal Clean Air Act (CAA). In *Massachusetts v. EPA,* 549 U.S. 497 (2007), the Supreme Court of the United States ruled that the USEPA has the authority to regulate GHGs under the Clean Air Act. The Court held that the USEPA must determine whether or not GHG emissions from new motor vehicles cause or contribute to air pollution which may reasonably be anticipated to endanger public health or welfare, or whether the science is too uncertain to make a reasoned decision. In making these decisions, the USEPA Administrator is required to follow the language of §202(a) of the Clean Air Act. If the USEPA found that GHGs posed a danger to public health and welfare, the USEPA would be obligated to take steps to reduce GHG pollutants. On December 15, 2009, the USEPA released the final Endangerment Finding, which officially declared that the mix of atmospheric concentrations of six key, well-mixed GHGs threatens both the public health and the public welfare of current and future generations. These six GHGs are: carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6). The Endangerment Finding became effective January 14, 2010.

The Endangerment Finding does not create regulations, but it lays a foundation for regulatory action under the Clean Air Act. On September 30, 2009 (prior to the Endangerment Finding), the USEPA introduced a 416-page proposal ("the Tailoring Rule") which outlined how the Clean Air Act can be effectively applied to regulate GHGs. The Tailoring Rule will require large industrial facilities that emit more than a specified amount of CO_2e a year to obtain construction and operating permits for the release of the emissions and demonstrate they are using the best available control technologies and energy

efficiency measures to minimize GHG emissions. The final Tailoring Rule, which was released May 13, 2010, targets facilities that emit more than 75,000 to 100,000 tons of CO_2e a year from stationary sources. Therefore, the Proposed Project Alternative would not be subject to the Tailoring Rule.

THE USEPA MANDATORY REPORTING RULE

In response to the FY2008 Consolidated Appropriations Act (H.R. 2764; Public Law 110–161), the USEPA has issued the Final Mandatory Reporting of Greenhouse Gases Rule ("the USEPA Reporting Rule"). The USEPA Reporting Rule was signed by the USEPA Administrator on September 22, 2009 and went into effect December 29, 2009. The Rule requires annual reporting of GHG emissions from large source emitters (e.g., facilities that emit 25,000 metric tons or more of CO_2e per year from stationary sources) and fossil fuel and industrial gas suppliers in the United States. Based on these requirements, the Proposed Project Alternative will not be subject to the USEPA Mandatory Reporting Rule.

3.16.3.2 STATE PLANS, POLICIES, REGULATIONS, AND LAWS

CALIFORNIA ASSEMBLY BILL (AB) 1493

AB 1493 required the California Air Resources Board (CARB) to develop and adopt the nation's first GHG emission standards for automobiles. The legislature declared in AB 1493 that global warming was a matter of increasing concern for public health and environment in the state. It cited several risks that California faces from climate change, including reduction in the state's water supply, increased air pollution creation by higher temperatures, harm to agriculture, increase in wildfires, damage to the coastline, and economic losses caused by higher food, water energy, and insurance prices.

CALIFORNIA EXECUTIVE ORDER S-3-05

California Executive Order S-3-05 established the following GHG emission reduction targets for California:

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

CALIFORNIA ASSEMBLY BILL (AB) 32

AB 32, the Global Warming Solutions Act of 2006, codifies the state's GHG emissions target by requiring the state's global warming emissions to be reduced to 1990 levels by 2020, and directs CARB to enforce the statewide cap that would begin in 2012. AB 32 was signed and passed into law by Governor Arnold Schwarzenegger on September 27, 2006. Key AB 32 milestones were outlined as follows:

- June 30, 2007 - Identification of "discrete" early action GHG emissions reduction measures.
- January 1, 2008 - Identification of the 1990 baseline GHG emissions level and approval of a statewide limit equivalent to that level. Adoption of reporting and verification requirements concerning GHG emissions.

- January 1, 2009 - Adoption of a scoping plan for achieving GHG emission reductions.
- January 1, 2010 - Adoption and enforcement of regulations to implement the "discrete" actions.
- January 1, 2011 - Adoption of GHG emission limits and reduction measures by regulation.
- January 1, 2012 - GHG emission limits and reduction measures adopted in 2011 become enforceable.

As shown above, AB 32 requires CARB to design and implement emission limits, regulations, and other measures, such that feasible and cost-effective statewide GHG emissions are reduced to 1990 levels by 2020 (representing an approximate 30% reduction in emissions).

THE MANDATORY GHG REPORTING REGULATION

The Mandatory GHG Reporting Regulation, which was developed under AB 32, was approved by CARB in December of 2007. The Mandatory GHG Reporting Regulation requires specific facilities that are located and/or operate in California to report and verify their annual GHG emissions in 2009 and every year thereafter. Such facilities include cement plants, oil refineries, electric generating facilities/providers, co-generation facilities, hydrogen plants, and other stationary combustion sources that emit more than 25,000 metric tons of CO_2e per year. Based on these requirements, the project will not be subject to the CARB Mandatory GHG Reporting Regulation.

SENATE BILL (SB) 97

SB 97 mandated that the Governor's Office of Planning and Research (OPR) amend the California Environmental Quality Act (CEQA) Guidelines to address impacts from GHGs. In compliance with this requirement, OPR released Preliminary Draft CEQA Guideline Amendments in January 2009 and forwarded the draft Guideline Amendments to the Natural Resources Agency in April 2009. The Natural Resources Agency transmitted the adopted amendments and the entire rulemaking file to the Office of Administrative Law (OAL) on December 31, 2009. On February 16, 2010, the OAL approved the Amendments, and filed them with the Secretary of State for inclusion in the California Code of Regulations. The Amendments became effective on March 18, 2010 and were included in the 2010 CEQA Statutes and Guidelines.

CEQA STATUTES AND GUIDELINES

The 2010 CEQA Statutes and Guidelines do not establish specific thresholds for determining the significance of GHG emissions; however the 2010 CEQA Statutes and Guidelines do provide a framework for local CEQA agencies to use to identify the extent GHG emissions impact the environment. The CEQA Statutes and Guidelines state that, "[a] lead agency should make a good-faith effort, based to the extent possible on scientific and factual data, to describe, calculate or estimate the amount of greenhouse gas emissions resulting from a project. A lead agency shall have discretion to determine, in the context of a particular project, whether to:

1. Use a model or methodology to quantify greenhouse gas emissions resulting from a project, and which model or methodology to use. The lead agency has discretion to select the model or methodology it considers most appropriate provided it supports its decision with substantial evidence. The lead agency should explain the limitations of the particular model or methodology selected for use; and/or

2. Rely on a qualitative analysis or performance based standards.

A lead agency should consider the following factors, among others, when assessing the significance of impacts from greenhouse gas emissions on the environment:

1. The extent to which the project may increase or reduce greenhouse gas emissions as compared to the existing environmental setting;

2. Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project.

3. The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of greenhouse gas emissions. Such requirements must be adopted by the relevant public agency through a public review process and must reduce or mitigate the project's incremental contribution of greenhouse gas emissions."

3.16.3.3 Regional and Local Plans, Policies, Regulations, and Laws

Sacramento Metropolitan Air Quality Management District (SMAQMD)

The SMAQMD updated and released their "CEQA Guide for Air Quality Assessment" in December 2009 (December 2009 CEQA Guide). The December 2009 CEQA Guide provides methods to review air quality impacts from development projects, screening approaches, methods for calculating emissions, and mitigation measures. Lead CEQA Agencies are being requested to utilize the December 2009 CEQA Guide beginning January 1, 2010, for all projects that have not released a draft environmental document for public review on or before that date.

Similar to the draft CEQA Guide for Air Quality Assessment released for public comment in July 2009, the December 2009 CEQA Guide recommends that lead agencies should quantify the GHG emissions anticipated to be generated by the project. Direct and indirect emissions of GHGs from the project, which include construction emissions, area- and mobile-source emissions, and indirect emissions from in-state energy production and water consumption (energy for conveyance, treatment, distribution, and wastewater treatment), should be quantified and disclosed.

SMAQMD-recommended methodologies for quantifying construction and direct operational GHGs include using the Urban Land Use Emissions Model (URBEMIS) for proposed land use development. For indirect operational GHG emissions, SMAQMD recommends using the California Climate Action Registry (CCAR) General Reporting Protocol (GRP) and information provided by the CEC to determine GHG emissions associated with electricity and water usage. SMAQMD allows the default values to be used in the models and informational sources if required project-specific information is not available. Lead agencies should report the project's total GHG emissions in units of metric tons of CO_2e.

The December 2009 CEQA Guide does not provide a quantitative GHG emissions threshold to determine if a project will have a significant impact on climate change. Instead, the December 2009 CEQA Guide states that the thresholds of significance for GHG emissions should be related to AB 32's GHG reduction goals.

Sacramento County

Sacramento County's Board of Supervisors has approved the first phase of a Climate Action Plan (CAP) that will provide a framework for reducing GHG emissions and manage their resources in order to comply

with state mandates (SMAQMD, 2009). The first phase focuses on the County's overall strategy and goals for addressing climate change. It also highlights actions already taken to become more efficient, and targets future steps that will ensure a more sustainable Sacramento now and in the future. Key goals in the first phase include a reduction in vehicle miles traveled (VMT) per capita in the region; improving energy efficiency of all existing and new buildings; emphasizing water use efficiency as a way to reduce energy consumption; maximizing waste diversion, composting, and recycling through residential and commercial programs; and protecting important farmlands and open space from conversion and encroachment, and maintaining connectivity of protected areas.

CITY OF RANCHO CORDOVA

The City of Rancho Cordova General Plan, which was completed on June 26, 2006, does not contain any goals or policies that relate directly to climate change or GHGs. Also, the City of Rancho Cordova has not developed a CAP or similar GHG emissions reduction plan for GHG emission-generating activity in its jurisdiction. However, the preparation of a CAP is being considered by the City Council under an Energy Efficiency and Conservation Block Grant funded by the American Recovery and Reinvestment Act (City of Rancho Cordova, 2009).

3.16.4 ENVIRONMENTAL CONSEQUENCES AND MITIGATION MEASURES

This section describes the potential impacts from the alternatives related to GHG emissions. The primary issues and concerns for this project include: 1) Exceedance of regulatory GHG emissions thresholds due to construction-related emissions, 2) Exceedance of GHG emissions thresholds due to increased vehicle traffic- and operation-related emissions, and 3) Non-conformance with GHG policies on the Federal, state, or regional level.

3.16.4.1 THRESHOLDS OF SIGNIFICANCE

While none of the Federal, state, or regional plans, policies, regulations, or laws provide a definitive quantitative threshold for GHG emissions for this type of project, the Council on Environmental Quality (CEQ) has drafted a guidance document for Federal agencies to use in their preparation of NEPA documents On February 18, 2010, the CEQ released a memorandum entitled, "Draft NEPA Guidance on Consideration of the Effects of Climate Change and Greenhouse Gas Emissions" ("Draft NEPA Guidance"), which discusses ways Federal agencies can improve their consideration of the effects of GHG emissions and climate change in their evaluation of proposals for Federal actions under NEPA. The Draft NEPA Guidance states that the environmental analysis and documents produced in the NEPA process should provide the decision maker with relevant and timely information about (1) the GHG emissions effects of a proposed action and alternative actions, and (2) the relationship of climate change effects to a proposed action or alternatives, including the relationship to proposal design, environmental impacts, mitigation, and adaptation measures.

Specifically, if a proposed action would be reasonably anticipated to cause direct emissions of 25,000 metric tons or more of CO_2e emissions on an annual basis, agencies should consider this an indicator that a quantitative and qualitative assessment may be meaningful to decision makers and the public. CEQ does not propose this as an indicator of a threshold of significant effects, but rather as an indicator of a minimum level of GHG emissions that may warrant some description in the appropriate NEPA analysis for agency actions involving direct emissions of GHGs.

Taking into consideration current laws and regulations and, in particular, the CEQ's Draft NEPA Guidance, the following thresholds of significance are recommended and were used for this analysis:

1. GHGs resulting from the implementation of the project may have a significant impact if it is anticipated that the project would cause direct emissions of 25,000 metric tons of CO_2e or more on an annual basis.

This quantitative threshold is based on recommendations provided in the Draft NEPA Guidance. However, CEQ does not propose 25,000 metric tons or more of direct CO_2e emissions on an annual basis as an indicator of a threshold of significant effects, but rather as an indicator of a minimum level of GHG emissions that may warrant some description in the appropriate NEPA analysis for agency actions involving direct emissions of GHGs. In other words, if a proposed action would be reasonably anticipated to cause direct emissions of 25,000 metric tons of CO_2e or more on an annual basis, agencies should consider this as an indicator that a quantitative and qualitative assessment may be meaningful to decision makers and the public.

2. GHGs resulting from the implementation of the project would be considered to have a significant impact if the project would conflict with or obstruct implementation of GHG reduction measures or goals under AB 32.

This qualitative threshold is based on the December 2009 CEQA Guide, which states the thresholds of significance for GHG emissions should be related to AB 32's GHG reduction goals.

3.16.4.2 ANALYSIS METHODOLOGY

GHG QUANTIFICATION

The Draft NEPA Guidance proposes that agencies should consider quantifying the GHG emissions associated with a project using one or more of the following GHG emission reporting protocols, as appropriate:

- For quantification of emissions from large direct emitters: US EPA Mandatory Reporting of GHGs Rule.

- For quantification of Scope 1 emissions at Federal facilities: GHG accounting and reporting guidance that will be issued under Executive Order 13514.

- For quantification of emissions and removals from terrestrial carbon sequestration and various other project types: US Department of Energy Technical Guidelines.

Based on the nature of the alternatives, none of these GHG emission reporting protocols would apply. Therefore, as recommended by the Draft NEPA Guidance, the GHG emissions were evaluated using the best available procedures outlined by an applicable agency. Specifically, construction GHG emissions and direct and indirect operational GHG emissions associated with the alternatives were estimated using the recommended methodology outlined in the SMAQMD December 2009 CEQA Guide. Please note that even though indirect GHG emissions for the three alternatives were quantified, the Draft NEPA Guidance only considers direct GHG emissions when determining if a project exceeds the recommended threshold of 25,000 metric tons of CO_2e or more on an annual basis.

SMAQMD-recommended methodologies for quantifying construction and direct operational GHGs for proposed land use development projects are based on the use of the URBEMIS 2007 model (version 9.2.4). To quantify potential construction emissions, the land use data for the three alternatives presented in Section 2.4 of this FEIS (Table 2-1 and Table 2-2) and the anticipated buildout period for the project (assumed a 5-year buildout period to be very conservative) were input into URBEMIS 2007. The direct

GHG emissions for the three alternatives, which include mobile and area sources, were quantified in the URBEMIS 2007 model based on the land use data for the three alternatives (Table 2-1 and Table 2-2) and the associated average daily trips. As discussed in Section 3.7 of this FEIS, for each single family home built, there are approximately 8.98 daily trips (3,258 single family homes divided by 29,241 daily trips). The daily trips associated with the parks and commercial spaces outlined in the three alternatives were determined using URBEMIS 2007 default values based on the acreage presented in Table 2-1 and Table 2-2. Area source emissions (use of natural gas, landscaping, and architectural coatings), were also determined using URBEMIS 2007 and the land use information for the three alternatives presented in Table 2-1 and Table 2-2.

For indirect operational GHG emissions (direct electricity usage and electricity usage associated with water usage), SMAQMD recommends using the CCAR GRP and information provided by the CEC. The annual direct electricity usage for the three alternatives was estimated using factors from the CEC (e.g., average electricity usage per year per household). The annual electricity usage associated with water usage was estimated using the anticipated annual water usage for the three alternatives (0.224 million gallons of water per household: Section 3.3, page 3.3-20) and electricity usage factors based on water usage provided by the CEC (e.g., average kwh per million gallons of water usage). Once the electricity usage was determined (direct electricity usage and electricity usage associated with water usage), emission factors and equations contained in the CCAR GRP were used to estimate the annual GHG emissions in metric tons of CO_2e.

COMPLIANCE WITH AB 32

AB 32 requires CARB to design and implement emission limits, regulations, and other measures, so that feasible and cost-effective statewide GHG emissions are reduced to 1990 levels by 2020 (representing an approximate 30% reduction in GHG emissions). In order to achieve CARB's GHG emissions reduction goals, CARB has recommended the implementation of 44 early actions to reduce GHG emissions under AB 32. As outlined in the AB 32 timeline, all of these measures need to be in place and operative by January 1, 2012. Therefore, evaluating the project to ensure that it will comply with CARB's 44 early actions will be a qualitative measure to determine if the project conflicts with or obstructs implementation of GHG reduction measures or goals under AB 32.

Moreover, to avoid potentially conflicting with or obstructing the implementation of the GHG reduction measures or goals under AB 32, mitigation measures should be implemented that reduce GHG emissions to the extent feasible with respect to the state's progress (at the time) toward meeting GHG emissions reductions required by AB 32.

This section describes the project's potential impacts on climate change associated with GHG emissions. By using URBEMIS 2007 and the informational sources as outlined in the SMAQMD December 2009 CEQA Guide, the GHG emissions estimates for the Proposed Project Alternative, Reduced Footprint Alternative, and the No Action Alternative are outlined in Table 3.16-2. A complete printout of the URBEMIS 2007 modeling runs can be found in Appendix F.

Table 3.16-2 Estimated GHG Emissions for the Alternatives (CO_2e Emissions in metric tons per year)			
Emissions Source	**Proposed Project Alternative**	**Reduced Footprint Alternative**	**No Action Alternative**
Construction			
Construction Activities	**12,290**	**10,350**	**8,240**
Operations (Direct Emissions)			
Area Source Emissions	13,387	10,470	8,325
Motor Vehicles	44,095	36,990	28,560
Total Direct Emissions	**57,482**	**47,460**	**36,885**
Operations (Indirect Emissions)			
Electricity Usage[1]	13,814	11,301	8,141
Water Usage[2]	1,436	1,107	908
Total Indirect Emissions	**15,250**	**12,408**	**9,049**

Sources and Assumptions:

[1] Electricity usage per household and square foot of commercial space provided by CEC: 9,250 kwh per household per yr, 17 kwh per square foot of commercial space. GHG emission factors from CCAR GRP (Table C.2).

[2] Water usage per household from Section 3.3, page 3.3-20 (0.244 million gallons per household per year).

a) Number of households, square feet of commercial space, and park acreage based on Table 2-1 and Table 2-2.

b) Assumed buildout would be approximately five years (very conservative assumption).

3.16.4.3 IMPACT ANALYSIS

IMPACT 3.16-1 – Short-term increase in construction-related GHG emissions. *Activities associated with the construction of single family homes and associated infrastructure may result in the temporary generation of GHG emissions.*

Activities associated with the construction of single family homes and associated infrastructure under any of the three alternatives would result in the temporary generation of GHG emissions. These emissions would result from construction activities, including construction worker commute trips and mobile and stationary construction equipment exhaust.

Proposed Project Alternative– Based on the data shown in Table 3.16-2, GHG emissions associated with construction of 3,258 single family homes and associated infrastructure (e.g., parks and commercial space) under the Proposed Project Alternative would be approximately 12,290 metric tons of CO_2e per year. As stated in Section 3.16.4.1 (Thresholds of Significance), GHGs resulting from the implementation of the project may have a significant impact if it is anticipated that the project would cause direct emissions of 25,000 metric tons or more of CO_2e emissions on an annual basis. Therefore, the short-term increase in construction-related GHG emissions for the Proposed Project Alternative would be **less than significant.**

Reduced Footprint Alternative- Based on the data shown in Table 3.16-2, GHG emissions associated with construction of 2,511 single family homes and associated infrastructure (e.g., parks and commercial space) under the Reduced Footprint Alternative would be approximately 10,350 metric tons of CO_2e per year. Therefore, the short-term increase in construction-related GHG emissions for the Reduced Footprint Alternative would be **less than significant**.

No Action Alternative – Based on the data shown in Table 3.16-2, GHG emissions associated with construction of 2,060 single family homes and associated infrastructure (e.g., parks and commercial space) under the No Action Alternative would be approximately 8,240 metric tons of CO_2e per year. Therefore, the short-term increase in construction-related GHG emissions for the No Action Alternative would be **less than significant**.

IMPACT 3.16-2 – Long-term increase in GHG emissions. *Activities associated with project build-out and operations at the project site may result in increased GHG emissions.*

Proposed Project Alternative– As shown in Table 3.16-2, the direct GHG emissions associated with operations outlined under the Proposed Project Alternative would be approximately 57,482 metric tons of CO_2e per year. As discussed in Section 3.16.4.1 (Thresholds of Significance), GHGs resulting from the implementation of the project may have a significant impact if it is anticipated that the project would cause direct emissions of 25,000 metric tons or more of CO_2e emissions on an annual basis. However, as stated in the Draft NEPA Guidance, "The reference point of 25,000 metric tons of direct CO_2e GHG emissions may provide agencies with a useful indicator – rather than an absolute standard of insignificant effects for agencies' action-specific evaluation of GHG emissions and disclosure of that analysis in their NEPA documents. CEQ does not propose this as an indicator of a threshold of significant effects, but rather as an indicator of a minimum level of GHG emissions that may warrant some description in the appropriate NEPA analysis for agency actions involving direct emissions of GHGs." In other words, if a proposed action would be reasonably anticipated to cause direct emissions of 25,000 metric tons of CO_2e or more on an annual basis, agencies should consider this an indicator that a quantitative and qualitative assessment may be meaningful to decision makers and the public.

To comply with the Draft NEPA Guidance, a quantitative and qualitative assessment for the Proposed Project Alternative is included throughout this Climate Change section. In addition, to reduce the long-term operation-related GHG emissions for the Proposed Project Alternative as much as possible, Mitigation Measure 3.16-1 would be implemented as recommended in the SMAQMD December 2009 CEQA Guide. Therefore, the long-term increase in operation-related GHG emissions for the Proposed Project Alternative would be **less than significant with mitigation**.

Reduced Footprint Alternative – Under the Reduced Footprint Alternative, only 2,511 single family homes would be constructed. As shown in Table 3.16-2, this reduction in housing would result in direct GHG operational emissions of approximately 47,460 metric tons of CO_2e per year.

To comply with the Draft NEPA Guidance, a quantitative and qualitative assessment for the Reduced Footprint Alternative is included throughout this Climate Change section. In addition, to reduce the long-term operation-related GHG emissions for the Reduced Footprint Alternative as much as possible, Mitigation Measure 3.16-1 would be implemented as recommended in the SMAQMD December 2009 CEQA Guide. Therefore, the long-term increase in operation-related GHG emissions for the Reduced Footprint Alternative would be **less than significant with mitigation**.

No Action Alternative - Under the No Action Alternative, only 2,060 single family homes would be constructed. Also, the park and commercial space acreage would be reduced as shown in Table 2-1. Based on this reduction in housing and park and commercial space acreage, the direct GHG emissions associated with operations outlined under the No Action Alternative would be approximately 36,885 metric tons of CO_2e per year (Table 3.16-2).

To comply with the Draft NEPA Guidance, a quantitative and qualitative assessment for the No Action Alternative is included throughout this Climate Change section. In addition, to reduce the long-term operation-related GHG emissions for the No Action Alternative as much as possible, Mitigation Measure

3.16-1 will be implemented as recommended in the SMAQMD December 2009 CEQA Guide. Therefore, the long-term increase in operation-related GHG emissions for the No Action Alternative would be **less than significant with mitigation**.

Mitigation Measure 3.16-1: Implement Additional Measures to Reduce Operational GHG Emissions.

Proposed Project Alternative, Reduced Footprint Alternative, and the No Action Alternative – For each increment of new development, it is anticipated that the project applicant(s) will incorporate in the project design, to the extent feasible, GHG reduction measures recommended by the City of Rancho Cordova. Furthermore, it is anticipated that the project applicant(s) will coordinate directly with the City to identify which GHG reduction measures are feasible and which are considered infeasible. The City retains discretionary approval authority to determine the project applicant(s) compliance with the GHG reduction measures for the applicable increment of development.

The City's list of potentially feasible GHG reduction measures will be developed based upon consideration of the SMAQMD's Guidance for GHG Reduction prepared as part of the SMAQMD December 2009 CEQA Guide (CEQA, 2009). The current GHG reduction measures provided in the SMAQMD's Guidance for GHG Reduction is not intended to be exhaustive, as GHG emission reduction strategies and their respective feasibility are likely to evolve over time. Based on the land uses of the Proposed Project Alternative, the Reduced Footprint Alternative, and the No Action Alternative, the GHG reduction measures from SMAQMD's current Guidance for GHG Reduction outlined in Table 3.16-3 should be considered for the list of potentially feasible GHG reduction measures (as applicable).

Table 3.16-3
Potential GHG Reduction Measures

SMAQMD Measure Number	Measure Name	Land Use Type[1]	Description
Bicycle/Pedestrian/Transit Measures			
1	Bike Parking	C, M	Non-residential projects provide plentiful short-term and long-term bicycle parking facilities to meet peak season maximum demand
2	End of Trip Facilities	C, M	Non-residential projects provide "end-of-trip" facilities including showers, lockers, and changing space
4	Proximity to Bike Path/Bike Lanes	R, C, M	Entire project is located within ½ mile of an existing Class I or Class II bike lane and project design includes a comparable network that connects the project uses to the existing off-site facility
5	Pedestrian Network	R, C, M	The project provides a pedestrian access network that internally links all uses and connects to all existing or planned external streets and pedestrian facilities contiguous with the project site.
6	Pedestrian Barriers Minimized	R, C, M	Site design and building placement minimize barriers to pedestrian access and interconnectivity. Physical barriers such as walls, berms, landscaping, and slopes between residential and nonresidential uses that impede bicycle or pedestrian circulation are eliminated.

Table 3.16-3 Potential GHG Reduction Measures (continued)			
SMAQMD Measure Number	**Measure Name**	**Land Use Type[1]**	**Description**
Bicycle/Pedestrian/Transit Measures			
7	Bus Shelter for Existing Transit Service	R, C, M	Bus or streetcar service provides headways of one hour or less for stops within 1/4 mile; project provides safe and convenient bicycle/pedestrian access to transit stop(s) and provides essential transit stop improvements (i.e., shelters, route information, benches, and lighting).
8	Bus Shelter for Planned Transit Service	R, C, M	Project provides transit stops with safe and convenient bicycle/pedestrian access. Project provides essential transit stop improvements (i.e., shelters, route information, benches, and lighting) in anticipation of future transit service.
9	Traffic Calming	R, C, M	Project design includes pedestrian/bicycle safety and traffic calming measures in excess of jurisdiction requirements. Roadways are designed to reduce motor vehicle speeds and encourage pedestrian and bicycle trips by featuring traffic calming features.
Parking Measures			
10a	Paid Parking	R, C, M	Employee and/or customer paid parking system.
10b	Parking Cash Out	C, M	Employer provides employees with a choice of forgoing subsidized parking for a cash payment equivalent to the cost of the parking space to the employer.
11	Minimum Parking	R, C, M	Provide minimum amount of parking required. Special review of parking required.
12	Parking Reduction Beyond Code	R, C, M	Provide parking reduction less than code. Special review of parking required. Recommend a Shared Parking strategy.
13	Pedestrian Pathway through Parking	R, C, M	Provide a parking lot design that includes clearly marked and shaded pedestrian pathways between transit facilities and building entrances.
14	Off-Street Parking	R, C, M	Parking facilities are not adjacent to street frontage.
Site Design Measures			
15	Office/Mixed-Use Density	C, M	Project provides high density office or mixed-use proximate to transit.
16	Orientation Toward Existing Transit, Bikeway, or Pedestrian Corridor	R, C, M	Project is oriented towards existing transit, bicycle, or pedestrian corridor. Setback distance is minimized.

Table 3.16-3 Potential GHG Reduction Measures (continued)			
SMAQMD Measure Number	**Measure Name**	**Land Use Type[1]**	**Description**
Site Design Measures			
17	Orientation Toward Existing Transit, Bikeway, or Pedestrian Corridor	C, M	Project is oriented towards planned transit, bicycle, or pedestrian corridor. Setback distance is minimized.
18	Residential Density	R	Project provides high-density residential development.
19	Street Grid	R, C, M	Multiple and direct street routing (grid style).
20	Neighborhood Electric Vehicle Access	R, C, M	Make physical development consistent with requirements for neighborhood electric vehicles.
21	Affordable Housing Component	R	Residential development projects of 5 or more dwelling units provide a deed-restricted low-income housing component on-site (as defined in Ch 22.35 of Sacramento County Ordinance Code) [Developers who pay into In-Lieu Fee Programs are not considered eligible to receive credit for this measure].
Mixed-Use Measures			
23	Suburban Mixed-Use	R, C, M	Have at least three of the following on-site and/or off-site within ¼ mile: Residential Development, Retail Development, Park, Open Space, or Office.
24	Other Mixed-Use	R, M	All residential units are within ¼ mile of parks, schools, or other civic uses.
Building Component Measures			
27b	Energy Star Roof	R, C, M	Install Energy Star labeled roof materials.
28	On-site Renewable Energy System	R, C, M	Project provides on-site renewable energy system(s).
29	Exceed Title 24	R, C, M	Project exceeds Title 24 requirements by 20%.
30	Solar Orientation	R	Orient 75 or more percent of homes and/or buildings to face either north or south (within 30 degrees of N/S).

Table 3.16-3
Potential GHG Reduction Measures (continued)

SMAQMD Measure Number	Measure Name	Land Use Type[1]	Description
Building Component Measures			
31	Non-Roof Surfaces	R, C, M	Provide shade (within 5 years) and/or use light-colored/high-albedo materials (reflectance of at least 0.3) and/or open grid pavement for at least 30% of the site's non-roof impervious surfaces, including parking lots, walkways, plazas, etc.; OR place a minimum of 50% of parking spaces underground or covered by structured parking; OR use an open-grid pavement system (less than 50% impervious) for a minimum of 50% of the parking lot area. Unshaded parking lot areas, driveways, fire lanes, and other paved areas have a minimum albedo of .3 or greater.
32	Green Roof	R, C, M	Install a vegetated roof that covers at least 50% of roof area.
TDM and Misc. Measures			
33	Transportation Management Association Membership	R, C, M	Include permanent TMA membership and funding requirement. Funding to be provided by Community Facilities District or County Service Area or other non-revocable funding mechanism.
34	Electric Lawnmower	R	Provide a complimentary electric lawnmower to each residential buyer.

[1] R = Residential, C= Commercial, M = Manufacturing
Source: SMAQMD's Guidance for GHG Reduction

IMPACT 3.16-3 – Potential to conflict with or obstruct implementation of GHG reduction measures or goals under AB 32. *All three project alternatives may result in an increase in short-term and long-term GHG emissions.*

Proposed Project Alternative, Reduced Footprint Alternative, and No Action Alternative – AB 32 requires CARB to design and implement emission limits, regulations, and other measures, such that feasible and cost-effective statewide GHG emissions are reduced to 1990 levels by 2020 (representing an approximate 30% reduction in GHG emissions). Under all three alternatives, short-term and long-term GHG emissions would be emitted, potentially conflicting with or obstructing the implementation of the GHG reduction measures or goals under AB 32.

CARB's 44 Early Action Strategies

In order to achieve CARB's GHG emissions reduction goals, CARB has recommended the implementation of 44 early actions to reduce GHG emissions under AB 32. As outlined in the AB 32 timeline, all of these measures need to be in place and operative by January 1, 2012. Therefore, evaluating the project to ensure that it will comply with CARB's 44 early action strategies will be a qualitative measure to determine if the project conflicts with or obstructs implementation of GHG reduction measures or goals under AB 32.

As shown in Table 3.16-4, CARB's 44 early action strategies are in the sectors of fuels, transportation, forestry, agriculture, education, energy efficiency, commercial, solid waste, cement, oil and gas, electricity, and fire suppression.

Table 3.16-4
Recommended AB 32 GHG Measures to be Initiated by CARB

ID #	Sector	Strategy Name	ID #	Sector	Strategy Name
1	Fuels	Above Ground Storage Tanks	23	Commercial	SF6 reductions from the non-electric sector
2	Transportation	Diesel – Off-road equipment (non-agriculture)	24	Transportation	Tire inflation program
3	Forestry	Forestry protocol endorsement	25	Transportation	Cool automobile paints
4	Transportation	Diesel – Port trucks	26	Cement	Cement (A): Blended cements
5	Transportation	Diesel – Vessel main engine fuel specifications	27	Cement	Cement (B): Energy efficiency of California cement facilities
6	Transportation	Diesel – Commercial harbor craft	28	Transportation	Ban on HFC release from Motor Vehicle AC service/ dismantling
7	Transportation	Green ports	29	Transportation	Diesel – off-road equipment (agricultural)
8	Agriculture	Manure management (methane digester protocol)	30	Transportation	Add AC leak tightness test and repair to Smog Check
9	Education	Local gov. Greenhouse Gas (greenhouse gas) reduction guidance / protocols	31	Agriculture	Research on greenhouse gas reductions from nitrogen land applications
10	Education	Business greenhouse gas reduction guidance/ protocols	32	Commercial	Specifications for commercial refrigeration
11	Energy Efficiency	Cool communities program	33	Oil and Gas	Reduction in venting / leaks from oil and gas systems
12	Commercial	Reduce high Global Warming Potential (GWP) greenhouse gases in products	34	Transportation	Requirement of low-GWP greenhouse gases for new Motor Vehicle ACs
13	Commercial	Reduction of PFCs from semiconductor industry	35	Transportation	Hybridization of medium and heavy-duty diesel vehicles
14	Transportation	SmartWay truck efficiency	36	Electricity	Reduction of SF6 in electricity generation
15	Transportation	Low Carbon Fuel Standard (LCFS)	37	Commercial	High GWP refrigerant tracking, reporting prog.
16	Transportation	Reduction of HFC-134a from DIY Motor Vehicle AC servicing	38	Commercial	Foam recovery / destruction program

Table 3.16-4 Recommended AB 32 GHG Measures to be Initiated by CARB (continued)					
17	Waste	Improved landfill gas capture	39	Fire Suppression	Alternative suppressants in fire protection systems
18	Fuels	Gasoline dispenser hose replacement	40	Transportation	Strengthen light-duty vehicle standards
19	Fuels	Portable outboard marine tanks	41	Transportation	Truck stop electrification with incentives for truckers
20	Transportation	Standards for off-cycle driving conditions	42	Transportation	Diesel – Vessel speed reductions
21	Transportation	Diesel – Privately owned on-road trucks	43	Transportation	Transportation refrigeration – electric standby
22	Transportation	Anti-idling enforcement	44	Agriculture	Electrification of stationary agricultural engines

Although the Proposed Project Alternative consists of primarily residential uses, the potential impacts from the implementation of the project were compared to the early action strategies for commercial sectors for uses that might occur in the commercial zones of the Proposed Project Alternative. Of the 44 early action strategies shown in Table 3.16-4, 3 of the 6 that apply to commercial sectors may be relevant to the Proposed Project Alternative commercial uses.

#12: Reduce high Global Warming Potential (GWP) greenhouse gases in products: This strategy involves the reduction of high-GWP GHGs used as propellants in aerosol products, tire inflators, electronics cleaning, dust removal, hand held sirens, hobby guns (compressed gas), party products (foam string), and other formulated consumer products when viable alternatives are available. Manufacturers are currently being surveyed to determine the extent of usage of high GWP gases in several more categories of consumer products. Once this early action strategy is implemented by CARB, the commercial facilities on the project site will only use products that are in compliance with this strategy.

#32: Specifications for commercial refrigeration: The strategy involves regulatory measures to require supermarket leak tightness and advanced design requirements for new systems as well as energy efficiency measures for new and existing systems. Direct and indirect emissions need to be considered together over the lifetime of the RAC equipment, so that choices made to reduce direct emissions (e.g., low-GWP refrigerants or stand-alone systems) do not adversely impact energy consumption and vice versa. Once this early action strategy is implemented by CARB, all commercial facilities on the project site will comply with the requirements outlined for commercial refrigeration systems.

#37: High GWP refrigerant tracking, reporting and recovery program: This strategy involves the following: 1) expanding and enforcing the national ban on venting high-GWP greenhouse gases (including fully emissive processes) during equipment/process lifetime; 2) requiring high-GWP greenhouse gas sales, use and energy use reporting as well as inspection and maintenance (I/M) and leak repair for equipment, cylinders, products, or systems with capacities above some CO_2e threshold; 3) requiring technician certification for sales, purchase, transport, recovery, reclamation, resale, I/M; and 4) establishing a high-GWP greenhouse gas deposit program and/or fines for emissive processes or leaky systems. Once this early action strategy is implemented by CARB, all commercial facilities on the project site will comply with the requirements outlined for commercial refrigeration systems.

Based on the discussion above, the project would not conflict or obstruct the implementation of CARB's 44 early action strategies that pertain to commercial projects under any of the three alternatives. Therefore, the potential impact would be **less than significant**.

Mitigation Measure 3.16-2: Implementation of GHG Mitigation Measures.

To avoid potentially conflicting with or obstructing the implementation of the GHG reduction measures or goals under AB 32, the project applicants will implement mitigation measures that reduce GHG emissions to the extent feasible with respect to the state's progress (at the time) toward meeting GHG emissions reductions required by AB 32. It is anticipated that for each increment of new development within the project site requiring a discretionary approval (e.g., tentative subdivision map, conditional use permit, improvement plan), the City of Rancho Cordova will impose mitigation measures that reduce GHG emissions as outlined in Mitigation Measure 3.16-1. As such, the project's potential impact on GHG emissions and climate change under AB 32 would be **less than significant with mitigation**.

IMPACT 3.16-4 –Effects of climate change on the project. *Water supply and stormwater features of all three alternatives may be affected by climate change..*

Proposed Project Alternative, Reduced Footprint Alternative, and No Action Alternative – The potential impacts of climate change most likely to affect the project alternatives are: (1) a reduced snowpack that reduces available water supplies and (2) an increase in winter storm severity that affect peak stream flows and flooding. While these impacts may occur, it is not currently feasible to predict how these changes could affect the project alternatives. The project will be constructed in accordance with regional, state, and federal codes concerning water supply and flood prevention/drainage. Also, during the construction of the project, precautions will be taken to reduce (to the extent feasible) runoff from the site. Therefore, the effects of climate change on the project would be **less than significant**.

IMPACT 3.16-5 –Effects of climate change on project impacts. *Air quality, water supply, stormwater, and biological impacts of all three alternatives may be affected by climate change..*

Proposed Project Alternative, Reduced Footprint Alternative, and No Action Alternative – Project impacts on air quality, water supply, stormwater, and plant and wildlife species may be exacerbated by climate change impacts to these same resources. Possible impacts are too speculative to estimate at this time; therefore, it is assumed that the effects of climate change on project impacts would be **less than significant**.

4 CUMULATIVE EFFECTS AND OTHER NEPA ANALYSES

NEPA requires an analysis of the impacts of the proposed action combined with the impacts of other past, present, and reasonably foreseeable future projects producing related impacts. The proposed action, combined with other past, present, and reasonably foreseeable future projects, is called the "cumulative condition." The purpose of this analysis is twofold: first, to determine whether the overall long-term impacts of all projects would be cumulatively significant and, second, to determine whether the proposed action would cause a "cumulatively considerable" incremental contribution to a significant cumulative impact. The required analysis first creates a broad context in which to assess the project's incremental contribution to anticipated cumulative impacts, viewed on a geographic scale beyond the project site.

The CEQ regulations implementing provisions of NEPA define cumulative impacts as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such other actions" (40 CFR §1508.7). Cumulative effects can result from individually minor, but collectively significant, actions over time (40 CFR §1508.8). They are caused by the incremental increase in total environmental effects when the evaluated project is added to other past, present and reasonably foreseeable future actions. Cumulative impacts can thus arise from causes that may be unrelated to the project being evaluated, and the analysis of cumulative impacts looks at the duration of the effects.

In a cumulative analysis, a stress is any change to the environment that has the potential to adversely affect resources in and around the project area. The goal of the cumulative analysis is to determine whether the resources, ecosystems, and human communities of concern are approaching conditions where a small additional stress will have an important cumulative effect. The cumulative effects analysis should:

1. Define a baseline condition for the resources using historical trends;

2. Characterize the current status of the resources, ecosystems, and human communities;

3. Characterize the regional landscape in terms of historical and planned development and the constraints of governmental regulations and standards;

4. Identify common cumulative effects within the region; and,

5. Identify socioeconomic driving variables and indicators of stress on these resources (CEQ, 1997).

4.1 SCOPE OF RESOURCE ANALYZED

Based on the impact analysis presented in Chapter 3, the scope of the resources to be evaluated in the cumulative effects analysis are those specific resource impacts for which the Proposed Project Alternative might result in a "cumulatively considerable" incremental contribution to a significant cumulative impact. Therefore, some of the impacts analyzed in Chapter 3 are not carried forward for evaluation in the cumulative effects analysis. Impact analyses were carried forward to the cumulative analysis for biological resources, surface water quality, surface and groundwater supply, air quality, traffic and

transportation, noise, public health, visual resources, and climate change. The impact statements, geographic scope and time frame for each resource are listed in Table 4-1.

4.1.1 GEOGRAPHIC SCOPE

The geographic area that could be affected by the project varies depending on the environmental resource being considered. The general geographic area associated with different environmental effects of the project defines the boundaries of the area used for compiling the list of projects considered in the cumulative impact analysis.

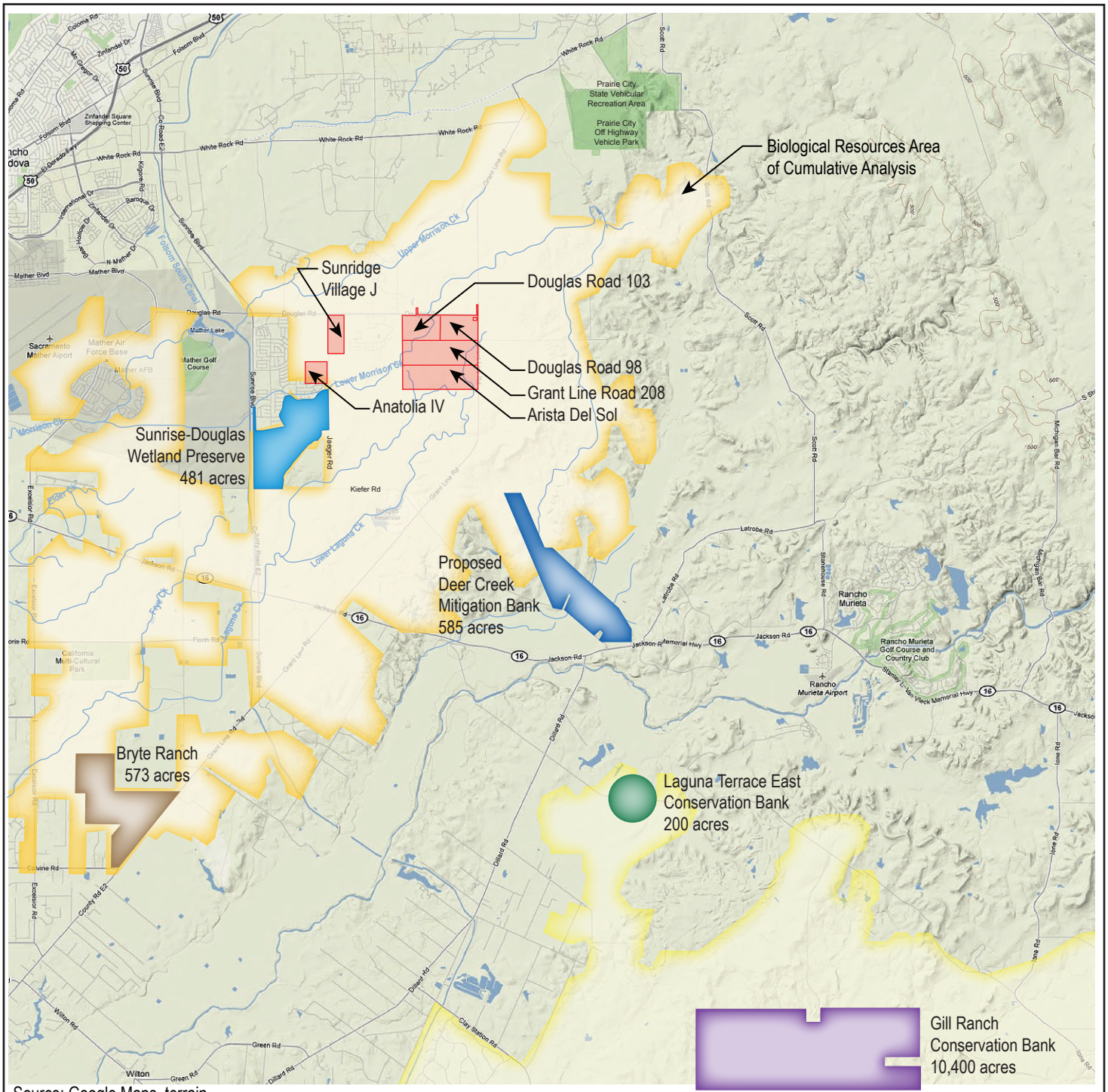
When analyzing the contribution of the project to cumulative effects, the geographic boundaries of the analysis almost always must be expanded (CEQ, 1997). Cumulative effects analyses should be beyond the scale of "counties, forest management units, or installation boundaries," instead, they should be "conducted on the scale of human communities, landscapes, watersheds, or airsheds" (CEQ, 1997). To consider the effects of the project in combination with other past, present, and reasonably foreseeable future projects, the scale is enlarged so that the appropriate impact zone is included to determine the cumulative impacts. Table 4-1 presents the geographic study areas used for the resources addressed in this cumulative analysis.

The areas of analysis for biological resources and visual resources are expanded for the cumulative effects analysis so that the effects of the Proposed Action can be considered in combination with related projects. The geographic scope for analyzing cumulative effects to vernal pools is the Mather Core Vernal Pool Area. A discussion of the loss of vernal pools in California, Central Valley and southern Sacramento County is also included as context. The geographic scope for biological resources for the cumulative analysis is depicted on Figure 4.2. The area of analysis for visual resources is expanded to include the southeastern Sacramento County to encompass the ongoing urban development in that area. The area of analysis for climate change continues to be the Sunridge Properties, while acknowledging that climate change is a global phenomenon.

4.1.2 TIME FRAME

When analyzing the contribution of the Proposed Action to cumulative effects, the time frame of the analysis must be expanded to consider the effects of the Proposed Project Alternative in combination with other past, present, and reasonably foreseeable future projects. The time frame with which to evaluate cumulative effects varies depending on when the environmental resource began experiencing a significant cumulative impact.

The 1993 Sacramento County General Plan changed the land use designation of large areas of central Sacramento County from agricultural use to residential, commercial, and industrial uses. The City of Rancho Cordova has a policy of rezoning the agricultural land of willing sellers to urban development (Rancho Cordova, 2006), and has approved a substantial amount of urban development on large swaths of land formerly used for agriculture. Therefore, many of the cumulative impact analyses have a starting timeframe of 1993, the date of the Sacramento County General Plan. The time frame that bounds this analysis is 20 to 30 years in the future, when full build-out of currently approved City of Rancho Cordova Specific Plans is expected to occur. Unless otherwise noted in Table 4-1, these are the time frame boundaries for each of the resource areas.



Source: Google Maps, terrain

Figure 4-1. Study Area for Biological Resources Cumulative Analysis

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Table 4-1
Resource Area Impact Analyses and Geographic Scope and Time Frame

Resource Area	Impacts	Geographic Scope	Time Frame
Biological Resources	Threatened, endangered, or candidate species, habitat values of sensitive biological habitat (i.e., vernal pools), migration of wildlife among vernal pool habitats, and population loss of native fish, wildlife, or vegetation.	The Mather Core Vernal Pool Recovery Area as defined in the *Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon* (USFWS 2005) (USFWS Recovery Plan).	Vernal pool losses in the Central Valley began at the onset of expanded European settlement during and after the 1849 gold rush in California. Therefore, the starting point of the analysis is the mid-1800's.
Hydrology, Water Quality, Water Supply, Groundwater	Potential for an increase in the rate and volume of drainage runoff from the sites; potential for discharges that affect surface water quality; potential for changes in groundwater elevations around the Elk Grove Cone of Depression; potential for changes in groundwater elevations adjacent to the proposed well field; potential for migration of lower quality (higher TDS) groundwater in Aquifer 2 up into Aquifer 1; potential for changes in the rate of contaminant plume migration; potential for changes in groundwater elevations in and around known contaminant plumes; increased need for development of long-term regional surface and groundwater supplies.	The land and water bodies within the project sites, as well as Lower Morrison Creek and Upper Laguna Creek downstream of the project site boundaries, the Zone 40 planning area and the Central Sacramento County Groundwater Basin	Based on the 1993 County General Plan, SCWA expanded the boundary of Zone 40 and updated their Water Supply Master Plan based on these new boundaries.
Air Quality	The exposure of future residents to odors from the SRC and long-term increases in ROG, NO_x, and PM_{10} emissions	The Sacramento Valley Air Basin, which is bounded by the North Coast Ranges on the west and the northern Sierra Nevada Mountains on the east	Federal and state regulations and policies generally result in incremental improvements or degradation of regional air quality over a long time period, consistent with full build-out of currently approved County and City Specific Plans in 20 to 30 years

Notes:
NO_x – Nitrous Oxide
PM_{10} – Particulate matter 10 microns in diameter or smaller
ROG – Reactive Organic Gas
SCWA – Sacramento County Water Agency
SRC – Sacramento Rendering Company
TDS – Total Dissolved Solids
USFWS – US Fish and Wildlife Service

Table 4-1
Resource Area Impact Analyses and Geographic Scope and Time Frame (continued)

Resource Area	Impacts	Geographic Scope	Time Frame
Traffic and Transportation	Exacerbate or create conditions that exceed standards for daily or peak hour operations on existing roadways, intersections, and freeway ramps	The road network within and immediately adjacent to Rancho Cordova	From the 1993 County General Plan to full build-out of currently approved County and City Specific Plans in 20 to 30 years.
Noise	Project-generated increases in traffic noise levels on area roadways	The Sunridge Specific Plan area and adjacent communities	From the 1993 County General Plan to full build-out of currently approved County and City Specific Plans in 20 to 30 years.
Public Health	Human health hazards associated with mosquito-borne diseases	The Sunridge Specific Plan area	The timeframe of this analysis is from the 1993 County General Plan to full build-out of currently approved County and City Specific Plans in 20 to 30 years.
Visual Resources	Change of agricultural and open space views in the project region to urban land uses and the associated increase in nighttime light and glare and subsequent skyglow	Southeastern Sacramento County	The timeframe of this analysis is from the 1993 County General Plan to full build-out of currently approved County and City Specific Plans in 20 to 30 years.
Cultural Resources	Potential damage to as-yet-undiscovered prehistoric sites or Native American burials	The Sunridge Specific Plan area and adjacent communities	The timeframe of this analysis is from the 1993 County General Plan to full build-out of currently approved County and City Specific Plans in 20 to 30 years.
Climate Change	Project-generated short- and long-term increase in greenhouse gas (GHG) emissions.	The Sunridge Properties	The timeframe of this analysis is from the 1993 County General Plan to full build-out of currently approved County and City Specific Plans in 20 to 30 years.

Notes:

NO_x – Nitrous Oxide
PM_{10} – Particulate matter 10 microns in diameter or smaller
ROG – Reactive Organic Gas
SCWA – Sacramento County Water Agency
SRC – Sacramento Rendering Company
TDS – Total Dissolved Solids
USFWS – US Fish and Wildlife Service

4.2 PAST, PRESENT, AND REASONABLY FORESEEABLE ACTIONS

Trends analysis of change in the extent and magnitude of stresses is critical for projecting the potential future cumulative effect. Cumulative effects occur through the accumulation of effects over varying periods of time. Therefore, the historical context of effects is critical to assessing the direct, indirect, and cumulative effects of the Proposed Project Alternative. Trends data can be used to:

1. Establish the baseline for the affected environment more accurately;

2. Evaluate the significance of effects relative to historical degradation; and,

3. Predict the effects of the action (i.e., by using the model of cause and effects established by past actions (CEQ, 1997).

A description of past, present, or reasonably foreseeable actions with actual or anticipated adverse or beneficial effects on the identified resource areas follows.

4.2.1 PAST ACTIONS- BIOLOGICAL RESOURCES

Past actions which affected vernal pools and associated special-status species include historical actions which significantly reduced the extent and diversity of ecosystems within the Central Valley and throughout California.

The approximately 7 million acres of vernal pool landscapes present in the 1800s have been much reduced, first by agricultural development and mineral extraction, and more recently by urban expansion (Holland, 2009). Beginning around the mid-1800s, the primary threat to vernal pools was conversion to agriculture and water conveyance and storage projects (Frayer et al. 1989, Kreissman 1991). The most recent estimate of remaining vernal pool habitat was about 967,600 acres in 1997, an 87% reduction in the original habitat acreage (Holland, 1998b). Based on observed species distribution profiles and habitat loss estimates of 50% to 85% modeling has predicted that 15% to 33% of the original biodiversity of Central Valley vernal pool crustaceans has been lost since the 1800s (King, 1998).

Loss of habitat has been even more extensive in areas outside of the Central Valley. Along the Central California coast, at least 90% of historic vernal pools have been destroyed, and most remaining vernal pools have been degraded (Ferren and Pritchett, 1988). In southern California, estimated loss of vernal pool habitat ranges from 95% to nearly 100% (Bauder, 1987; Oberbauer, 1990; Zedler, 1990; Bauder and McMillan, 1998). Urban development has reduced biological resources, including reducing the acreage of vernal pools, throughout the Central Valley, Sacramento County and, specifically, central Sacramento County.

A local example of the impact of historic gold mining in California on native landscapes exists near the project site. Approximately 10,275 acres of land within the Rancho Cordova planning boundaries are categorized as mine tailings. These lands are the alluvial deposit results of large-scale dredge gold mining operations undertaken from the late 1800s to the mid-1900s, and now consist of long rows of 13- to 35-feet tall cobble piles (Lower American River Task Force, 2002).

4.2.2 PAST ACTIONS-OTHER RESOURCE AREAS

Past actions which affected surface water quality, surface and groundwater supply, air quality, traffic and transportation, noise, public health, visual resources, cultural resources, and climate change include the 1993 approval by the Sacramento County Board of Supervisors of a general plan that changed the land use designation of large areas of central and eastern Sacramento County from agricultural uses to residential, commercial, and industrial uses. The 2006 City of Rancho Cordova General Plan reaffirmed this approach within the city limits by establishing a policy of rezoning the agricultural land of willing sellers to urban development (Rancho Cordova, 2006). Surface and groundwater supplies available at that time were insufficient to serve this growth. The Sacramento Valley Air Basin was one of the worst air quality basins in the nation based on federal air quality exceedances. Specific plans were initiated that planned development within 4 miles of the Sacramento Rendering Company (a 4-mile buffer zone is recommended by the SMAQMD for rendering plants). Sacramento traffic on the major highways, Interstates 5 and 80 and Highways 50 and 99, was increasing with each new development outside the urban core. The rural and agricultural visual and noise environment that had defined the outskirts of Sacramento was increasing replaced with urban development on all sides of the City of Sacramento, reducing and removing the undeveloped borders between Sacramento's suburbs and adjacent towns. GHG emissions have been increasing in countries across the globe.

4.2.3 PRESENT ACTIONS-BIOLOGICAL RESOURCES

The past actions described above that significantly altered the vernal pool ecosystems in the Central Valley and throughout California have not been reversed in the present; the extent and diversity of the vernal pool ecosystems and associated special-status species continue to be substantially reduced from their historical presence. Figure 4-1 depicts the extent of vernal pool habitats in the southeastern Sacramento Valley, as well as the Core recovery areas identified in the USFWS Recovery Plan.

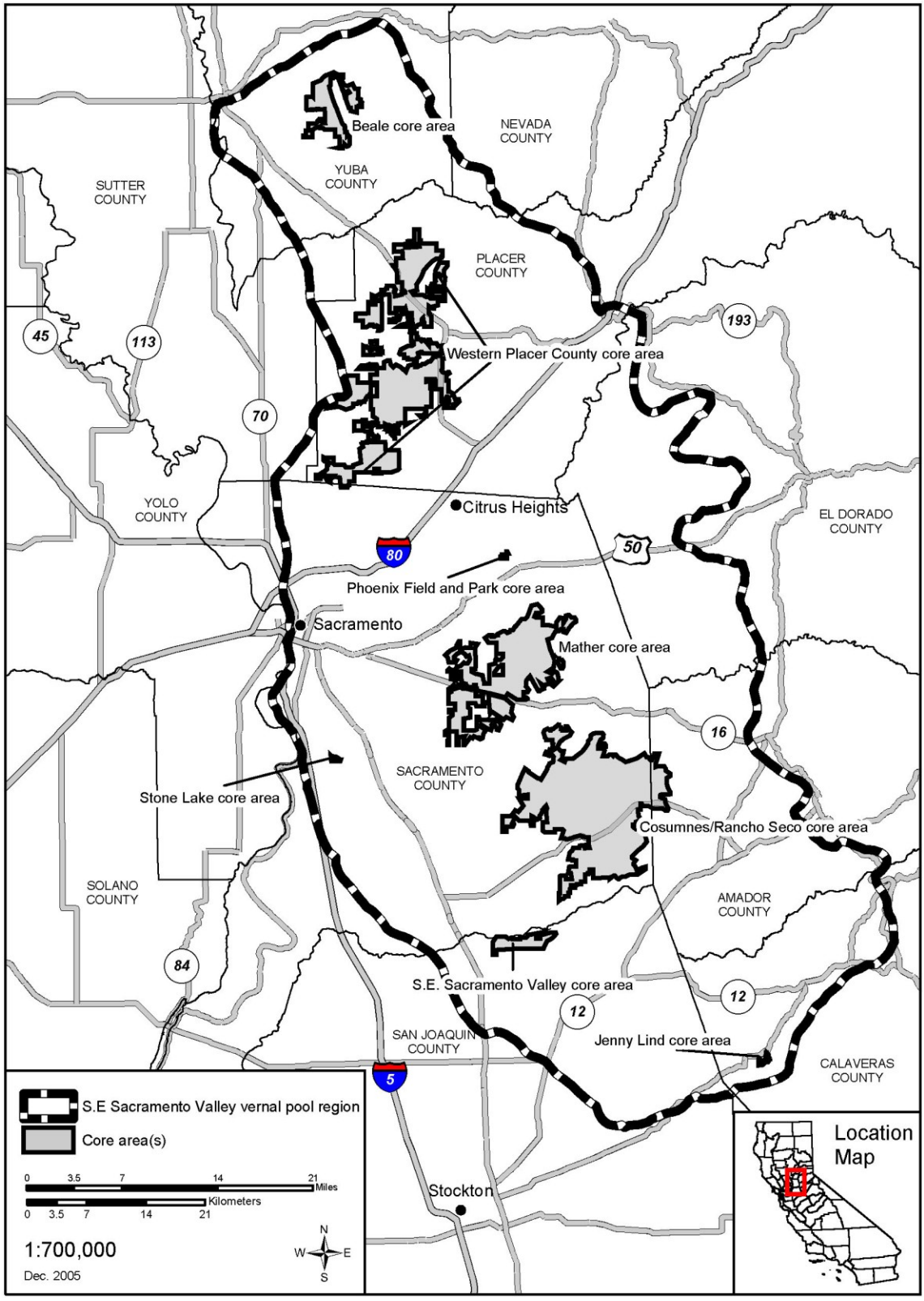
4.2.3.1 CURRENT TRENDS OF HABITAT LOSS

Conversion of vernal pool habitats to intensive agricultural uses continues to contribute to the decline of vernal pools. From 1992 to 1998, 125,591 acres of grazing land were converted to other agricultural uses in the Central Valley of California (USFWS, 2005). It is likely that much of this land supported vernal pools. Holland (2009) estimated that more than 32,000 acres of vernal pool habitats had been lost in the San Joaquin Valley vernal pool region from the late 1980s until 1997, mostly as a result of agricultural conversion (see Table 4-2).

Holland (2009) studied vernal pool habitat losses by County, including total acreage, the rate of habitat losses, the type of land use change that resulted in the loss, and the losses attributable to the type of conversion. The following discussions are from Holland's 2009 study.

Habitat loss rates have accelerated markedly in Madera, Stanislaus, Butte, Fresno, Merced, Kings, Kern, Sacramento, San Joaquin, and Sutter counties between 1997 and 2005. Sacramento County lost 12.5% (6,723 acres) of its vernal pool habitat from 1993 to 2005. Six counties (Colusa, Glenn, Napa, Placer, Sutter, and Yolo) have lost more than 3% of their baseline habitat per year since the baseline mapping year.

Merced County lost 6,073 acres between 1986 and 1997, and 17,779 acres between 1997 and 2005. Placer County lost 10,440 acres between 1986 and 1997, and 6,675 acres between 1997 and 2005. Areas in the central and western portions of the valley (Colusa, Glenn, Sutter, and Yolo counties) have also experienced dramatic declines in the total amount of vernal pool habitat.



Source: USFWS 2005

Figure 4-2 Southeastern Sacramento Valley Vernal Pool Region and Vernal Pool Core Areas

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Table 4-2
Acreage of Vernal Pool Habitat Loss, by County

County	Baseline Year	Mapped Extant			Total Acres Lost			Total Percent Lost		
		Baseline	1997	2005	Base-97	97-05	Base-05	Base-97	97-05	Base-05
Alameda	1986	2,751	2,402	2,006	348	396	745	12.7%	14.4%	27.1%
Amador	1983	4,242	4,242	3,972	--	270	270	0.0%	6.4%	6.4%
Butte	1994	59,166	58,714	53,540	452	5,174	5,626	0.8%	8.7%	9.5%
Calaveras	1983	6,419	6,419	5,918	--	501	501	0.0%	7.8%	7.8%
Colusa	1993	5,703	4,410	2,110	1,293	2,300	3,593	22.7%	40.3%	63.0%
Contra Costa	1985	3,150	3,150	3,131	--	19	19	0.0%	0.6%	0.6%
El Dorado	1983	1,274	1,274	1,018	--	256	256	0.0%	20.1%	20.1%
Fresno	1994	27,690	27,539	25,491	151	2,048	2,199	0.5%	7.4%	7.9%
Glenn	1993	10.803	8,113	6,553	2,690	1,560	4,250	24.9%	14.4%	39.3%
Kern	1990	9,543	9,455	8,681	88	774	862	0.9%	8.1%	9.0%
Kings	1991	11,951	11,662	9,676	289	1,986	2,275	2.4%	16.6%	19.0%
Lake	1995	2,541	2,541	2,410	--	131	131	0.0%	5.2%	5.2%
Madera	1987	94,054	90,357	79,707	3,697	10,650	14,347	3.9%	11.3%	15.3%
Marin	1986	260	260	162	--	98	98	0.0%	37.7%	37.7%
Mariposa	1976	6,553	6,553	6,553	--	--	--	0.0%	0.0%	0.0%
Merced	1987	285,215	279,142	261,363	6,073	17,779	23,852	2.1%	6.2%	8.4%
Napa	1987	1,207	994	165	213	829	1,042	17.6%	68.7%	86.3%
Placer	1994	48,298	37,858	31,183	10,440	6,675	17,115	21.6%	13.8%	35.4%
Sacramento	1993	53,757	53,583	47,034	174	6,549	6,723	0.3%	12.2%	12.5%
San Joaquin	1988	37,976	36,527	29,615	1,449	6,912	8,361	3.8%	18.2%	22.0%
Shasta	1995	24,034	23,937	23,019	97	918	1,015	0.4%	3.8%	4.2%
Solano	1994	38,897	37,334	35,401	1,563	1,933	3,496	4.0%	5.0%	9.0%
Sonoma	1986	4,466	3,925	2,464	541	1,461	2,002	12.1%	32.7%	44.8%
Stanislaus	1988	92,346	91,025	78,074	1,321	12,951	14,272	1.4%	14.0%	15.5%
Sutter	1990	1,444	1,374	700	70	674	744	4.8%	46.7%	51.5%
Tehama	1994	137,902	134,641	126,862	3,261	7,779	11,040	2.4%	5.6%	8.0%
Tulare	1993	38,223	36,442	30,974	1,781	5,468	7,249	4.7%	14.3%	19.0%
Tuolumne	1976	4,164	4,164	4,081	--	83	83	0.0%	2.0%	2.0%
Yolo	1989	3,617	2,640	901	977	1,739	2,716	27.0%	48.1%	75.1%
Yuba	1995	14,337	14,061	13,035	276	1,026	1,302	1.9%	7.2%	9.1%
Totals		1,031,983	994,738	895,798	37,245	98,940	136,185	3.6%	9.6%	13.2%
Map Error		928			--	928	928			
Net Loss					99,868	137,113			9.7%	13.3%

Source: Holland 2009

Eighty-one percent of the total habitat loss between the baseline year (ranging from 1976 to 1995) and 2005 was lost due to agricultural land conversions. Nearly two-thirds of the loss was concentrated in Merced, Stanislaus, and San Joaquin counties, and much of the remaining loss was in Madera, Glenn and Colusa counties.

Land conversions tied to population growth and urban development accounted for almost 26,000 acres, or 19%, of habitat loss. Thirteen percent of all Central Valley loss of vernal pools due to urban development occurred in Sacramento County; 59% occurred in Placer County. Urbanization exceeds agricultural development as the primary cause of vernal pool habitat loss only in Placer County. Overall, agricultural

land conversions, mostly for orchards and vineyards, have far exceeded urbanization as a cause of vernal pool habitat loss, contributing 81% of total habitat loss. Most of the loss due to orchard and vineyard development occurred in the southern Sacramento Valley and northern San Joaquin Valley (Placer Land Trust, 2009).

Many agricultural conversions of vernal pool systems are unauthorized and are, therefore, largely unmitigated. Although little to no vernal pool habitat is being created or preserved to compensate for the losses due to unauthorized agricultural development; restoration, creation and preservation, of vernal pools is generally required for urban development to mitigate vernal pool impacts as required by the USACE' "no net loss" policy.

Through Section 7 of the Endangered Species Act (ESA), the Sacramento U.S. Fish and Wildlife (USFWS) Office has also reviewed the conversion of vernal pool habitats to other uses since 1994 (a more recent baseline than most of the County-based baseline years used by Holland) (USFWS, 2005). Almost 50,000 acres of vernal pool habitats across California were lost, over half (25,000 acres) was the result of residential, commercial, and industrial development projects, and more than 15,000 acres of vernal pool habitats to intensive agricultural uses. In more recent years, the vernal pool habitats have been lost primarily as a result of widespread urbanization. The construction of infrastructure associated with urbanization also has contributed greatly to the loss and fragmentation of vernal pool plant and crustacean populations, including the construction of highways, wastewater treatment plants, sewer lines, water supply projects, and other utility projects. Some of these impacts to vernal pool habitat have been offset, in part, by compensation which includes the preservation and long-term management of vernal pool habitat for the benefit of the listed species as terms and conditions of Section 7 consultations.

4.2.3.2 USFWS VERNAL POOL RECOVERY PLAN

All species addressed in the USFWS Vernal Pool Recovery Plan are threatened by habitat loss and fragmentation. Although habitat protection of remaining vernal pools and vernal pool complexes in the vernal pool regions is a long-term goal, the "Core Areas" identified are targeted as the initial focus of protection measures. Core Areas are the specific sites that are necessary to recover these endangered or threatened species or recover or to conserve the species of concern addressed in the USFWS Recovery Plan. As seen on Figure 4-2, the Proposed Project Alternative is located within the Mather Core Area identified in the USFWS Recovery Plan. The Mather Core Area is ranked as Priority Zone 1 for recovery. The Mather Core Area was ranked Priority 1 due to the presence of four threatened and endangered species, the slender Orcutt grass, the Sacramento Orcutt grass, the vernal pool fairy shrimp, and the vernal pool tadpole shrimp, as well as the high number of rare species in the area. The Mather Core Area contains the highest concentration of vernal pool tadpole shrimp occurrences throughout their ranges. Similarly the Mather Core Area contains the most occurrences of Sacramento Orcutt grass. Habitat preservations rates for the Mather Core Area range between 85% for vernal pool fairy shrimp and Sacramento Orcutt grass to 95% for vernal pool tadpole shrimp and Sacramento Orcutt grass.

Two vernal pool conservation banks have been approved by the USFWS within the Mather Core Vernal Pool Recovery Area: Bryte Ranch and the Sunrise Douglas Conservation Bank(see Table 4-3 and Figure 4-2). A proposed mitigation bank, which lies partly in the Mather Core Area, is currently being evaluated by an interagency review team. The proposed 585-acre Deer Creek Mitigation Bank is located along Deer Creek near Kiefer Boulevard and the Jackson Highway (see Figure 4-2).

There are a number of other conservation/preservation and mitigation banks in the region previously approved by the USFWS and/or USACE that are outside the Mather Core. These banks, some of which were approved prior to the Recovery Plan, have service areas that include the area of the Mather Core and have sold credits for projects in the Mather Core.

For projects in the Mather Core Area, the USACE has for several years found that conservation and compensatory mitigation requirements for species stipulated in biological opinions were appropriate for meeting its "no net loss" goal for impacts to aquatic resources.

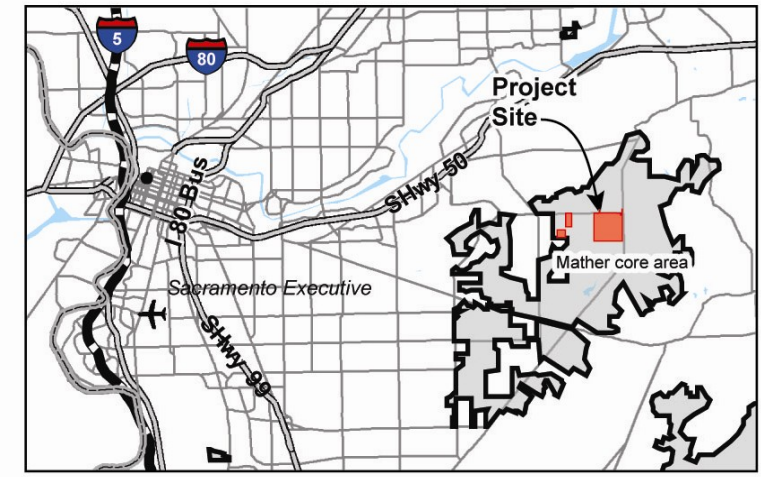

Figure 4-3 Mather Core Area Map

Table 4-3
The USFWS-Approved Vernal Pool Conservation Banks within the Mather Core Vernal Pool Recovery Area

	Acres	Vernal Pool Credits
Bryte Ranch	573	157.85
Sunrise-Douglas Conservation Bank	482	50

4.2.3.3 OFF-SITE CONSTRUCTED VERNAL POOLS

Off-site construction of vernal pools as a mitigation strategy has been a tool used in recent decades. However, studies that have been performed on these created vernal pools have indicated mixed results.

In a 1994 mitigation follow-up study, the USFWS concluded that constructed wetlands which met performance standards and permit compliance often did not fully replace the habitat values lost (Weese, 1998). A 1996 mitigation follow-up study compared site specific monitoring regimes at 25 vernal pool mitigation sites that were compensatory mitigation for projects permitted by the USACE (Weese, 1998). The study attempted to determine whether the performance standards were sufficient to assure successful habitat replacement. The study found that the constructed wetlands often did not follow the USFWS Vernal Pool Mitigation and Monitoring Guidelines (USFWS, 1994) with respect to: site selection; construction techniques; reference pools; hydrology staff gauges; vegetation, wildlife, and listed invertebrates measurement; water quality monitoring; site maintenance inspections; and, performance standards. Of the 1,543 vernal pools constructed at the 25 sites, 96% of the pools met hydrology standards, 69% met vegetation standards, and 83% met permit compliance. There were significant issues with regard to poor site locations, poor construction techniques, and lack of routine inspections for general site maintenance. In contrast to USFWS recommendations, 95% of the projects stored the inoculum (the topsoil and organic seed-bearing material removed from impact site vernal pools for placement in constructed pools) for more than one year after collection, with poor flora performance results evident at those sites in the first three years of monitoring.

Ambrose (1999) reviewed numerous surveys of wetland mitigation conducted nationwide, but particularly in California, and discovered that wetland functions and values are generally not replaced. Permit conditions often rely on qualitative assessment approaches that "focus on vegetation and other easily reviewed aspects of a site, overlooking important wetland functions." For example, permit conditions often focus on plant survivorship or cover, rather than the replacement of natural wetland functions. Ambrose reports on a function-based assessment approach that used quantitative measures of hydrology, biogeochemistry, and habitat to provide an indication of wetland functions at 40 mitigation sites. None of the sites was found to be successful. However, the primary reason for failure was the lack of proper hydrology, specifically stream channels-there was no overbank flooding at any of the sites, which were classified as lower perennial riverine habitat. In conclusion, Ambrose suggests that wetland restoration or creation be considered "experimental."

Ambrose et al. (2007) evaluated mitigation at 129 sites across California. Results were similar to his previous study in that the researchers found that the permittees were meeting their mitigation obligations, but the ecological conditions at the sites had not replaced the wetland functions lost to development. The results were "at least partly due to regulatory agencies approving mitigation projects with conditions or criteria that are too heavily focused on the vegetation component of wetland function, with inadequate emphasis on hydrological and biogeochemical conditions and their associated functions and services (e.g., flood attenuation, water quality improvement)."

A recent study of Central Valley vernal pools (Placer Land Trust, 2009) examined 12 small vernal pool preserves, chosen partly because they are commonly used to preserve populations of threatened and endangered plants. Many of the preserve managers reported that the preserves' ecological integrity was threatened from public trespass, vandalism, trash dumping, domestic animal use, and similar activities, and that the condition of the preserve had declined since establishment.

Ferren (2006) has described the successful restoration of vernal pools at the Del Sol Open Space and Vernal Pool Reserve in Santa Barbara. Ten years of pre- and post-construction habitat monitoring data demonstrated that enhanced, restored and created-inoculated pools can be self-sustaining. These restored vernal pools provided a broad array of ecosystem structure and functions similar to those of naturally-occurring vernal pools. The created-uninoculated vernal pools, however, failed to establish some biological functions, particularly for native vernal pool plants. Ferren concluded that the creation of vernal pools requires the addition of seed bank materials and/or plants to establish vernal pool structure and functions that are consistent with the variability of natural vernal pools. Ferren adds that the Del Sol project "has proven to be successful in large part because the landscape in which is occurs is not entirely destroyed in spite of two centuries of land use. This emphasizes the importance of protecting extant natural habitat. Use of extant examples of natural habitat as reference sites in the design and monitoring of artificial habitat and as donor habitats for the translocation of seed bank material, seeds, plants, and animals of local genotypes is essential to the effort to recover lost or damaged systems and declining species."

The USFWS Recovery Plan also reports on studies which demonstrate concerns regarding constructed vernal pools. Noss et al. (2002), in discussing creation projects, state "that most apparently successful projects are less than 10 years old and the long-term trends and sustainability of vernal pool flora, invertebrates, and amphibians have not been verified. For this reason, preservation must be the fundamental strategy in maintaining vernal pool ecosystems within the planning area." Showers (2005) states that vernal pool creation is considered an experimental science because the extent to which entire vernal pool plant and invertebrate communities can be successfully recreated is still unknown. Therefore, the USFWS Recovery Plan establishes the order of preference of habitat protection as, first, preservation of existing natural vernal pool habitat, followed by restoration of former or degraded habitat, and lastly, creation of vernal pools if necessary to maintain the range of vernal pool habitat.

Many of the studies cited above may have limited usefulness for evaluating the success of recently restored and constructed vernal pools as these studies took place before the USFWS and the USACE began providing increased attention to compliance standards with respect to vernal pool restoration methods and long-term management. Regardless, it is clear from the studies that vernal pool mitigation is inherently risky and requires careful attention from the agencies. Furthermore, the evaluation and reporting of vernal pool construction and restoration has been hampered by the different success criteria used by different agencies. USACE is currently working with other agencies to provide improved guidelines for vernal pool mitigation.

4.2.3.4 CURRENT TRENDS OF HABITAT GAIN

California's Natural Resouces Agency produced a report on the State of the State's Wetlands in 2009 which identified trends in restoration across the state. This report also identifies the low success rates of mitigation projects as reported by the 2007 Ambrose report that was sponsored by the State Water Resources Control Board (SWRCB), but also its impact. "Deficiencies in the federal wetland compensatory mitigation program are currently being addressed through a new 'mitigation rule' issued jointly by the USACE and U.S. Environmental Protection Agnecy (USEPA) and by a 'state wetland and riparian protection policy' under development by the SWRCB."

The report identifies Section 404 of the CWA as the primary policy tool for protecting wetlands, but notes that the scope of the CWA has been narrowed by recent Supreme Court decisions that have removed isolated wetlands and ephemeral streams from federal jurisdiction. The report continues, "Thus wetland protection under the federal program is diminishing, and this effect is amplified since most projects that cannot avoid destroying wetlands are approved if avoidance, minimization and mitigation is carried out." The SWRCB is currently developing a comprehensive wetland and riparian area protection program to "fill the gap" caused by declining federal protections.

The report identifies voluntary programs, whereby local, state and federal agencies work together with conservation agencies and private landowners, as the origin for the vast majority of wetland gains. Public investment in wetland protection and restoration since 1998 has been facilitated by voter-approved bond measures. These monies have been combined with other state funds, as well as federal and local government and private sources. Most of the public investment has been directed toward coastal resources, primarily in the San Francisco Bay and southern California. However, in the last decade, the Central Valley has experienced some of the largest gains in wetland acquisitions and restoration. The report identifies wetland conservation in the Central Valley as particularly important given that this area is expected to experience some of the greatest development pressure over the next 10 to 20 years.

4.2.4 PRESENT ACTIONS-OTHER RESOURCE AREAS

Growth in Sacramento County is on-going and is projected to continue to occur primarily in the cities of Elk Grove and Rancho Cordova and in the community of Natomas, which are the only remaining areas of the county within the Urban Services Boundary (USB) where land is available. Rancho Cordova is located within the eastern portion of Sacramento County, covering approximately 33.6 square miles. The data from the 2000 U.S. Census indicated that the population of Rancho Cordova was 48,731 in 1990. The 2010 census data are not yet available.

Rapid growth is projected for the City of Rancho Cordova. Full buildout of the city is expected by the year 2030. Adding projected development to current residential and commercial development in Rancho Cordova would give an estimate of 310,568 residents, 126,241 dwelling units, and 215,609 jobs in 2030 in the City and its Planning Areas (City of Rancho Cordova, 2006). As part of its general plan process, the City has addressed expected environmental changes such as air quality degradation, traffic congestion, loss of plant or animal habitat, loss of farmland, provision of adequate public services, and other

environmental changes related to urban development; however, impacts are often significant and unavoidable. For example, development increases the traffic and hence the noise levels adjacent to area roadways.

The urban development occurring in the City of Rancho Cordova and Sacramento County continues to contribute to impacts to surface water quality, surface and groundwater supply, air quality, traffic and transportation, noise, public health, visual resources, and climate change.

4.2.5 REASONABLY FORESEEABLE FUTURE ACTIONS

Reasonably foreseeable future actions that are anticipated to affect resource areas analyzed in the cumulative analysis are described below.

4.2.5.1 FUTURE ACTIONS WITHIN THE MATHER CORE VERNAL POOL COMPLEX-ALL RESOURCE AREAS

Vernal pool regions were defined in the USFWS Recovery Plan. As defined in this document, vernal pool regions are discrete units that assist in identifying areas to be conserved for recovery and conservation. Each region is designated based largely by endemic species, with soils and geomorphology as secondary elements. Core areas are distinct areas within each vernal pool region that provide features, populations and distinct geographic and genetic diversity necessary to the recovery of a species. Core areas represent viable populations that contribute to connectivity of habitat and thus increase survival opportunities for vernal pool populations (USFWS, 2005).

The geographic area of this analysis includes 26,000 acres, consisting largely of the Mather Core Area established by the USFWS Recovery Plan. The Mather Core Area is a vernal pool region in eastern Sacramento County (Figure 4-2). The Mather Core Area and the region is experiencing conversion to urban land uses from native, agricultural and industrial use. There are 41 identified projects that have taken place or will take place in the Mather Core Area. Data for these projects were taken from the North Douglas Project Supplemental Environmental Assessment Draft (USACE, 2007), and updated. USACE prepared the list of projects from their electronic database and physical administrative records. As such, the list may not include information about activities that did not require a permit, or were conducted in violation of Section 404 of the Clean Water Act. Some project sites were included due to their proximity to the proposed project as well as their similarity to the proposed project with respect to effects on biological resources.

The 41 identified projects are listed in Table 4-4. Table 4-4 also lists the vernal pool inventory, impacts and mitigation associated with each project. In addition to vernal pool-related impacts, each project would result in the development of the property in a generally similar manner to the Sunridge Properties described in this EIS. For each project, additional housing, roads, schools, parks, and related infrastructure would be developed, resulting in similar impacts to those described for the Sunridge Properties described in this EIS.

Each of these sites that have vernal pool-related impacts would have to mitigate for their impacts according to USACE and USFWS guidelines. USACE requirements for mitigation ratios differ from FWS requirements. USACE generally requires creation or restoration at a greater than 1:1 ratio. The USFWS requires that direct effects to vernal pool habitat be offset through habitat preservation of aquatic habitat at a 2:1 to 4:1 ratio and restoration/creation at a 1:1 ratio. The USFWS requirements are presented in the Biological Opinions the agency prepares for each project following consultation under Section 7 of the ESA. USACE requires the fulfillment of Biological Opinion requirements as a condition of its

permit. Typically applicants will need to create/restore habitat at the USACE ratio and preserve habitat at the USFWS ratio.

Therefore, although most of these projects are located partly or entirely within the Mather Core, any fill of vernal pools would be compensated through on-site and/or off-site preservation and restoration/creation. To ensure the success of this mitigation, both USACE and the USFWS require a conservation Easement, and a Monitoring, Maintenance, and Management Plan, including a funding mechanism. In addition, successful mitigation must include the preservation of sufficient surrounding land to support the aquatic habitat as a part of a functioning vernal pool complex.

Habitat creation/restoration is achieved through either the purchase of vernal pool restoration/creation credits at a USACE and USFWS approved bank; or by the restoration of vernal pool habitat at an agency approved site. There are two vernal pool conservation banks located within the Mather Core area; however, as neither of these banks contain restoration or creation credits, mitigation of vernal pool impacts occurred at locations elsewhere in Sacramento County (see Figure 3.2-1). USACE and USFWS criteria for creation/restoration sites include: appropriate soil type, as well as having a conservation easement, management plan, and long-term funding mechanism in place.

Also critical to the consideration of future actions that may impact biological resources within the Mather core vernal pool complex is the proposed South Sacramento Habitat Conservation Plan (SSHCP) (described in Section 3.2.3.3). The public draft of the document was issued in August 2010. This regional approach to addressing issues related to urban development, habitat conservation and agricultural protection is intended to consolidate environmental efforts to protect and enhance wetlands (primarily vernal pools) and upland habitats to provide ecologically viable conservation areas.

The SSHCP, which includes the Mather Core (see Figure 4-4), proposes to establish a Reserve System whereby habitat would be conserved, managed and monitored to achieve the biological goals and objectives for the species covered by the document. The conservation strategy includes take avoidance, minimization, and compensation measures, including land and easement dedications and per-acre fees imposed on covered activities based on their impacts to habitat and resulting take. In exchange for this habitat conservation, the USFWS and CDFG would issue Incidental Take Permits authorizing covered activities. The entities that receive coverage under the Incidental Take Permits could "take" specified species incidental to otherwise legal activities. Covered species and covered activities are detailed in the SSHCP.

As proposed in the SSHCP, fees would be used to purchase land for the Reserve System, thereby providing large-scale habitat preservation and habitat restoration. Supplementary monies would be sought from grants or other funding sources to acquire preserve lands that would contribute to the recovery of covered species, but which are not required as mitigation for covered activities.

4.2.5.2 FUTURE ACTIONS WITHIN THE CITY OF RANCHO CORDOVA AND SACRAMENTO COUNTY-ALL RESOURCE AREAS

The 2006 City of Rancho Cordova General Plan, the specific and community plans developed by the cities of Folsom and Elk Grove, and the 1993 Sacramento County General Plan serve as a guide to future development. The City of Rancho Cordova's growth and buildout plan are indicated in Table 4-6, which presents information from its General Plan. The acreages identified for development by general, community and specific plans within Sacramento County are listed in Table 4-6. The portions of these acreages that are planned to be devoted to parks, recreation or open space are also listed. Development projects within the City of Rancho Cordova and southeastern Sacramento County are identified in Figure 4-5

The projects identified in Table 4-4 are included in the City of Rancho Cordova's growth projections presented in Table 4-5, as well as the general and specific plans identified in Table 4-6 for Sacramento County.

The County of Sacramento is currently preparing its 2010 General Plan Update. The current General Plan time horizon ends in 2010. The 2010 General Plan Update is planned to guide the County's growth and development to 2030. The proposed update of the plan includes intensive residential development in portions of the Mather Core Area as well as other areas in southeastern Sacramento County (see Figure 4-5). The previous General Plan identified some of these areas for development, but the planning was at a more conceptual level.

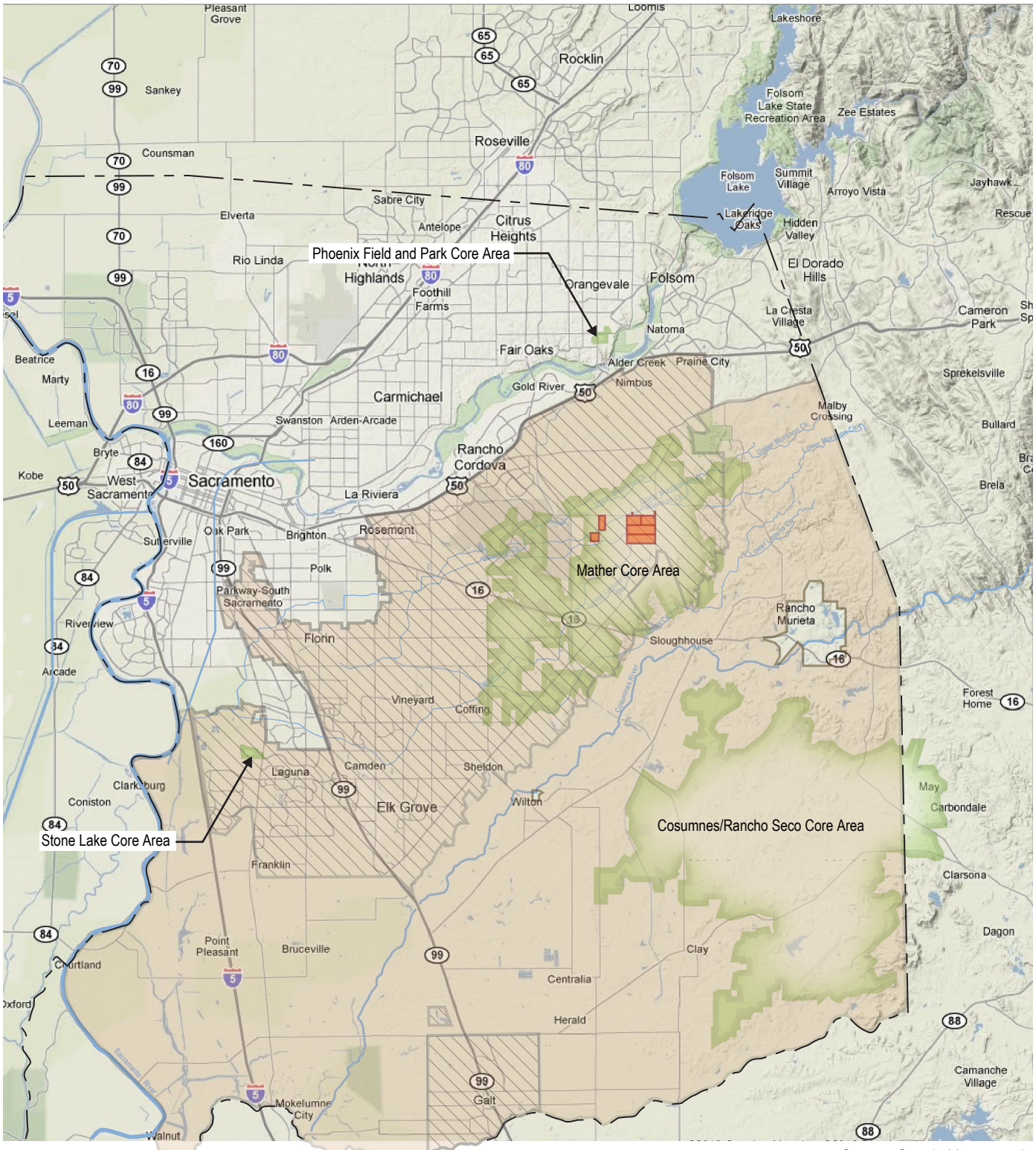

Figure 4-4. South Sacramento HCP Plan Area

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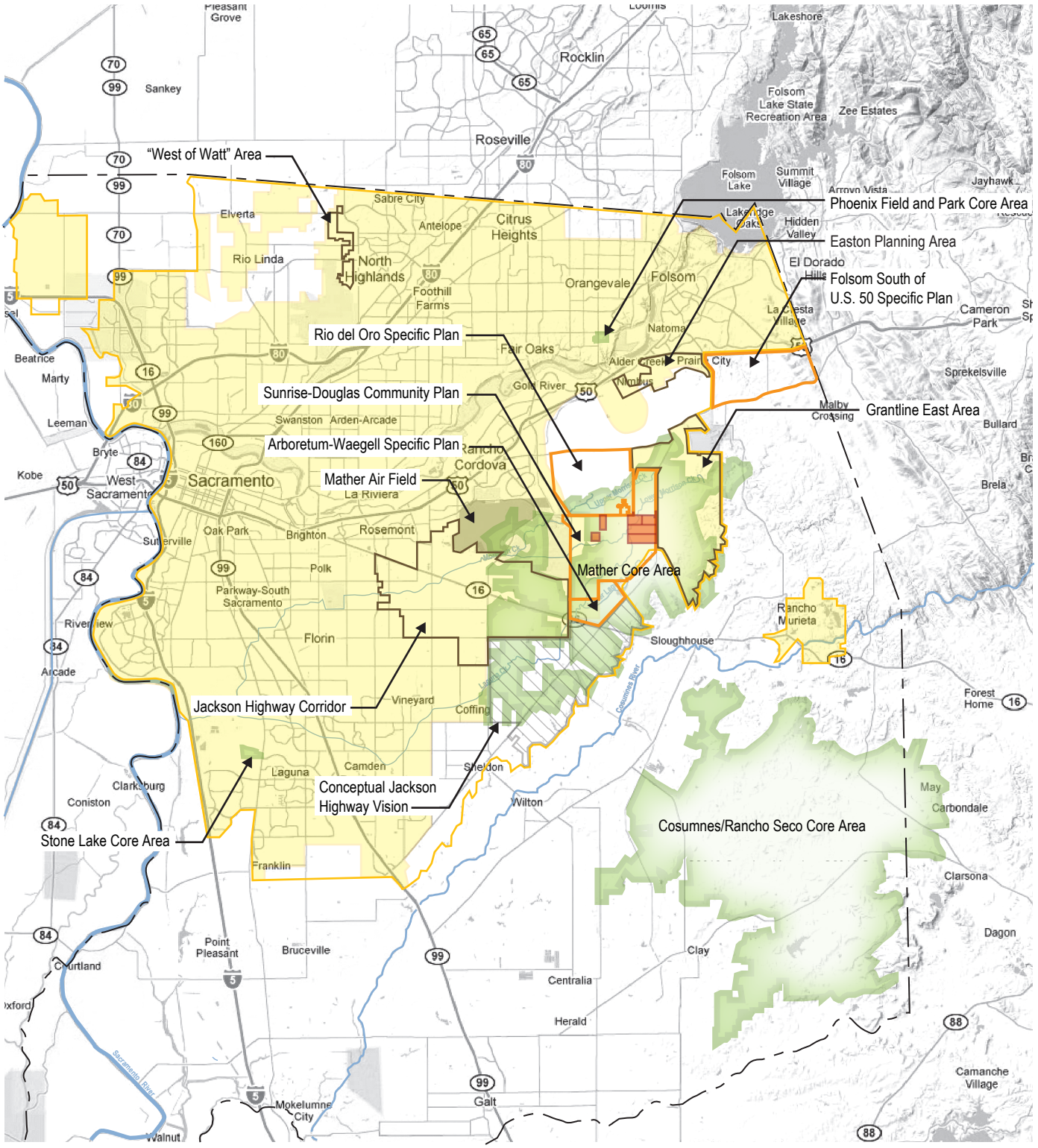

Figure 4-5. Urban Growth Areas Under Development or Planned within Sacramento County

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Table 4-4
Development Projects in the Mather Core Area

Project (USACE ID)	Total Vernal Pools and Other Waters		Impacts				Preserved On-site		Preserved Off-site		Creation/Restoration				Status	Time Frame
			Direct		Indirect						In Core		Out of Core			
	VP	OW	VP	OW	VP	OW	VP	OW	VP	OW	VP	OW	VP	OW		
Anatolia (SPK-1901-100210)	68.07	17.45	29.67	14.55	3.54	0.07	41.1	2.9			3.8	14.1	27.61	0.99	Permit Issued, Constructed	Past
Chetcuti (SPK-1992-00196)	0.75		0.75												Permit Issued, Constructed	Past
Dierks Ranch (SPK-1998-00350)	2.12	0.53	2.12	0.053			8.85						2.65		Permit Issued, Constructed	Past
Kiefer Landfill Expansion (SPK-1990-00250)	4.27	1.8	4.27	1.8	2.1								9.11		Permit Issued, Constructed	Past
Mather Groundwater Extraction (SPK-2003-00717)		0.03		0.03				0.03							Permit Issued, Constructed	Past
McNair (SPK-2001-00263)		0.01		0.01				0.01							Permit Issued, Constructed	Past
Montelena (SPK-2001-00448)	12.25	5.63	6.95	5.51	0.022		5.3	0.12	6.91	2.21			14.17	5.14	Permit Issued, Constructed	Past
Security Park (SPK-2006-00196)	0.16	0.01	0.16	0.01	0.023				0.79				0.19	0.01	Permit Issued, Constructed	Past
SR16&Excelsior, (SPK-2005-00588)		0.61		0.61					1.48	0.74				0.74	Permit Issued, Constructed	Past
Sunridge Park (SPK-2001-00252)	1.36	0.64	1.31	0.5	1.58		0.05	0.14	10.4				3.39		Permit Issued, Constructed	Past
Triangle Rock Mining (SPK-1998-00683)	3.7	3.9	3.5	0.53	0.21		0.2	3.37	5.28	1.41	7.54	3.8			Permit Issued, Constructed	Past
Hodges Sloughouse (SPK-2000-00752)	1.04	0.18													No Permit Application Received Delineation Only	Past
Vineyard Estates (SPK-1991-00387)	0.32	0.32											0.34		Permit Issued, Constructed	Past
Excelsior Meadows (SPK-1991-00013)	0.04	0.36	0.04	0.36											Permit Issued, Constructed	Past
Anatolia IV (SPK-1994-00210)	1.36		1.36						2.72				1.36		Permit Issued, Partially Constructed	Present
Douglas Road 98 (SPK-2002-00568)	3.70	0.21	3.70	0.21					7.82				3.91		Permit Issued, Partially Constructed	Present
North Douglas (SPK-1994-00218)	1.99	4.16	1.99	4.16	0.7				7.64				1.99	4.16	Permit Issued, Partially Constructed	Present
Douglas Road 103 (SPK-1997-00006)	4.23	0.48	1.66	0.32	5.27		2.57	0.16	5.89				7.25		Permit Issued, Not Constructed	Present
Grantline 208 (SPK-1994-00365)	10.07	0.04	5.22	0.48	0.45		4.65	0.75	6.9				6.15		Permit Issued, Not Constructed	Present
Sunridge Village J (SPK- 2001-00230)	1.88	1.11	1.88	1.11	0.36	0.03			9.18				3.38		Permit Issued, Partially Constructed	Present
Lot P (SPK-2005-00325)	9.26	1.52	9.26	1.52					17.47	2.86			9.26	1.52	Permit Application Withdrawn	Reasonably Foreseeable
Mather Redevelopment (SPK-2003-00441, 2002-00561, 2009-00525, 2009-00526, 2009-00527,2009-00528, 2009-00529, 2009-00530, 2009-00404)	69.8	54.2	16.1	19.36			50.2	24.73					13.9	20.02	Permit Application Received	Reasonably Foreseeable
Arista del Sol (SPK-2004-00458)	8.59	8.74	5.37	8.52	1.44		3.22	0.22	20.18	9.04			6.81	8.52	Permit Application Received	Reasonably Foreseeable
Grantline 220 (SPK-2006-00604)	2.44	1.52	2.44	1.52	0.44	0.05			5.32	3.09			2.88	1.57	Permit Application Withdrawn	Reasonably Foreseeable
Excelsior Estates (SPK-2004-00791)	27.79	25.63	18.58	23.8	4.6	.0.91	.9.21	1.83	22.01				33.64[a]	b	Permit Application Received	Reasonably Foreseeable
Jaeger Ranch (SPK-2006-00602)	3.66	2.75	2.41	1.05	1.25	0.16	1.25	1.69	4.81	1.23			2.41	1.05	Permit Application Received	Reasonably Foreseeable
Kamilos 160 (SPK-2006-00603)	4.12	0.70	2	0.38	1	0.13	1.89	0.31	5	0.89			3	0.49	Permit Application Received	Reasonably Foreseeable
North Douglas II (SPK-2006-00240)	1.23	3.98	0.40	0.40	0.27	1.80	0.83	3.58	1.34	4.40			0.66	2.20	Permit Application Received	Reasonably Foreseeable

Notes:
VP – Vernal Pool
OW – Other Waters
a 12.78 acres at agency approved bank or 16.61 acres at approved off-site location
b 15.99 acres at agency approved bank or 20.79 acres at approved off-site location

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Table 4-4
Development Projects in the Mather Core Area (continued)

Project (USACE ID)	Total Vernal Pools and Other Waters		Impacts				Preserved On-site		Preserved Off-site		Creation/Restoration				Status	Time Frame
			Direct		Indirect						In Core		Out of Core			
	VP	OW	VP	OW	VP	OW	VP	OW	VP	OW	VP	OW	VP	OW		
Rio del Oro (SPK-1999-00590)	35.49	21.15	15.07	12.83	2.2		20.4	8.3	2.67	19.6	17.9	18.84	16.66		Permit Application Received	Reasonably Foreseeable
Shalako (SPK-2006-00605)	9.88	3.88	2.83	1.09	2.59	1.06	7.04	2.69	5.65	1.62			2.83	1.09	Permit Application Received	Reasonably Foreseeable
Sunridge (SPK-2000-00414)	53.41	8.11	3.82	5.56	1.99	1.77	1.59	2.56	9.86	9.88			4.33	6.37	Permit Application Received	Reasonably Foreseeable
Sunridge Village (SPK-2004-00707)	14.91	5.96	9.33	5.21			5.58	0.75	29.08				14.54		Permit Application Received	Reasonably Foreseeable
Mather Interceptor (SPK-2007-00716)	0.14	0.07	0.07	0.05			0.07	0.02	0.27	0.07	0.01	0.02	0.08	0.03	Permit Application Withdrawn	Reasonably Foreseeable
Matsuoka (SPK-2005-01046)	3.05	6.41	0.34	1.3	0.98	0.3	2.71	6.49	2.94				1.64		Permit Application Received	Reasonably Foreseeable
North Douglas II (SPK-2006-00240) (Whitlow Property)	1.23	3.98	0.4	0.23	0.02		0.83	3.58	1.25				0.4	0.23	Permit Application Withdrawn	Reasonably Foreseeable
Arboretum (SPK-2007-00133)	22.18	94.85	5.97	25.81	8		16.15	69.05	11.94	49.58			5.97	25.81	Permit Application Received	Reasonably Foreseeable
Zinfandel Extension (SPK-2009-00880)			0.31	2.38	0.54										No Permit Application Received	Reasonably Foreseeable
SRC Milling (SPK-2003-00669)	11.19	11.02													No Permit Application Received	Reasonably Foreseeable
Cordova Hills (SPK-2004-00116)	109.83		45.15	6.62											Permit Application Received	Reasonably Foreseeable
Triangle Rock Expansion Florin Rd S. (SPK-2000-0501)	1.1	9.93	0.15	8.95			0.96					24.7			Permit Application Received	Reasonably Foreseeable
Capital Southeast Connector	37.95	63.55	5.55	10.49	20.14	31.93									No Permit Application Received	Reasonably Foreseeable
Total	**544.56**	**365.42**	**210.13**	**167.31**	**59.72**	**37.30**	**175.44**	**133.28**	**204.80**	**106.62**	**29.25**	**61.46**	**166.87**	**79.94**		

Notes:
VP – Vernal Pool
OW – Other Waters
a 12.78 acres at agency approved bank or 16.61 acres at approved off-site location
b 15.99 acres at agency approved bank or 20.79 acres at approved off-site location

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Table 4-5
City of Rancho Cordova 2006, Future and General Plan Buildout Conditions

Land Uses	City Only			Entire Planning Area		
	Year 2006	Year 2030	Buildout	Year 2006	Year 2030	Buildout
Resident Units	22,443	75,957	75,923	41,749	109,884	126,241
Population	54,379	183,362	183,459	102,412	267,275	310,568
Total Employment[1]	47,679	89,305	102,878	94,771	146,459	195,021
Commercial	7,075	10,603	11,529	15,026	21,123	23,942
Office	25,534	69,573	78,597	45,985	108,369	132,355
Industrial	10,886	9,129	8,297	26,864	16,968	24,381
Total Square Footage[2]	18,743,319	32,791,241	35,084,629	40,717,601	56,139,386	71,209,788
Commercial	3,537,443	5,300,372	5,764,627	7,513,133	10,560,826	11,971,169
Office	7,491,663	19,132,151	21,614,312	13,551,611	29,801,078	36,397,637
Industrial	7,714,213	8,358,718	7,705,690	19,652,857	15,777,482	22,840,982

Notes: Buildout projections under the Entire Planning Area include the City.

[1] Total Employment also includes other types of jobs, such as public school employment.

[2] Total Square Footage also includes square footage from other uses, such as public and quasi-public uses (e.g. schools and churches).

Source: Rancho Cordova General Plan, Land Use Element, 2006

Table 4-6
Acreages Identified for Development in Sacramento County

Plan Title	Acreage Identified for Development	Portion Devoted to Parks, Recreation or Open Space
Unincorporated Sacramento County		
Mather Field Specific Plan	5,610	2,319
North Vineyard Station Specific Plan	1,594	293
Vineyard Springs Comprehensive Plan	2,560	407
Florin Vineyard Comprehensive Plan	3,450	Not yet identified
Easton	1,400	291
Rancho Murieta	1,750	Not yet identified
Elk Grove		
East Franklin Specific Plan	2,474	Not yet identified
East Elk Grove Specific Plan	1,440	190
Elk Grove Triangle Special Planning Area	710	0
Elliott Ranch South Specific Plan (Laguna Stonelake)	452	120
Laguna Ridge Specific Plan	1,900	234
Lent Ranch Marketplace Special Planning Area	300	0
Folsom		
Folsom South of U.S. Highway 50 Specific Plan	3,500	1,050
Folsom East Area Specific Plan	3,800	Approximately 500
Rancho Cordova		
Cordova Community Plan	37,650	Not yet identified
Rio del Oro Specific Plan	3,800	1,122
Sunrise-Douglas Community Plan	6,000	177
Sunridge Specific Plan	2,600	482
SunCreek Specific Plan (Sunrise-Douglas II Specific Plan)	1,250	400
Galt		
Northeast Area Specific Plan	1,247	Not yet identified

Source: County of Sacramento 2009

4.2.5.3 FUTURE ACTIONS WITHIN THE CITY OF RANCHO CORDOVA AND SACRAMENTO COUNTY-SURFACE AND GROUNDWATER SUPPLY

The 1993 General Plan changed the land use designation of large areas of central and eastern Sacramento County from agricultural use to residential, commercial, and industrial uses. As a result of this urban expansion, the Sacramento County Water Agency (SCWA) expanded the boundary of Zone 40 and updated their Water Supply Master Plan to encompass these lands that were now within the Urban Services Boundary, so that surface and groundwater supplies could be developed to serve this area. The SCWA is responsible for constructing Zone 40 facilities.

Implementation of the Zone 40 WSMP, Zone 41 UWMP, and Zone 40 WSIP, would provide SCWA Zone 40 with long-term surface and groundwater supplies. Immediate water supplies would be provided by groundwater from the North Vineyard Well Field project, which includes up to six wells, storage tanks, pump stations, treatment facilities, and a pipeline network. This well field, located in the Central Basin, would initially serve the Sunridge Specific Plan, Sunrise Corridor, Security Park, and Mather Field areas. Zone 40 water is allocated on a first-come, first-served basis. The SCWA intends to continue to extract groundwater to meet its customer demands within the limits of the negotiated sustainable yield of the Central Basin. The North Vineyard Well Field would ultimately be integrated with the Zone 40 surface water facilities to provide conjunctively managed surface and groundwater.

Surface water would be supplied by construction of a surface water diversion structure on the Sacramento River, treatment facilities, and a network of pipelines to convey surface water throughout the Zone 40 service area. SCWA has secured (and is in the process of securing additional) surface water entitlements that would allow SCWA to meet its projected 2030 water demands. Zone 40's conjunctive use program is sufficient to provide a long-term reliable water supply in normal, dry, and multiple-dry years.

The City conducted a water supply evaluation for the City of Rancho Cordova General Plan (2006) that concluded that water supplies are currently available to meet the water demands associated with buildout of the City's corporate limits, but the City would be required to secure additional water supplies to meet its projected 2050 demands. Increased water demands could result in increased groundwater pumping, an increased demand for new surface water supplies, an increased demand for recycling and water conservation programs, and/or an increased demand for local water purveyors to expand their service areas. Potential projects to secure additional supplies could include the negotiation of new water right transfers; construction of new diversion structures; expansion or construction of new water treatment plants; and construction of new potable-water and recycled-water distribution facilities.

4.2.5.4 FUTURE ACTIONS WITHIN THE CENTRAL VALLEY AND CALIFORNIA-BIOLOGICAL RESOURCES

California has both the highest absolute and fastest relative population growth in the United States. California's population is predicted to grow by almost 18 million by the year 2025, an increase of over 50%, the highest of any state (U.S. Census Bureau, 1996). This predicted population growth will continue to threaten vernal pool habitats, most of which are located on private land (USFWS, 2005). Approximately 73% of the land within the Central Valley is privately owned, and in areas containing vernal pool habitats, only 6% of the land area is in public ownership (California Department of Fish and Game, 1998). According to the 1997 National Resources Inventory (U.S. Department of Agriculture,

2000), California ranked sixth in the nation in amount of non-federal land developed between 1992 and 1997, at over 546,700 acres.

The rate of vernal pool habitat loss increased sharply between 1997 and 2005. If the current rate of annual habitat loss were to continue, naturally occurring vernal pool habitats (with the exception of vernal pool habitat preserves) would be completely eliminated from the Central Valley by 2087 (Holland, 2009).

4.3 CUMULATIVE EFFECTS ANALYSIS

The CEQ established the following principles for determining the environmental consequences of cumulative effects:

- Address additive, countervailing, and synergistic effects;
- Look beyond the life of the action; and,
- Address the sustainability of resources, ecosystems, and human communities.

The cumulative effects analysis has two steps: identify the important cause-and-effect relationships between human activities and resources, ecosystems, and human communities; and, determine the magnitude and significance of cumulative effects. This analysis is conducted in the following sections for vernal pools, followed by the other resource areas collectively.

4.3.1 CAUSE-AND-EFFECT RELATIONSHIPS BETWEEN HUMAN ACTIVITIES AND RESOURCES, ECOSYSTEMS, AND HUMAN COMMUNITIES

The 1993 Sacramento County General Plan changed the land use designation of large areas of central and eastern Sacramento County from agricultural use to residential, commercial, and industrial uses. Following this change, community and specific plans were written and approved that enabled residential communities to be developed in that part of the county. The 2006 City of Rancho Cordova General Plan reaffirmed this approach within the city limits by establishing a policy of rezoning the agricultural land of willing sellers to urban development (Rancho Cordova, 2006), and by the approval of several community and specific plans that have been and will continue to replace agricultural land with residential communities.

4.3.1.1 BIOLOGICAL RESOURCES

The threatened vernal pool fairy shrimp and the endangered vernal pool tadpole shrimp have been documented to occur at three of the parcels. At the three remaining parcels, they have the potential to occur due to suitable vernal pool habitat. Direct effects would occur through mortality to these species and permanent loss of vernal pool habitat, and indirect effects would occur through loss or alteration of upland and swale areas that support aquatic habitat.

The USFWS Recovery Plan identified 20 federal listed species, including the threatened vernal pool fairy shrimp and the endangered vernal pool tadpole shrimp, and 13 species of concern that occur exclusively or primarily within a vernal pool ecosystem in California and southern Oregon. The USFWS Recovery Plan identified habitat loss and fragmentation as the largest threat to the survival and recovery of these 33 species of plants and animals. The information presented below is also from the USFWS Recovery Plan.

EFFECTS OF HABITAT FRAGMENTATION, ALTERATION, AND DEGRADATION

Habitat loss is generally a result of urbanization, agricultural conversion, and mining. Habitat loss also occurs in the form of habitat alteration and degradation as a result of changes to natural hydrology; invasive species; incompatible grazing regimes, including insufficient grazing for prolonged periods; infrastructure projects (e.g., roads, water storage and conveyance, utilities); recreational activities (e.g., off-highway vehicles and hiking); erosion; climatic and environmental change; and contamination. Habitat fragmentation generally is a result of activities associated with habitat loss (e.g., roads and other infrastructure projects that contribute to the isolation and fragmentation of vernal pool habitats). The loss, fragmentation and isolation of functional vernal pool ecosystems have threatened the continued existence of the listed species and species of concern addressed in the USFWS Recovery Plan.

Direct losses of habitat, as discussed in Section 4.2.3, generally represent irreversible damage to vernal pools. Alteration and destruction of the habitat as a result of urbanization, agriculture, and mining often disrupts the physical processes conducive to functional vernal pool ecosystems. The more severe the alteration and destruction, the more difficult it is to recover such areas in the future due to disruption of soil formations, hydrology, seed banks, and other components of a functional vernal pool ecosystem.

Agricultural conversion and urbanization, as well as the construction of infrastructure, including the construction of new highways, wastewater treatment plants, sewer lines, water supply projects, wind energy development projects, and other utility projects, have also contributed greatly to the destruction and fragmentation of vernal pool habitat. Habitat loss exacerbates the highly fragmented distribution of many of the listed species and species of concern, increases the vulnerability of adjacent populations of such species to random environmental events, and further disrupts gene flow patterns between populations of such species. Habitat fragmentation, alteration, and degradation may effectively serve as a barrier to dispersal for some species and may bisect the range of such species locally. Although genetic evidence suggests movement between historically disjunct vernal pool complexes was probably low (Hebert, 1974; Havel et al., 1990; Boileau and Hebert, 1991; Fugate, 1992; King, 1996; Davies et al., 1997), current fragmentation of originally intact vernal pool complexes could contribute significantly to the loss of genetic diversity among vernal pool plants and crustaceans, and reduce the likelihood of recolonization events following local population extinctions (Fugate, 1998). Some additional effects of fragmentation on vernal pool crustaceans may be indirect, through their effect on an associated species. For example, the fragmentation of vernal pool habitats may decrease habitat suitability for avian species, resulting in decreased use of smaller, isolated patches, especially those adjacent to incompatible land uses. Such an effect on birds can have consequences on the genetic stability of populations of listed branchiopods because avian species are dispersal agents for the vernal pool crustaceans (Proctor, 1964; Krapu, 1974; Swanson et al., 1974; Driver, 1981; Ahl, 1991).

No information exists regarding the minimum area of land (wetlands and uplands) needed to sustain viable populations of the listed species or species of concern. As populations become isolated and/or smaller, such patches have a higher propensity towards localized extinction events. Effective management regimes also become difficult and expensive to implement on isolated and/or small patches. Limiting the size of a preserved area or preserving an area geographically isolated from other preserves could preclude the long-term conservation of the species. To alleviate threats from isolated or small populations, measures must be taken to ensure functions and processes occur that favor sustainable populations and associations of listed species and species of concern, including pollinators for plants. Minor fragmentation of vernal pool habitats may effectively serve as a seed, pollen, and pollinator dispersal barrier between adjacent sites for many of the plants. Habitat fragmentation will also lead to reduced gene flow between populations and a potential for loss of genetic variation within populations and greater susceptibility to disease and mortality due to stochastic events (G. Platenkamp in litt., 2005).

URBAN DEVELOPMENT

Aside from direct habitat loss from conversion to urban development, specific threats to vernal pools from adjacent urban developments include the following:

Altered Hydrology. Vernal pool hydrology can be altered directly when swale systems connected to vernal pools are dammed by physical barriers, such as roads and canals. These barriers can alter vernal pool hydrology both upstream and downstream of the barrier by truncating connectivity and flow. Vernal pool hydrology also may be altered by changes to patterns of surface and subsurface flow, depending on topography, precipitation, and soil types (Hanes et al., 1990; Hanes and Stromberg, 1998). The increased runoff and nuisance flows associated with urban development and impervious surfaces may result in altered hydrology of seasonal wetlands on and off-site. For example, stormwater drains, or the coverage of land surfaces with concrete, asphalt, or irrigated lawns, can alter the duration, volume discharge and frequency of surface flows through increased flooding and runoff.

The timing, frequency, and duration of inundation are critical to the survival of vernal pool species. Alterations of the hydrology can be particularly harmful to vernal pool species due to premature pool dry-down before the life cycles of the species are completed, preventing reproduction and disrupting gene flow. Flowing water that artificially removes plants and animals, including cysts, eggs or seeds, from the vernal pool complex also can prevent successful reproduction and disrupt gene flow. Water flow into vernal pools during the summer can significantly alter vernal pool species composition (Clark et al., 1998). Longer periods of inundation and/or changes in water depth could effectively change seasonal wetland functions (e.g., change from vernal pool to perennial/permanent wetlands) and floral composition (e.g., community changes from annual herbs to emergent macrophytes), which in turn may lead to the extirpation of some vernal pool plants. Longer periods of inundation may result in damage to the seed bank by facilitating seed rot, triggering unseasonable germination, or other effects. With respect to animals, a more permanent aquatic community may provide suitable habitat for introduced amphibians and fish. These species are significant predators of vernal pool fairy shrimp and other vernal pool crustaceans (Bauder, 1987).

Invasive Species. When invasive, nonnative species enter an ecosystem they can disrupt the natural balance resulting in reduction of biodiversity, degradation of habitats, alteration of native genetic diversity, and further threats to already endangered plants and animals (U.S. Environmental Protection Agency, 2005). The introduction of invasive species from encroaching urban development occurs through a variety of methods, such as escape of plants used for ornamental gardening, and dispersal via wind, water, animals, and motor vehicles. Vernal pool plant species may decline from competition with invading plant species for nutrients, light, and water.

Contaminants. Vernal pool plant and crustacean populations also have declined as a result of water contamination. Vernal pool crustaceans are highly sensitive to the chemistry of their vernal pool habitats (Belk, 1977, Eng et al., 1990, Gonzalez et al., 1996). Use of herbicides, fertilizers, and other chemicals for landscaped residential areas are common in urban settings. Such chemicals could have detrimental impacts on these species if they reach seasonal wetlands via storm or nuisance sheet flow. Specifically, herbicides may completely inhibit growth of listed plant species and plant species of concern. Fertilizer contamination can lead to the eutrophication of vernal pools, which can kill vernal pool crustaceans by reducing the concentration of dissolved oxygen (Rogers, 1998). Fertilizers may benefit the growth of invasive plants and could effectively lead to localized extirpation of listed plant and animal species and species of concern addressed in the USFWS Recovery Plan resulting from competition, thatch buildup, and effects of eutrophication.

Contamination of vernal pools from adjacent areas may injure or kill vernal pool crustaceans and plants either directly or indirectly via pathways including the alteration of chemical properties of a pool (e.g., pH) and inhibiting and/or disrupting biochemical processes creating less suitable conditions for reproduction or germination and growth. Toxic chemicals, such as petroleum products, pesticides, herbicides, fertilizers and detergents, may wash into vernal pools during the course of activities on adjacent areas. Vernal pools adjacent to existing developments may be contaminated from roadway contaminants in surface runoff (e.g., grease, oil, and heavy metals). Pesticides used for mosquito abatement may also kill or injure fairy shrimp.

Garbage and trash, recreational use, and vandalism. As vernal pool habitats become increasingly rare and urban development expands, threats from disposal of garbage and trash, off-road vehicle use, and vandalism increase. People dump unwanted items such as trash, tires, and appliances in vernal pool areas. Not only can these items release toxic substances into the environment and contaminate water and soil (Ripley et al., 2004), but they can directly affect species by crushing them (Hathaway et al., 1996) and restricting photosynthesis in plants by shielding the sun. Waste material also may disrupt the natural hydrologic flow.

Certain recreational activities threaten vernal pool ecosystems. Many vernal pool species are adversely affected by off-road vehicle use, hiking, and bicycling. When off-road vehicles and bicycles cut through vernal pool complexes, they may impair hydrological functions by displacing soil causing erosion or truncating swale connectivity, thus resulting in hydrological changes. Similarly, some off-road enthusiasts, bicyclists, etc., may create dirt jump ramps, which also could result in the aforementioned effects. Additionally these activities may result in burial of seeds and cysts of plants and animals so they have decreased viability. Plants and animals may be crushed and killed as a result of careless site users. Trampling also may reduce the reproductive output of vernal pool species. Recreational users also may introduce, or facilitate spread of, seeds of invasive plants that could be attached to vehicles, tires, or shoes and clothing. Germination of these seeds may result in competition with vernal pool plants and could further change the vegetative composition of the landscape.

Loss of pollinator species. A potential threat to vernal pool plants is the decline of essential pollinators due to habitat fragmentation and the loss of upland habitat that supports pollinator species. Habitat loss and degradation interferes with reproduction and dispersal of pollinators. Pollinators for most vernal pool plant species have not been identified, so the status of their habitat cannot be assessed. It is likely that many of these pollinators require the uplands surrounding vernal pools for completion of their life cycle. For insect pollinated plants, the reduction of available habitat for pollinators could decrease pollinator populations, which could reduce reproductive success of the plants. Similarly, many of these pollinators (e.g., andrenid bees) do not disperse great distances (Davis, 1998, Leong, 1994, Thorp and Leong, 1995), so removal or modification of available vernal pool and upland habitat (e.g., through urban development or the accretion of a dense thatch layer preventing access to burrowing sites) could minimize their ability to reproduce and disperse. If pollinators are unable to disperse, or habitat loss causes a reduction in pollinator populations, then it is likely genetic variability and reproductive success of insect pollinated plant species would be reduced, thus affecting the long-term viability of the taxon. Diminished reproductive success could lead to reduced numbers and susceptibility to extinction.

4.3.1.2 SURFACE AND GROUNDWATER SUPPLY

As a result of the urban expansion determined by the 1993 General Plan, SCWA expanded the boundary of Zone 40 and updated their Water Supply Master Plan to encompass these lands that were now within the Urban Services Boundary, so that surface and groundwater supplies could be developed to serve this area. SCWA is responsible for constructing Zone 40 facilities, and would initially serve the project site with groundwater from the North Vineyard Well Field project. Because Zone 40 water is allocated on a

first-come, first-served basis, the water available to the project under the Zone 40 WSMP and the Zone 41 UWMP could be affected by rapid development in other portions of Zone 40 or by expansion of the City of Elk Grove's urban services area. The long-term plan to also supply Zone 40 with surface water has made significant progress: the Sacramento River intake facility has recently been completed, and the Vineyard Water Treatment Plant is on schedule to be completed in late 2011.

4.3.1.3 SURFACE WATER QUALITY, AIR QUALITY, TRAFFIC AND TRANSPORTATION, NOISE, AND VISUAL RESOURCES

The 1993 General Plan changed the land use designation of large areas of central and eastern Sacramento County from agricultural use to residential, commercial, and industrial uses. Following this change, community and specific plans were written and approved that enabled residential communities to be developed in that part of the county. The 2006 City of Rancho Cordova General Plan reaffirmed this approach within the city limits by establishing a policy of rezoning the agricultural land of willing sellers to urban development (Rancho Cordova, 2006), and by the approval of several community and specific plans that have been and will continue to replace agricultural land with residential communities.

This substantial change in land use affects several resource areas, including surface water quality, air quality, traffic and transportation, noise, and visual resources, which are unavoidably affected by urban growth. Downstream surface water quality for Morrison and Laguna Creeks will likely deteriorate as the land use changes from low intensity agriculture to medium density urban development. Sacramento County's urban streams are impacted by urban runoff contaminants, primarily from roadways and the use of pesticides and herbicides for landscaping. Sacramento regional air quality and adjacent traffic levels of service are both exhibiting significant adverse existing conditions. Roadway noise is an accepted consequence of urban life, but not of rural life. Similarly, the conversion of rural, undeveloped, or agricultural land to urban land uses, would inexorably change the visual character of the site, and create light, glare, and skyglow effects that are produced in urban areas.

Also in regard to air quality, the SMAQMD recommends a buffer distance of 4 miles from the location of receptors to a rendering plant, and the project is less than 2 miles from the Sacramento Rendering Company. Currently, nearby residents have been lodging complaints with regard to odor from the rendering plant.

4.3.1.4 PUBLIC HEALTH

As a result of the urban expansion determined by the 1993 Sacramento County General Plan, and reaffirmed by the 2006 City of Rancho Cordova General Plan, large expanses of wetlands would be leveled and replaced with structures, roads, or landscaped areas. However, the large numbers of new residents who would reside near the remaining wetlands would be exposed to the hazards of mosquitos.

4.3.1.5 CLIMATE CHANGE

Climate change is a global phenomenon caused by large-scale GHG emissions from a variety of human activities; GHG emissions have accelerated in the last century.

4.3.2 MAGNITUDE AND SIGNIFICANCE OF CUMULATIVE EFFECTS

The magnitude and significance of the environmental consequences of the Proposed Project Alternative on biological resources, surface and groundwater supply and quality, air quality, traffic and transportation, noise, public health, visual resources, and climate change is determined in the context of,

and when added to, other past, present, and reasonably foreseeable actions. Only impacts that contribute to an existing adverse cumulative impact are evaluated. Table 4-7 lists the identified impacts for each resource area, the project's contribution to the larger impact, and the existing adverse cumulative impact.

Table 4-7
Significance of Project Contributions to Existing Adverse Cumulative Impacts

Impacts	Project Contribution	Adverse Cumulative Impact
Biological Resources		
Impact 3.2-1. An adverse effect on a population of threatened, endangered, or candidate species Impact 3.2-2. A net loss in the habitat value of sensitive biological habitat Impact 3.2-3. Substantial impedance to the movement or migrate of fish or wildlife Impact 3.2-4. Substantial population loss of any native fish, wildlife, or vegetation	The Proposed Project Alternative would result in direct impacts to vernal pool habitat value from the loss of 20 acres of vernal pool habitat, a sensitive biological habitat, the direct loss of two special-status species that occur within the project site, the threatened vernal pool fairy shrimp and the endangered vernal pool tadpole shrimp, and the substantial loss to other populations of vernal pool plant and animal species. Indirect effects would occur through loss or alteration of upland and swale areas that areas that are important in maintaining the habitat value of vernal pools	The historic local and regional loss of vernal pool habitat has result in an adverse impact to vernal pool habitat and species. Implementation of the project would have a cumulatively considerable contribution to this impact.
Hydrology, Water Quality, Water Supply, and Groundwater		
Impact 3.3-2. Potential for discharges that affect surface water quality. Impact 3.3-3 - Potential for changes in groundwater elevations around the Elk Grove Cone of Depression Impact 3.3-4 - Potential for changes in groundwater elevations adjacent to the proposed well field Impact 3.3-5. Potential for changes in groundwater elevations in and around known contaminant plumes Impact 3.3-6. Potential for changes in the rate of contaminant plume migration	With six parcels totaling 3,258 single-family homes, the Proposed Project Alternative would result in a cumulatively considerable contribution to decreased surface water quality in Morrison and Laguna Creeks. The Proposed Project Alternative would be supplied with Zone 40 water from the North Vineyard Well Field, resulting in potential changes in groundwater elevations, and the rate of contaminant plume migration. In the long-term, the Proposed Project Alternative may also be supplied with surface water. Both sources contribute to the need for additional long-term regional surface and groundwater supplies.	Current urban development in Sacramento County contributes to the degradation of Morrison and Laguna Creeks. Current and planned urban developments in Sacramento County contribute to the demand for new surface and groundwater supplies. Implementation of the project, in conjunction with other planned, proposed, and approved projects in the vicinity, could result in cumulatively considerable impacts to surface and groundwater supply and quality.

Notes:
NO_x – Nitrous Oxide
PM_{10} – Particulate matter 10 microns in diameter or smaller
ROG – Reactive Organic Gas
$PM_{2.5}$ – Particulate matter 2.5 microns in diameter or smaller
SRC - Sacramento Rendering Company

Table 4-7
Significance of Project Contributions to Existing Adverse Cumulative Impacts (continued)

Impacts	Project Contribution	Adverse Cumulative Impact
Hydrology, Water Quality, Water Supply, and Groundwater (continued)		
Impact 3.3-9. Changes in groundwater elevation adjacent to the proposed well field Impact 3.3-10. Increased need for development of long-term regional surface and groundwater supplies		
Air Quality		
Impact 3.4-2: Exposure of future residents to odors from the Sacramento Rendering Company (SRC). Impact 3.4-3: Long-term increase in ROG, NO_x and PM_{10} emissions.	The Proposed Project Alternative would add to the number of residents who live within the buffer zone (4 miles) of the SRC, and would increase in ROG, NO_x, and PM_{10} emissions, resulting in cumulatively considerable contributions to these impacts.	Existing adverse impacts to air quality are significant. Sacramento County is not in attainment for the federal air quality standards for ozone, PM_{10}, and $PM_{2.5}$, nor the state PM_{10} and $PM_{2.5}$ standards. The county is designated a "serious" nonattainment area for the federal 8-hour ozone standard, and is designated a "serious" nonattainment area for the state 1-hour ozone standard. Motor vehicles emit over 75% of the ozone precursors in Sacramento.
Traffic and Transportation		
Impact 3.7-1. Reduction of Level of Service:	The Proposed Project Alternative would increase peak-hour and daily traffic volumes, resulting in a cumulatively considerable contribution to level of service decreases at various roadway segments, intersections, and freeway ramps, in the area of analysis.	Several major road segments in Rancho Cordova currently operate at unacceptable LOS E and F levels. Implementation of the project, in conjunction with other planned, proposed, and approved projects in the vicinity, would result in substantial increases to peak-hour and daily traffic volumes.
Noise		
Impact 3.8-4. Project-generated increases in traffic noise levels on area roadways	The Proposed Project Alternative would increase peak-hour and daily traffic volumes, which would result in a cumulatively considerable contribution to traffic noise levels on area roadways.	Implementation of the project, in conjunction with other planned, proposed, and approved projects in the vicinity, would result in substantial increases in traffic noise levels on area roadways.

Notes:
NO_x – Nitrous Oxide
PM_{10} – Particulate matter 10 microns in diameter or smaller
ROG – Reactive Organic Gas
$PM_{2.5}$ – Particulate matter 2.5 microns in diameter or smaller
SRC - Sacramento Rendering Company

Table 4-7 Significance of Project Contributions to Existing Adverse Cumulative Impacts (continued)		
Impacts	**Project Contribution**	**Adverse Cumulative Impact**
Public Health		
Impact 3.11-3. Human health hazards associated with mosquito-borne diseases	The Proposed Project Alternative would eliminate wetlands, but it would also bring in large numbers of new residents who would reside near the remaining wetlands, resulting in a cumulatively considerable contribution to a human health hazard.	Although wetlands would be eliminated by the Proposed Project Alternative, as well as by other planned, proposed, and approved projects in the vicinity, these projects would also bring in large numbers of residents who would reside near the remaining wetlands.
Visual Resources		
Impact 3.13-3. Degradation of visual character Impact 3.13-5. New light and glare effects Impact 3.13-6. New skyglow effects	The Proposed Project Alternative would change 742 acres of rural, undeveloped land to urban land uses, degrading the rural visual character of the site and surrounding area, and resulting in light, glare and skyglow effects.	The conversion of other planned, proposed, and approved projects in the vicinity have resulted in and will continue to result in significant adverse impacts to visual resources.
Climate Change		
Impact 3.16-1. Short-term increase in construction-related GHG emissions Impact 3.16-2. Long-term increase in GHG emissions	The Proposed Project Alternative would increase short-term and long-term GHGs, resulting in cumulatively considerable contributions to these impacts.	Existing adverse impacts to GHGs are significant. Project implementation would contribure to this significant impact.
Notes: NO_x – Nitrous Oxide PM_{10} – Particulate matter 10 microns in diameter or smaller ROG – Reactive Organic Gas $PM_{2.5}$ – Particulate matter 2.5 microns in diameter or smaller SRC - Sacramento Rendering Company		

4.3.2.1 BIOLOGICAL RESOURCES

Project implementation would result in the placement of fill material into jurisdictional waters of the United States, including wetlands subject to USACE jurisdiction under the federal CWA. Wetlands and other waters of the United States that would be affected by project implementation include vernal pools, seasonal wetlands and seasonal wetland swales, seeps, drainage channels, ditches, and ponds.

The potential for a resource or ecosystem to sustain its structure and function depends on its resistance to stress and its ability to recover. Determining the magnitude and significance of the environmental consequences of the Proposed Project Alternative in the context of, and when added to, other past, present, and reasonably foreseeable actions, is key to determining the impact on resources.

Under Section 4.2.1, Past Actions, and Section 4.2.3, Present Actions, the loss of vernal pool habitat acreage and diversity in the Central Valley was described and quantified: an 87% reduction in the original habitat acreage (Holland, 1998b) and a 15% to 33% reduction of the original biodiversity of vernal pool crustaceans (King, 1998). These direct losses of habitat generally represent irreversible damage to vernal pools, and alterations as a result of urbanization often disrupt the physical processes conducive to functional vernal pool ecosystems. As discussed above, the more severe the alteration and destruction, the more difficult it is to recover such areas in the future due to disruption of soil formations, hydrology, seed banks, and other components of a functional vernal pool ecosystem.

Past, present and reasonably foreseeable future projects considered in the cumulative impact analysis were identified in Table 4-5. Information on indirect impacts, preservation, and mitigation was not

available for many of the proposed projects listed in Table 4-4; in these cases, a 1:1 mitigation ratio was assumed for direct impacts. Acreage information in general should be considered estimates as the acreage may change. Mitigation was assumed to occur outside of the Mather Core Area, as there are presently no compensatory mitigation banks or only a few potential vernal pool restoration areas in the Mather Core Area.

As indicated in Table 4-5, based on the data currently available, 360 acres of direct impact to waters of the U.S. have or will foreseeably occur within the Mather Core Area. This includes direct impacts to 209 acres of vernal pools and 151.63 areas of other waters. Information regarding indirect impacts is very limited, but at least an additional 38 acres of vernal pools and 6 acres of other aquatic habitats have or will be indirectly impacted. Of the aquatic habitats contained within the Mather Core Area, 22% of the vernal pools will be preserved on-site, and 44% of the other waters will be preserved on-site.

For the 405 acres of waters of the U.S. that have been or are proposed to be impacted, 371 acres have been or are proposed to be created or restored as compensatory mitigation, representing a ratio of 0.92:1. Most of the compensatory mitigation was not or will not be initiated until after or around when the impacts occur, which could result in substantial additional temporal losses as aquatic habitat restoration and creation is not always successful upon first attempt. Further, only approximately 56 acres of the vernal pool compensatory mitigation has been or is proposed to be mitigated within the Mather Core Area, and approximately 27 acres of vernal pools that have been created in the core area are exhibiting only limited success according to recent monitoring reports. As approximately 75.6% of the vernal pool compensatory mitigation has or will occur outside the Mather Core Area, a permanent loss of vernal pool functions would occur in the Mather Core Area, and the habitat preservation goals of the USFWS Recovery Plan would not be met.

Other reasonably foreseeable projects, including Heritage Falls and Sunridge Village, involve considerably less preservation than the Proposed Project Alternative. Development of the Heritage Falls project would preserve vernal pools, including one containing a population of Sacramento Orcutt grass (*Orcuttia viscida*), and a tributary to Morrison Creek. However as currently proposed, all on-site waters of the U.S. would be destroyed. At Sunridge Village, the conceptual strategy calls for the preservation of 12.66 acres of aquatic habitats within a 216-acre preserve. The preserve would include the main channel of Morrison Creek and 5.85 acres of vernal pools, and would provide connectivity between the eastern and western extents of the regional preserve. However, as currently proposed, Morrison Creek would be re-routed and channelized under the power lines, the preserve area would be reduced to 86.8 acres, and an additional 6.36 acres of aquatic habitats, including 3.5 acres of vernal pools, would be lost. This would substantially decrease the level of connectivity between project avoidance areas and reduce the viability of the regional preserve corridor and the Morrison Creek watershed.

The impacts brought forward for a cumulative impact analysis from the biological impact analyses in Section 3 are analyzed below.

Impact 3.2-1- An adverse effect on a population of threatened, endangered, or candidate species

According to the USFWS, no information exists regarding the minimum area of land (wetlands and uplands) needed to sustain viable populations of the 33 listed species or species of concern. But it is known that as populations become isolated and/or smaller, such patches have a higher propensity towards localized extinction events. Minor fragmentation of vernal pool habitats may effectively serve as a seed, pollen, and pollinator dispersal barrier between adjacent sites. Habitat fragmentation also leads to reduced gene flow between populations and a potential for loss of genetic variation within populations and greater susceptibility to disease and mortality due to stochastic events (G. Platenkamp in litt., 2005).

As described in Section 3, implementation of mitigation measures would reduce direct and indirect impacts on the threatened vernal pool fairy shrimp and the endangered vernal pool tadpole shrimp, the federally-listed species that occur within the project site. The impact was reduced to less than significant based on mitigation that replaced the existing vernal pool habitat with off-site constructed vernal pools. As described above, considerable concerns exist regarding the creation of off-site constructed vernal pools, both with regard to their adequate replacement of habitat value, as well as their long-term viability. In addition, concerns exist regarding the loss of the original vernal pool habitats that are present even when mitigation results in successful vernal pool creation.

While the successful creation of constructed vernal pools off-site might replace the local vernal pools, fragmentation and resulting biodiversity concerns remain for the Central Valley vernal pool complex from that loss. Therefore, while there is mitigation planned to replace the loss of vernal pool acreage with constructed vernal pools, two major concerns remain: that the performance of off-site constructed pools would not adequately replace the habitat values of the original vernal pools, and that, even if the habitat values were being replaced, the vernal pool complex may still be degraded.

Therefore, even with implementation of the proposed mitigation, the project would result in a cumulatively considerable contribution to the significant loss or displacement of these vernal pool species and their habitat as described above. The cumulative impacts from this project and past, present, and reasonably foreseeable future projects would have a substantial adverse effect on two federally-listed vernal pool crustaceans and contribute to the decline of these species.

Impact 3.2-2 -A net loss in the habitat value of sensitive biological habitat

Biodiversity used to result from the periodic flooding of the Central Valley as water would flow between vernal pools and vernal pool complexes. The widespread alteration and confinement of flood flows in the Central Valley has drastically decreased these occurrences, resulting in avian species becoming the primary dispersal agents. Fragmentation of vernal pool habitats might decrease habitat suitability for avian species which are less likely to use smaller, isolated patches, especially those adjacent to incompatible land uses. Such an effect on birds can have consequences on the genetic stability of populations of branchiopods because avian species are dispersal agents for vernal pool crustaceans (Proctor, 1964, Krapu, 1974, Swanson et al., 1974, Driver, 1981, Ahl, 1991).

Loss of vernal pool habitat from implementation of the project 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. Along with direct impacts, indirect impacts of the project would also result from fragmentation of the habitat, degradation of water quality, hydrologic alterations, and reduction of habitat functions of on-site wetlands and wetlands downstream from the project site. Therefore, the project would result in significant cumulative impacts to the loss of habitat value of sensitive vernal pool ecosystems in the Mather Core Area.

Impact 3.2-3 - Substantial impedance to the movement or migration of fish or wildlife

Historically, these vernal pool complexes provided dispersal of vernal pool crustaceans during large-scale flooding which allowed these species to colonize different vernal pools and vernal pool complexes. Colonization has been reduced by (1) the alteration of natural hydrology which has reduced large-scale flooding, (2) the loss of vernal pool habitat, and (3) the hydrologic isolation of the remaining vernal

pools. Therefore, there would be a significant cumulative impact with respect to dispersal of vernal pool species.

Impact 3.2-4 - Substantial population loss of any native fish, wildlife, or vegetation

Project implementation would result in direct impacts to special-status wildlife and the loss of suitable habitat. Indirect impacts would also occur through degradation of suitable habitat due to site alteration. In combination with projected losses from past, present and reasonably foreseeable future projects, these impacts would result in a cumulatively substantial loss of populations of vernal pool wildlife species, including federally-listed vernal pool crustaceans that occur in the project site.

4.3.2.2 SURFACE WATER AND GROUNDWATER SUPPLY

The modeling conducted for the Sunridge Specific Plan included cumulative condition scenarios, and Demand Scenarios 2, 3, 4, 5, 4a, and 5a all assumed development beyond the Sunridge Specific Plan would take place. Demand Scenario 5a corresponds to the groundwater elevation variations and stabilization levels expected to result from implementation of the Water Forum Agreement, since Scenario 5a reflects the quasi-equilibrium state of the groundwater basin resulting from anticipated year 2030 levels of land use and water demand with implementation of the long-term average operational yield limit (273,000 af annually) for the south county basin and the conjunctive use measures prescribed by the Water Forum Plan.

"CUMULATIVE WITHOUT PROJECT" BASELINE CONDITION

The year 2030 groundwater model provided an estimate of the resulting quasi-equilibrium state of the groundwater basin resulting from anticipated year 2030 levels of land use and water demand, as well as various other developments in Sacramento County (including elements of the Water Forum Plan). The year 2030 model with elements of the Water Forum included was selected for two principal reasons:

- First, the Water Forum Plan reflects projected land use and water demand throughout Sacramento County in the year 2030 pursuant to the approved Sacramento County 1993 General Plan Update.

- Second, the Water Forum Plan represented the most likely long-term plan for development of groundwater and surface water supplies in Sacramento County south of the American River and was the proposed mitigation for the potential impacts to the groundwater basin resulting from planned development identified in the 1993 General Plan Update.

In the "Cumulative without Project" baseline condition, all planned development in the Sacramento County 1993 General Plan Update to the year 2030 is assumed to occur with the exception of Mather Field, Sunrise Corridor, Security Park, and the Sunridge Specific Plan and Sunrise-Douglas Community Plan service areas. Development in these areas is held at year 1990 (i.e., "existing without project conditions") in the "Cumulative without Project" baseline condition. The "Cumulative without Project" baseline condition further assumes water demands within all areas of the analysis area other than Mather Field, Sunrise Corridor, Security Park, and the Sunridge Specific Plan and groundwater and surface water through implementation of the Zone 40 Conjunctive Use Plan. (Zone 40 will implement the Water Forum Plan south of the American River within its boundaries.) Existing water demands at Mather Field, Sunrise Corridor, Security Park, and the Sunridge Specific Plan and Sunrise-Douglas Community Plan service areas are met exclusively by groundwater in the "Cumulative without Project" baseline condition.

The resulting groundwater elevations over the 70-year historical record of known hydrologic conditions established the "Cumulative without Project" baseline condition against which the impacts of the proposed well field were compared. The "Cumulative without Project" baseline condition is representative of what would reasonably be expected to occur absent implementation of the proposed water supply project.

Under the "Cumulative without Project" baseline condition, groundwater levels near the Elk Grove cone of depression vary from -70 to -100 feet below msl between wet and dry years, respectively. Groundwater levels near the proposed North Vineyard Well Field vary between +20 feet above msl and -10 feet below msl between wet and dry years respectively. Groundwater levels near the SDCD/SRSP project site vary from +50 to +20 feet above msl between wet and dry years, respectively. Similar to the fall 1998 "Snapshot in Time" groundwater conditions, groundwater flow under baseline conditions is from the east to the west/southwest toward the Elk Grove cone of depression.

Impact 3.3-3 - Potential for changes in groundwater elevations around the Elk Grove Cone of Depression

Under Demand Scenarios 2, 3, 4a, and 5a, groundwater elevations in and around the Elk Grove cone of depression would remain essentially unchanged as a result of the proposed well field under the Proposed Project Alternative. Therefore, the Proposed Project Alternative impacts under these scenarios would not be considered a cumulatively considerable contribution to lowered groundwater levels around the Elk Grove cone of depression.

Demand Scenarios 4 and 5 would result in a drop in groundwater elevation of between 10 and 15 feet in and around the Elk Grove cone of depression compared to baseline conditions under the Proposed Project Alternative. This decrease would exceed the objective of maintaining levels within 10 feet of baseline, and would also exceed the groundwater stabilization levels identified in the Water Forum Plan. Therefore, the Proposed Project Alternative impacts under Demand Scenarios 4 and 5 are considered a cumulatively considerable contribution to lowered groundwater levels around the Elk Grove cone of depression. Under Scenarios 4a and 5a, the Zone 40 conjunctive use program prescribed by the Water Forum Plan would mitigate these impacts. Impacts upon groundwater elevations at the Elk Grove cone of depression under the cumulative demand scenarios are described more fully below.

DEMAND SCENARIO 2 AND 3 ANALYSIS

Under Demand Scenarios 2 and 3, wet and dry year groundwater elevations in and around the Elk Grove cone of depression would differ by 30 feet for Aquifers 1 and 2, similar to baseline conditions.

Under fall 1998 conditions, groundwater levels near the Elk Grove cone of depression were approximately -60 feet msl, and under baseline conditions without implementation of the project, groundwater elevations are -100 feet msl. Implementation of Demand Scenarios 2 and 3 would also result in groundwater levels around -100 feet msl. These elevations do not exceed the groundwater stabilization levels identified in the Water Forum Plan. Therefore, the Proposed Project Alternative impacts under Demand Scenarios 2 and 3 are not considered a cumulatively considerable contribution to lowered groundwater levels around the Elk Grove cone of depression.

DEMAND SCENARIO 4 ANALYSIS

Under Demand Scenario 4, wet and dry year groundwater and piezometric elevations in and around the Elk Grove cone of depression would differ by approximately 30 feet for Aquifers 1 and 2, similar to baseline conditions.

Under fall 1998 conditions, groundwater levels near the Elk Grove cone of depression were approximately -60 feet msl, and under baseline conditions without implementation of the project, groundwater elevations are -100 feet msl. Implementation of Demand Scenario 4 would result in groundwater levels around -110 feet msl. This decrease in groundwater elevation exceeds the objective of maintaining levels within 10 feet of baseline, and also exceeds the groundwater stabilization levels identified in the Water Forum Plan. Therefore, the Proposed Project Alternative impacts under Demand Scenario 4 are considered a cumulatively considerable contribution to lowered groundwater levels around the Elk Grove cone of depression.

DEMAND SCENARIO 5 ANALYSIS

Under Demand Scenario 5, wet and dry year groundwater elevations in and around the Elk Grove cone of depression would differ by 30 feet for Aquifer 1, and piezometric surface elevations would differ by 20 feet for Aquifer 2. The magnitude of these fluctuations between wet and dry years is not substantially different from baseline conditions.

Under fall 1998 conditions, groundwater levels near the Elk Grove cone of depression were approximately -60 feet msl, and under baseline conditions without implementation of the project, groundwater elevations are -100 feet msl. Implementation of Demand Scenario 5 would result in groundwater levels around -110 feet msl. This decrease in groundwater elevation exceeds the objective of maintaining levels within 10 feet of baseline, and also exceeds the groundwater stabilization levels identified in the Water Forum Plan. Therefore, the Proposed Project Alternative impacts under Demand Scenario 5 are considered a cumulatively considerable contribution to lowered groundwater levels around the Elk Grove cone of depression.

DEMAND SCENARIO 4A ANALYSIS

Under Demand Scenario 4a, wet and dry year groundwater elevations in and around the Elk Grove cone of depression would differ by about 30 feet for Aquifer 1 and piezometric surface elevations would differ by about 40 feet for Aquifer 2. The magnitude of these fluctuations is not substantially different from baseline conditions for all alternatives.

Under fall 1998 conditions, groundwater levels near the Elk Grove cone of depression were approximately -60 feet msl, and under baseline conditions without implementation of the project, groundwater elevations are -100 feet msl. Implementation of Demand Scenario 4a would result in groundwater levels around -100 feet msl, at the Elk Grove cone of depression. These elevations do not exceed the groundwater stabilization levels identified in the Water Forum Plan. Therefore, the Proposed Project Alternative impacts under Demand Scenario 4a are not considered a cumulatively considerable contribution to lowered groundwater levels around the Elk Grove cone of depression.

DEMAND SCENARIO 5A ANALYSIS

Under Demand Scenario 5a, wet and dry year groundwater elevations in and around the Elk Grove cone of depression differ by about 30 feet for both Aquifers 1 and 2. The magnitude of these fluctuations is similar to baseline conditions for all alternatives.

Under fall 1998 conditions, groundwater levels near the Elk Grove cone of depression were approximately -60 feet msl, and under baseline conditions without implementation of the project, groundwater elevations are -100 feet msl. Implementation of Demand Scenario 5a would result in groundwater levels around -100 feet msl at the Elk Grove cone of depression. These elevations do not exceed groundwater stabilization levels identified in the Water Forum Plan. Therefore, the Proposed Project Alternative impacts under Demand Scenario 5a are not considered a cumulatively considerable contribution to lowered groundwater levels around the Elk Grove cone of depression.

Impact 3.3-4 - Potential for changes in groundwater elevations adjacent to the proposed well field

Groundwater elevations in the vicinity of the proposed North Vineyard Well Field would decline by 10 feet or less relative to the baseline under Demand Scenarios 4a, and 5a, because these scenarios assume implementation of the Zone 40 conjunctive use program prescribed by the Water Forum Plan that would mitigate these impacts. Therefore, the Proposed Project Alternative impacts under these scenarios would not be a cumulatively considerable contribution to lowered groundwater elevations adjacent to the proposed well field.

However, groundwater elevations in Aquifer 1 in the vicinity of the proposed well field would decline by 10 feet or more relative to the baseline under Demand Scenarios 2, 3, 4, and 5, resulting in significant impacts. This impact, centered on the well field, would range from a 10-15-foot decrease in Scenarios 2 and 3 (near the margin of acceptable impacts), up to a 25-45-foot decrease in Scenarios 4 and 5 (which substantially exceeds the 10-foot drop from the baseline significance threshold). This decline in groundwater elevations could result in substantial economic impacts to shallow domestic well operators in the vicinity of the proposed well field, due to increased pumping (energy) costs or the possible need to deepen existing wells to obtain water. It is anticipated that approximately 130 existing shallow domestic wells would be adversely affected under Scenario 4, and approximately 790 wells would be adversely affected under Scenario 5. In addition, the decline in groundwater elevations around the proposed well field exceeds the groundwater stabilization levels identified in the Water Forum Plan under Scenarios 4 and 5. Therefore, the Proposed Project Alternative impacts under Demand Scenarios 2, 3, 4 and 5 are considered a cumulatively considerable contribution to lowered groundwater adjacent to the proposed well field. Impacts upon groundwater elevations adjacent to the proposed well field under the cumulative demand scenarios are described more fully below.

DEMAND SCENARIO 2 AND 3 ANALYSIS

Under Demand Scenarios 2 and 3, groundwater elevations in Aquifer 1 would be about 30 feet lower in the vicinity of the proposed well field in dry years compared to wet years. Piezometric surface elevations in Aquifer 2 also show a 30-foot difference under the same conditions. A small cone of depression would form in Aquifer 2, centered around the proposed well field. The magnitude of this fluctuation between wet and dry years is the same as that estimated under the baseline condition.

Comparison of Demand Scenarios 2 and 3 (extraction of approximately 10,800 af/yr) to baseline conditions shows that in and around the proposed well field site, wet and dry year elevations in Aquifer 1 would be approximately 10 to 15 feet lower than baseline conditions, which may begin to negatively impact the shallow domestic wells of adjacent landowners. Piezometric surface elevations in Aquifer 2 in wet and dry years would be approximately 40 feet lower than baseline conditions. Lowering of the piezometric surface elevation would primarily result from extraction of groundwater from Aquifer 2. However, the impact on the piezometric surface of Aquifer 2 does not have the same significance as an impact of similar magnitude on groundwater elevations in Aquifer 1 because municipal wells, which extract groundwater from Aquifer 2, are drilled sufficiently deep to withstand groundwater level

fluctuations of the magnitude envisioned under this scenario. Further, the magnitude of the impact diminishes rapidly with distance from the proposed well field site in both Aquifer 1 and Aquifer 2.

If groundwater (Aquifer 1) levels decline by more than 10 feet during groundwater extraction activities, potentially significant groundwater resource impacts could occur. A drop of groundwater elevations of 10 feet or more could adversely affect nearby shallow domestic wells in and around the proposed well field because pumping costs could increase.

Under Demand Scenario 2 and 3, the physical effect of the proposed project is the lowering of groundwater levels in and around the proposed well field by 10 to 15 feet. The economic consequence of this physical impact is that nearby landowners with shallow domestic wells may experience increased groundwater pumping costs or may have to deepen their wells in order to continue to extract groundwater. Therefore, the Proposed Project Alternative impacts under Demand Scenarios 2 and 3 are considered a cumulatively considerable contribution to lowered groundwater elevations in and around the proposed well field.

DEMAND SCENARIO 4 ANALYSIS

Under Demand Scenario 4, groundwater elevations and piezometric surface elevations in and around the proposed well field would be about 30 feet lower in dry years as compared to wet years. A small cone of depression would form in Aquifer 2 centered on the proposed well field. The magnitude of these fluctuations is the same as that estimated under the baseline condition.

Comparison of Demand Scenario 4 to baseline conditions shows that in and around the proposed well field site wet and dry year groundwater elevations would be approximately 25 feet and 20 feet lower than baseline conditions, respectively. Groundwater extraction proposed in Demand Scenario 4 could lower groundwater levels in Aquifer 1 to the point where approximately 130 local shallow domestic wells could be taken out of operation and/or would require deepening to continue operation. Piezometric surface elevations would be approximately 70 feet lower than baseline conditions in both wet and dry years under Demand Scenario 4. This impact on the piezometric surface of Aquifer 2 does not have the same significance as an impact of similar magnitude on Aquifer 1 because municipal wells, which extract groundwater from Aquifer 1, are drilled sufficiently deep to withstand groundwater level fluctuations of the magnitude envisioned under this scenario. However, a consequence of lowering the piezometric surface elevation by 70 feet in Aquifer 2 would be the approximate 20-foot lowering of groundwater elevations in Aquifer 1. The lowering of piezometric surface elevation in Aquifer 2 would induce recharge (downward flow of water) from Aquifer 1 in and around the proposed well field site.

Similar to Demand Scenarios 2 and 3, this scenario would cause physical groundwater level changes (decline by 20 to 25 feet) that result in economic impacts to surrounding land owners. Specifically, approximately 130 shallow domestic wells may be taken out of service or require deepening to continue groundwater pumping. In additional, this decline in groundwater elevation also exceeds the groundwater stabilization levels identified in the Water Forum Plan. Therefore, the Proposed Project Alternative impacts under Demand Scenario 4 are a cumulatively considerable contribution to lowered groundwater elevations in and around the proposed well field.

DEMAND SCENARIO 5 ANALYSIS

Under Demand Scenario 5, groundwater in Aquifer 1 would be about 30 feet lower in the vicinity of the proposed well field in dry years as compared to wet years. Piezometric surface elevations in Aquifer 2 show a 20-foot difference under the same conditions. A small cone of depression would form in Aquifer

2 centered around the proposed well field. The magnitude of these fluctuations between wet and dry years is the same as that estimated under the baseline condition.

Comparison of Demand Scenario 5 to baseline conditions shows that in and around the proposed well field site wet year groundwater elevations would be over 45 feet lower than baseline conditions. In fact, groundwater impacts are regional in nature under Scenario 5. Dry year groundwater elevations would be approximately 35 feet lower than baseline conditions. Groundwater extraction under the amounts proposed in this scenario could lower groundwater levels to the point where 790 local shallow domestic wells would be taken out of service and/or would require deepening to continue pumping groundwater.

Piezometric surface elevations in Aquifer 2 would be more than 110 feet lower than baseline conditions in both wet and dry years. A decline of this magnitude could lower the piezometric surface elevations below the base of the aquaclude. The impact on the piezometric surface of Aquifer 2 does not have the same significance as an impact on groundwater elevations in Aquifer 1 because municipal wells, which extract groundwater from Aquifer 2, are drilled sufficiently deep to withstand groundwater level fluctuations of the magnitude envisioned under this scenario. However, lowering of the piezometric surface elevation by over 110 feet in Aquifer 2 would induce recharge from Aquifer 1, causing the approximate 45-foot lowering of groundwater levels in Aquifer 1.

Similar to Demand Scenarios 2, 3, and 4, this scenario would cause physical groundwater level changes that result in economic impacts to surrounding land owners. Specifically, approximately 790 shallow domestic wells would be taken out of service and/or would require deepening to continue operation. In addition, this decline in groundwater elevation also exceeds the groundwater stabilization levels identified in the Water Forum Plan. Therefore, the Proposed Project Alternative impacts under Demand Scenario 5 are a cumulatively considerable contribution to lowered groundwater elevations in and around the proposed well field.

DEMAND SCENARIO 4A ANALYSIS

Under Demand Scenario 4a, groundwater elevations in Aquifer 1 would be about 40 feet lower in the vicinity of the proposed well field in dry years as compared to wet years. Aquifer 2 shows a 60-foot difference under the same conditions. The magnitude of these fluctuations between wet and dry years is greater than estimated under baseline conditions for all alternatives. This is primarily due to the groundwater "mounding" that results from delivery of surface water to the area.

Wet year groundwater elevations in Aquifer 1 under Demand Scenario 4a would be higher than those under the baseline condition. An increase in groundwater elevation over 10 feet is observed in and around the proposed well field. Similarly, dry year groundwater elevations in Aquifer 1 are approximately 1 foot higher than under baseline conditions. Piezometric surface elevations in Aquifer 2 under this scenario are also substantially higher (approximately 35 feet) in wet years. In dry years, the piezometric surface elevations would be approximately 3 feet lower. Because groundwater elevations are consistent with stabilization levels identified in the Water Forum Plan, impacts under this scenario would not be considered a cumulatively considerable contribution to lowered groundwater elevations in and around the proposed well field.

DEMAND SCENARIO 5A ANALYSIS

Under Demand Scenario 5a, groundwater elevations of Aquifer 1 would be about 40 feet lower in the vicinity of the proposed well field in dry years as compared to wet years. Aquifer 2 shows a 50- to 60-foot difference under the same conditions. The magnitude of these fluctuations between the wet and dry years is greater than that estimated under the baseline condition for all alternatives. This is primarily due

to the groundwater "mounding" during wet years that results from the delivery of surface water to the area.

Wet year groundwater elevations in Aquifer 1 under Demand Scenario 5a are similar to those under the baseline condition. However, a slight decrease of approximately 5 feet is centered at the well field. Dry year groundwater elevations in Aquifer 1 under Demand Scenario 5a result in an approximate 10-foot decrease at the well field, with minor areas subject to a 10-13 foot decrease.

Impacts to the piezometric surface elevations in Aquifer 2 under Demand Scenario 5a vary between wet and dry years. In wet years, Aquifer 2 piezometric surface elevations would be approximately 10 feet lower than those under baseline conditions. In dry years, a 15-foot decrease would be centered around the proposed well field. This results from the large volume of groundwater extracted in the dry year (up to 32,822 AF). In wet years, surface water would be delivered under the Zone 40 conjunctive use program. Because groundwater elevations are consistent with stabilization levels identified in the Water Forum Plan, impacts under Scenario 5a would not be considered a cumulatively considerable contribution to lowered groundwater elevations in and around the proposed well field.

Impact 3.3-5. Potential for changes in groundwater elevations in and around known contaminant plumes.

The proposed North Vineyard Well Field would have no appreciable impacts on groundwater elevations in and around known contaminant plumes under Demand Scenarios 1, 2, 3, 4a, and 5a. Aquifer 1 groundwater elevations in and around known contaminant plumes remain largely unchanged under these scenarios. At some locations, minor impacts versus the baseline condition are predicted. Potential impacts would be addressed by ongoing and planned remediation efforts with coordination.

Aquifer 2 piezometric surface elevations in and around known contaminant plumes also evidence minor impacts. An increase in piezometric elevation could result in the migration of groundwater from Aquifer 2 to Aquifer 1; however, these impacts would be accommodated by ongoing and planned remediation efforts with coordination.

The proposed well field could have potentially significant impacts on groundwater and piezometric surface elevations around known contaminant plumes under Demand Scenarios 4 and 5, including changes in groundwater elevations in Aquifer 1 and piezometric surface elevations in Aquifer 2. Therefore, the Proposed Project Alternative impacts under Demand Scenarios 4 and 5 would be considered a cumulatively considerable contribution to groundwater elevations in and around known contaminant plumes. Under Scenarios 4a and 5a, the Zone 40 conjunctive use program prescribed by the Water Forum Plan would mitigate these impacts.

Impact 3.3-6. Potential for changes in the rate of contaminant plume migration.

Under worst case conservative conditions (i.e., assuming no remediation of known contaminant plumes occurs) the average estimated travel times from known contaminant plumes to reach the proposed well field site would be at least 50 years under Demand Scenarios 1, 2, 3, 4, 4a, and 5a, similar to what would occur under baseline conditions. Therefore, contaminant plume migration under these scenarios would not be significant. However, the average estimated travel times for known contaminant plumes to reach the proposed well field under Demand Scenario 5 would be decreased to 40 years. Therefore, the Proposed Project Alternative impacts under Demand Scenario 5 would be considered a cumulatively considerable contribution to the acceleration of contaminant plume migration compared to baseline

conditions. The Zone 40 conjunctive use program prescribed by the Water Forum Plan would mitigate this impact, as demonstrated in Scenario 5a.

DEMAND SCENARIO 2, 3, 4, 4A, AND 5A ANALYSIS

Based on the average flow rates, estimated travel times for contaminants originating from any of the known contaminant plumes referenced above to the proposed well field would be greater than 50 years for Demand Scenarios 2, 3, 4, 4a, and 5a. Estimated travel times for plumes that are more distant are typically in excess of 100 years. Because these travel times are the same or slower than what would occur under baseline conditions, Proposed Project Alternative impacts would not be considered a cumulatively considerable contribution to the rate of contaminant plume migration.

DEMAND SCENARIO 5 ANALYSIS

Based on the average flow rates, estimated travel times for contaminants originating from any of the known contaminant plumes referenced above to the proposed well field are greater than 40 years. Under this scenario, travel times of known contaminant plumes are decreased compared to baseline conditions. Therefore, the time that it takes for the contaminant plumes to migrate to the proposed well field could be reduced. Therefore, the Proposed Project Alternative impacts under Demand Scenario 5 would be considered a cumulatively considerable contribution to the acceleration of contaminant plume migration compared to baseline conditions. The Zone 40 conjunctive use program prescribed by the Water Forum Plan would mitigate this impact, as demonstrated in Scenario 5a.

Impact 3.3-9. Changes in groundwater elevation adjacent to the proposed well field.

Groundwater elevations in the vicinity of the proposed North Vineyard Well Field would decline by 10 feet or more relative to the baseline under Demand Scenarios 2, 3, 4, and 5, and by 10 feet or less relative to the baseline under Demand Scenarios 4a and 5a.

Demand Scenarios 2, 3, 4, and 5

Groundwater elevations in Aquifer 1 in the vicinity of the proposed well field would decline by 10 feet or more relative to the baseline under Demand Scenarios 2, 3, 4, and 5, resulting in significant impacts. This impact, centered on the well fields, would range from a 10-15-foot decrease in Scenarios 2 and 3 (near the margin of acceptable impacts), up to a 25-45-foot decrease in Scenarios 4 and 5 (which substantially exceeds the 10-foot drop from the baseline significance threshold). The decline in groundwater elevations could result in substantial economic impacts to shallow domestic well operators in the vicinity of the proposed well field, due to increased pumping (energy) costs or the possible need to deepen existing wells to obtain water. It is anticipated that approximately 130 existing shallow domestic wells would be adversely affected under Scenario 4, and approximately 790 wells would be adversely affected under Scenario 5. In addition, the decline in groundwater elevations around the proposed well field exceeds the groundwater stabilization levels identified in the Water Forum Plan under Scenarios 4 and 5. These impacts are mitigated under Scenarios 4a and 5a, highlighting the need for implementation of the Zone 40 conjunctive use program prescribed by the Water Forum Plan.

Demand Scenario 2 and 3 Analysis

Under Demand Scenarios 2 and 3, groundwater elevations in Aquifer 1 would be about 30 feet lower in the vicinity of the proposed well field in dry years as compared to wet years. Piezometric surface elevations in Aquifer 2 also show a 30-foot difference under the same conditions. A small cone of

depression would form in Aquifer 2, centered around the proposed well field. The magnitude of this fluctuation between wet and dry years is the same as that estimated under the baseline condition.

Comparison of Demand Scenarios 2 and 3 (extraction of approximately 10,800 AF/yr) to baseline conditions shows that in and around the proposed well field site, wet and dry year elevations in Aquifer 1 would be approximately 10 to 15 feet lower than baseline conditions, which may begin to negatively impact the shallow domestic wells of adjacent landowners. Piezometric surface elevations in Aquifer 2 in wet and dry years would be approximately 40 feet lower than baseline conditions. Lowering of the piezometric surface elevation would primarily result from extraction of groundwater from Aquifer 2. However, the impact on the piezometric surface of Aquifer 2 does not have the same significance as an impact of similar magnitude on groundwater elevations in Aquifer 1 because municipal wells, which extract groundwater from Aquifer 2, are drilled sufficiently deep to withstand groundwater level fluctuations of the magnitude envisioned under this scenario. Further, the magnitude of the impact diminishes rapidly with distance from the proposed well field site in both Aquifer 1 and Aquifer 2.

If groundwater (Aquifer 1) levels decline by more than 10 feet during groundwater extraction activities, potentially significant groundwater resource impacts could occur. A drop of groundwater elevations of 10 feet or more could adversely affect nearby shallow domestic wells in and around the proposed well field because pumping costs could increase. Therefore, under Demand Scenarios 2 and 3, potentially significant impacts to groundwater elevations in and around the proposed well field would occur.

Demand Scenario 4 Analysis

Under Demand Scenario 4, groundwater elevations and piezometric surface elevations in and around the proposed well field would be about 30 feet lower in dry years as compared to wet years. A small cone of depression would form in Aquifer 2 centered on the proposed well field. The magnitude of these fluctuations is the same as that estimated under the baseline condition.

Comparison of Demand Scenario 4 to baseline conditions shows that in and around the proposed well field site wet and dry year groundwater elevations would be approximately 25 feet and 20 feet lower than baseline conditions, respectively. Groundwater extraction proposed in Demand Scenario 4 could lower groundwater levels in Aquifer 1 to the point where approximately 130 local shallow domestic wells could be taken out of operation and/or would require deepening to continue operation. Piezometric surface elevations would be approximately 70 feet lower than baseline conditions in both wet and dry years under Demand Scenario 4. This impact on the piezometric surface of Aquifer 2 does not have the same significance as an impact of similar magnitude on Aquifer 1 because municipal wells, which extract groundwater Aquifer 1, are drilled sufficiently deep to withstand groundwater level fluctuations of the magnitude envisioned under this scenario. However, a consequence of lowering the piezometric surface elevation by 70 feet in Aquifer 2 would be the approximate 20-foot lowering of groundwater elevations in Aquifer 1. The lowering of piezometric surface elevation in Aquifer 2 would induce recharge (downward flow of water) from Aquifer 1 in and around the proposed well field site.

Similar to Demand Scenarios 2 and 3, this scenario would cause physical groundwater level changes (decline by 20 to 25 feet) that result in economic impacts to surrounding land owners. Specifically, approximately 130 shallow domestic wells may be taken out of service or require deepening to continue groundwater pumping. In additional, this decline in groundwater elevation also exceeds the groundwater stabilization levels identified in the Water Forum Plan. Therefore, significant impacts to groundwater elevations in and around the proposed well field site would occur under Demand Scenario 4.

Demand Scenario 5 Analysis

Under Demand Scenario 5, groundwater in Aquifer 1 would be about 30 feet lower in the vicinity of the proposed well field in dry years as compared to wet years. Piezometric surface elevations in Aquifer 2 show a 20-foot difference under the same conditions. A small cone of depression would form in Aquifer 2 centered around the proposed well field. The magnitude of these fluctuations between wet and dry years is the same as that estimated under the baseline condition.

Comparison of Demand Scenario 5 to baseline conditions shows that in and around the proposed well field site wet year groundwater elevations would be over 45 feet lower than baseline conditions. In fact, groundwater impacts are regional in nature under Scenario 5. Dry year groundwater elevations would be approximately 35 feet lower than baseline conditions. Groundwater extraction under the amounts proposed in this scenario could lower groundwater levels to the point where 790 local shallow domestic wells would be taken out of service and/or would require deepening to continue pumping groundwater.

Piezometric surface elevations in Aquifer 2 would be more than 110 feet lower than baseline conditions in both wet and dry years. A decline of this magnitude could lower the piezometric surface elevations below the base of the aquaclude. The impact on the piezometric surface of Aquifer 2 does not have the same significance as an impact on groundwater elevations in Aquifer 1 because municipal wells, which extract groundwater from Aquifer 2, are drilled sufficiently deep to withstand groundwater level fluctuations of the magnitude envisioned under this scenario. However, lowering of the piezometric surface elevation by over 110 feet in Aquifer 2 would induce recharge from Aquifer 1, causing the approximate 45-foot lowering of groundwater levels in Aquifer 1.

Similar to Demand Scenarios 2, 3, and 4, this scenario would cause physical groundwater level changes that result in economic impacts to surrounding land owners. Specifically, approximately 790 shallow domestic wells would be taken out of service and/or would require deepening to continue operation. In addition, this decline in groundwater elevation also exceeds the groundwater stabilization levels identified in the Water Forum Plan. Therefore, under Demand Scenario 5, significant impacts to groundwater elevations in and around the proposed well field would occur.

Demand Scenario 4a Analysis

Under Demand Scenario 4a, groundwater elevations in Aquifer 1 would be about 40 feet lower in the vicinity of the proposed well field in dry years as compared to wet years. Aquifer 2 shows a 60-foot difference under the same conditions. The magnitude of these fluctuations between wet and dry years is greater than estimated under baseline conditions. This primarily due to the groundwater "mounding" that results from delivery of surface water to the area.

Wet year groundwater elevations in Aquifer 1 under Demand Scenario 4a would be higher than those under the baseline condition. An increase in groundwater elevation over 10 feet is observed in and around the proposed well field. Similarly, dry year groundwater elevations in Aquifer 1 are approximately 1 foot higher than under baseline conditions. Piezometric surface elevations in Aquifer 2 under this scenario are also substantially higher (approximately 35 feet) in wet years. In dry years, the piezometric surface elevations would be approximately 3 feet lower. Because groundwater elevations are consistent with stabilization levels identified in the Water Forum Plan, groundwater elevation impacts under this scenario would be considered less than significant.

Demand Scenario 5a Analysis

Under Demand Scenario 5a, groundwater elevations of Aquifer 1 would be about 40 feet lower in the vicinity of the proposed well field in dry years as compared to wet years. Aquifer 2 shows a 50- to 60-foot difference under the same conditions. The magnitude of these fluctuations between the wet and dry years is greater than that estimated under the baseline condition. This is primarily due to the groundwater "mounding" during wet years that result from the delivery of surface water to the area.

Wet year groundwater elevations in Aquifer 1 under Demand Scenario 5a are similar to those under the baseline condition. However, a slight decrease of approximately 5 feet is centered at the well field. Dry year groundwater elevations in Aquifer 1 under Demand Scenario 5a result in an approximate 10-foot decrease at the well field, with minor areas subject to a 10-13 foot decrease.

Impacts to the piezometric surface elevations in Aquifer 2 under Demand Scenario 5a vary between wet and dry years. In wet years, Aquifer 2 piezometric surface elevations would be approximately 10 feet lower than those under baseline conditions. In dry years, a 15-foot decrease would be centered around the proposed well field. This results from the large volume of groundwater extracted in the dry year (up to 32,822 AF). In wet years, surface water would be delivered under the Zone 40 conjunctive use program. Because groundwater elevations are consistent with stabilization levels identified in the Water Forum Plan, groundwater elevation impacts under this scenario would be considered less than significant.

Impact 3.3-10. Increased need for development of long-term regional surface and groundwater supplies.

Implementation of the Zone 40 WSMP, Zone 41 UWMP, and Zone 40 WSIP, will provide SCWA Zone 40 with long-term groundwater supplies. SCWA has secured (and is in the process of securing additional) surface water entitlements that would allow SCWA to meet its projected 2030 water demands. Under the Zone 40 Master Plan Update, Sacramento County proposes construction of a surface water diversion structure on the Sacramento River, treatment facilities, and a network of pipelines to convey surface water throughout the Zone 40 service area. The North Vineyard Well Field that would provide initial supplies to the project site would ultimately be integrated with the Zone 40 surface water facilities to provide conjunctively managed surface and groundwater to the region.

Because Zone 40 water is allocated on a first-come, first-served basis, the water available to the project under the Zone 40 WSMP and the Zone 41 UWMP could be affected by rapid development in other portions of Zone 40 or by expansion of the City of Elk Grove's urban services area. The Elk Grove City Council voted in April 2010 to expand the City's urban services boundary to the south and east (south of Kammerer Road and southeast of Grant Line Road), which would add 8,000 acres of developable land to the city limits (Kalb 2010). As development occurs, SCWA will track service demands in relation to available supplies. Specific projects that are planned for in the future would be served with water supplies as the necessary conveyance and treatment facilities to deliver water to the newly developing areas are developed.

The City conducted a water supply evaluation for the City General Plan that concluded that water supplies are currently available to meet the water demands associated with buildout of the City's corporate limits, but the City would be required to secure additional water supplies to meet its projected 2050 demands (City of Ranch of Rancho Cordova, 2006). Increased water demands could result in increased groundwater pumping, an increased demand for new surface water supplies, an increased demand for recycling and water conservation programs, and/or an increased demand for local water purveyors to expand their service areas (City of Rancho Cordova, 2006). Potential projects to secure additional supplies could include the negotiation of new water right transfers; construction of new diversion

structures; expansion or construction of new water treatment plants; and construction of new potable-water and recycled-water distribution facilities (City of Rancho Cordova, 2006).

Because the project site is within the City's corporate limits, sufficient water supply is anticipated to be available in the long-term, at full buildout of the Specific Plan, and there is no adverse cumulative condition.

4.3.2.3 SURFACE WATER QUALITY

Impact 3.3-2 - Potential for discharges that affect surface water quality.

Even under compliance with the county grading and erosion ordinances, and county and state stormwater quality control requirements, the Proposed Project Alternative, in conjunction with other planned development, would result in a cumulatively considerable contribution to decreased surface water quality in Morrison and Laguna Creeks.

4.3.2.4 AIR QUALITY

Impact 3.4-3 – Long-term increase in ROG, NO_x and PM_{10} emissions.

Activities associated with new residents moving into the Proposed Project Alternative's 3,258 single family homes would result in increased air emissions of ROG, NO_x, and PM_{10}, substantially above the significance thresholds for these pollutants. Therefore, the Proposed Project Alternative, in conjunction with other planned development, would result in a cumulatively considerable contribution to long-term increases in ROG, NO_x, and PM_{10} emissions.

4.3.2.5 TRAFFIC AND TRANSPORTATION

Impact 3.7-1 – Reduction of level of service

Traffic data used to establish the environmental conditions in the study area were modeled and compiled in the 2001 SDCP/SRSP EIR (County of Sacramento, 2001), and the 2006 Rio del Oro Specific Plan Project DEIR/DEIS (RDOSPP, 2006). The SDCP/SRSP EIR evaluated Existing Conditions, Existing Conditions Plus Proposed Project, Cumulative Conditions (Without Proposed Project) and Cumulative Conditions Plus Proposed Project for the year 2015. The Rio del Oro Specific Plan Project DEIR/DEIS identified the Cumulative Conditions for the year 2030, incorporating roadway improvement projects associated with planned development projects in the area including the SDCP/SRSP. For the purposes of this EIS, the conditions anticipated under the Cumulative Conditions plus Proposed Project for the year 2015 as well as the Cumulative Conditions for the year 2030 govern the analysis.

SUNRISE-DOUGLAS COMMUNITY PLAN/SUNRIDGE SPECIFIC PLAN RESULTS OF CUMULATIVE PLUS PROJECT ANALYSIS

According to the Cumulative Plus Project analysis illustrated in the SDCP/SRSP EIR, at the following locations project traffic would exacerbate or create conditions that exceed Sacramento County standards for daily or peak hour operations:

- US 50 between Mather Field Road and Sunrise Boulevard as well as ramps at Mather Field Road, Zinfandel Drive and Sunrise Boulevard
- Sunrise Boulevard from Folsom Boulevard to Coloma Road
- Zinfandel Drive from Folsom Boulevard to International Drive
- Operations at the following intersections:
    - Mather Field Road at International Drive (LOS F during the PM peak hour)
    - Zinfandel Drive at Douglas Road (from LOS B to LOS F during the PM peak hour)
    - Sunrise Boulevard at Douglas Road (from LOS D to LOS F during the PM peak hour)
    - White Rock Road at Sunrise Boulevard (LOS F during both peak hours)
    - Zinfandel Drive at Sunrise Boulevard (LOS F during both peak hours)
    - White Rock Road at Grant Line Road (LOS F during the PM peak hour)
    - Folsom Boulevard at Sunrise Boulevard (LOS F during both peak hours)

According to the Cumulative Plus Project analysis illustrated in the SDCP/SRSP EIR, for full development, traffic impacts would be significant even after implementation of mitigation measures.

RIO DEL ORO SPECIFIC PLAN PROJECT DEIR/DEIS CUMULATIVE CONDITIONS

According to the Cumulative Plus Project analysis discussed in the Rio del Oro Specific Plan Project EIS/EIR, the following roadway segments, even with mitigation measures offered under the Rio del Oro Specific Plan will experience significant impacts from the Rio del Oro Specific Plan Project:

- International Drive between South White Rock Road and Zinfandel Drive
- Zinfandel Drive between US 50 Eastbound Ramps and White Rock Road
- Sunrise Boulevard between Gold Country Boulevard and Coloma Road
- Sunrise Boulevard between Coloma Road and US 50 Westbound Ramps
- Sunrise Boulevard between US 50 Eastbound ramps and Folsom Boulevard
- Sunrise Boulevard between Folsom Boulevard and White Rock Road
- Hazel Avenue between Winding Way and US 50 Westbound Ramps
- US 50 between Mather Field Road and Zinfandel Drive, between Sunrise Boulevard and Rancho Cordova Parkway, between Rancho Cordova Parkway and Hazel Avenue and between Hazel Avenue and Folsom Boulevard including merge, diverge and weave segments
- Sunrise Boulevard between Douglas Road and Chrysanthy Boulevard
- Rancho Cordova Parkway between Easton Valley Parkway and White Rock Road

According to the Cumulative Plus Project analysis illustrated in the Rio del Oro Specific Plan Project, the following intersections, even with mitigation measures offered under the Rio del Oro Specific Plan, will experience significant impacts from the Rio del Oro Specific Plan Project:

- SR 16 at Eagles Nest Road
- Grant Line Road at Sunrise Boulevard
- Grant Line Road at Kiefer Boulevard
- Sunrise Boulevard at Douglas Road
- Mather Field Road at US 50 Eastbound Ramps
- Mather Field Road at International Drive
- Zinfandel Drive at International Drive
- Zinfandel Drive at White Rock Road
- Zinfandel Drive at US 50 Eastbound Ramps
- Sunrise Boulevard at White Rock Road
- Sunrise Boulevard at Folsom Boulevard
- Sunrise Boulevard at US 50 Westbound Ramps
- Sunrise Boulevard at Zinfandel Drive
- Hazel Avenue at Folsom Boulevard
- Hazel Avenue at US 50 Eastbound Ramps
- Hazel Avenue at US 50 Westbound Ramps
- Grant Line Road at White Rock Road
- Sunrise Boulevard at International Drive
- Rancho Cordova Parkway at White Rock Road
- Rancho Cordova Parkway at US 50 Eastbound Ramps
- White Rock Road at Americanos Boulevard
- Hazel Avenue at Gold Country Boulevard

Based on the analyses described above, under the cumulative condition, the Proposed Project Alternative would increase peak-hour and daily traffic volumes, resulting in level of service decreases at various roadway segments, intersections, and freeway ramps, including roadways that are already at LOS E or F. Some of the affected roadways and intersections cannot be expanded to accommodate increased traffic. These decreases would result in a cumulatively considerable contribution to the current adverse levels of service.

4.3.2.6 NOISE

Impact 3.8-4 – Project generated increases in traffic noise levels on area roadways

The increase in housing results directly in increased daily vehicle trips. The increase in daily traffic volumes resulting from implementation of the Proposed Project Alternative would generate increased noise levels along nearby roadways. Therefore, the Proposed Project Alternative, in conjunction with

other planned development, would result in a cumulatively considerable contribution of increased noise levels on area roadways.

4.3.2.7 PUBLIC HEALTH

Impact 3.11-3 – Human health hazards associated with mosquito-borne disease

Although the mosquito controls applied by the SYMVCD are considered to be appropriate and safe for human exposure, the project could result in a new risk of adverse health effects associated with vector-borne diseases or hazards associated with vector control, because new water-related sources of mosquito breeding habitat would be created, and the project currently does not have wetland mosquito management guidelines. Implementation of the Proposed Project Alternative would have a potentially significant impact on human health related to mosquito-borne diseases. Therefore, the Proposed Project Alternative, in conjunction with other planned development, would result in a cumulatively considerable contribution of human exposure to mosquito-borne disease.

4.3.2.8 VISUAL RESOURCES

Impact 3.13-3 - Degradation of visual character
Impact 3.13-5 - New light and glare effects
Impact 3.13-6 - New skyglow effects

The project would change 742 acres of rural, undeveloped, or agricultural land to urban land uses. With the development of other large planned projects in the vicinity, much of the remaining open space within Rancho Cordova is expected to be converted to other land uses. When considered along with past urban development and planned future development proposed in the city, the surrounding communities, and the county as a whole, the Proposed Project Alternative would result in a cumulatively considerable contribution to degradation of visual character, new light and glare effects, and new skyglow effects.

4.3.2.9 CLIMATE CHANGE

Impact 3.16-1 – Short-term increase in construction-related GHG emissions
Impact 3.16-2 – Long-term increase in GHG emissions

Activities associated with the construction of single family homes and associated infrastructure may result in short-term increases in construction-related GHG emissions. These emissions would result from construction activities, including construction worker commute trips and mobile and stationary construction equipment exhaust. Activities associated with project build-out and operations in the project site may result in long-term increases in GHG emissions. Long-term direct and indirect emissions of GHGs from the project include area- and mobile-source emissions, and indirect emissions from in-state energy production and water consumption (energy for conveyance, treatment, distribution, and wastewater treatment). Implementation of the Proposed Project Alternative, in conjunction with worldwide GHG emissions, would result in a cumulatively considerable contribution to long-term increases in GHG emissions.

4.4 REQUIRED DISCLOSURES

4.4.1 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

NEPA requires that an environmental analysis include identification of "…any irreversible and irretrievable commitments of resources which would be involved in the Proposed Project Alternative should it be implemented." Irreversible and irretrievable resource commitments are related to the use of nonrenewable resources and the effects that this use could have on future generations. Irreversible effects result primarily from the use or destruction of a specific resource (e.g., energy and minerals) that cannot be replaced within a reasonable time frame. Irretrievable resource commitments involve the loss in value of an affected resource that cannot be restored as a result of the action (e.g., extinction of a threatened or endangered species or the disturbance of a cultural resource).

There are several resources, both natural and built, that would be expended in the construction and operation of the project. These resources include the building materials used in construction of the project; energy in the form of natural gas, petroleum products, and electricity consumed during construction and operation of housing and commercial land uses; and the human effort required to develop and construct various components of the project. These resources are considered irretrievably committed because their reuse for some other purpose than the project would be impossible or highly unlikely.

The project constitutes an irreversible and irretrievable commitment of the site as a land resource, thereby rendering land use for other purposes infeasible. The Proposed Project Alternative represents a permanent change of land use. Such decisions are considered irreversible when their implementation would affect a resource that has deteriorated to the point that renewal can occur only over a long period of time or at great expense, or because they would cause the resource to be destroyed or removed. Thus, except to the extent minimized by the designation of the on-site wetland preserve, the losses resulting from this project to the identified vernal pool species and their habitat would be irreversible.

4.4.2 SIGNIFICANT AND UNAVOIDABLE EFFECTS

The amount of vernal pools in the Mather Core Area, in the Southeastern Sacramento Valley region within Sacramento County, and in the Central Valley vernal pool complexes have been substantially reduced in size from historical actions, continue to be degraded by current actions, and are continuously subject to loss, fragmentation, alteration, and degradation from conversions and encroachment by planned agricultural and urban developments.

Even with implementation of the proposed mitigation, the project would result in significant and unavoidable effects to the following resources:

- Impact 3.2-1 – An adverse effect on a population of threatened, endangered, or candidate species
- Impact 3.2-2 – A net loss in the habitat value of sensitive biological habitat
- Impact 3.2-3 –Substantial impedance to the movement or migration of fish or wildlife
- Impact 3.2-4 – Substantial population loss of any native fish, wildlife, or vegetation
- Impact 3.3-2 – Potential for discharges that affect surface water quality
- Impact 3.3-9 - Changes in groundwater elevation adjacent to the proposed well field
- Impact 3.3-10 – Increased need for development of long-term regional surface and groundwater supplies

- Impact 3.4-3 – Long-term increase in ROG, No_x and PM_{10} emissions
- Impact 3.7-1 – Reduction of level of service
- Impact 3.8-4 – Project-generated increases in traffic noise levels on area roadways
- Impact 3.13-3 – Degradation of visual character
- Impact 3.13-5 – New light and glare effects
- Impact 3.13-6 – New skyglow effects
- Impact 3.16-1 – Short-term increase in construction-related GHG emissions
- Impact 3.16-2 – Long-term increase in GHG emissions

These cumulative impacts would be significant and unavoidable, because neither planned nor potential mitigation can avoid or substantially reduce these specific effects. The project proponents are not required to mitigate for cumulative impacts; in fact, the Sunridge Properties represent only a small contribution to these cumulative impacts.

4.4.3 RELATIONSHIP BETWEEN SHORT-TERM USES OF THE ENVIRONMENT AND MAINTENANCE AND ENHANCEMENT OF LONG-TERM PRODUCTIVITY

NEPA requires consideration of the relationship between short-term uses of the environment and long-term productivity associated with a project. This comparison is generally interpreted to recognize that a short-term (temporary) use of the environment may enable the advancement of long-term community needs. For example, construction of a school would negatively affect traffic and air quality in the short-term, but would fulfill a long-term community need to provide adequate educational facilities for its residents. A community might be willing to accept this trade-off.

4.4.3.1 SHORT-TERM USES

Implementation of the Proposed Project Alternative would result in temporary and short-term construction-related impacts. Temporary and short-term construction impacts would be associated predominantly with water quality, traffic, air quality emissions, and noise. The project applicant would implement mitigation measures identified in each resource section to reduce these impacts to a less-than-significant level wherever feasible. At the same time, however, construction of the project would create economic benefits during construction, in the form of jobs and the subsequent direct and indirect demand for goods and services.

4.4.3.2 LONG-TERM USES

Implementation of the Proposed Project Alternative would enhance the long-term economic productivity of the region, but would also result in long-term impacts related to the loss of vernal pool and species habitat; surface water quality deprodation; a change in the visual character and quality of the project site; increased air quality emissions; and increased traffic and, the introduction of urban noise. Therefore, while the provision of housing would fulfill a long-term community need, the negative impact to the environment would also be long-term.

5 COMPLIANCE WITH APPLICABLE LAWS, POLICIES, AND PLANS

The Proposed Action must comply with the Federal, state, and local laws, policies, and plans described below. The EIS shall list all the Federal permits, licenses, and other entitlements which must be obtained in implementing the Proposed Action (40 CFR §1502.25). If there is uncertainty whether a Federal permit, license, and other entitlement is required, it will be stated in the discussion below. Sections 5.1, 5.2, and 5.3 summarize the Federal, state, and local laws, policies and plans, respectively, that are addressed either in this EIS or in a subsequent action by the permit applicant. Section 5.4 provides a listing of the compliance activity and method of compliance.

5.1 FEDERAL

NATIONAL ENVIRONMENTAL POLICY ACT

The National Environmental Policy Act (NEPA) (42 United States Code [USC] 4321; 40 CFR §1500.1) applies to all Federal agencies that manage, regulate, or fund projects or programs that could have environmental effects. It requires Federal agencies to disclose and consider the environmental implications of their proposed actions. NEPA establishes environmental policies, provides an interdisciplinary framework for preventing environmental damage, and contains "action-forcing" procedures to ensure that Federal agencies take environmental factors into account when making decisions to approve a project or program. NEPA requires the preparation of an appropriate document to ensure that Federal agencies accomplish the law's purposes.

ENDANGERED SPECIES ACT

The Endangered Species Act (ESA) of 1973, as amended (16 USC §1531 *et seq*.) provides for the conservation and recovery of endangered and threatened species and the ecosystems upon which they depend. Section 7 of the ESA requires federal agencies to aid in the conservation and recovery of listed species and to ensure that their activities will not jeopardize the continued existence of listed species or adversely modify designated critical habitat. The U.S. Fish and Wildlife Service (USFWS) and the National Oceanic and Atmospheric Administration are responsible for administration of the ESA.

MIGRATORY BIRD TREATY ACT

The Migratory Bird Treaty Act (MBTA) of 1918, as amended (16 USC §703 *et seq*.) decrees that all migratory birds and their parts (including eggs, nests and feathers) are fully protected. Migratory birds include geese, ducks, shorebirds, raptors, songbirds, wading birds, seabirds, and passerine birds (such as warblers, flycatchers, and swallows). Under the MBTA, taking, killing or possessing migratory birds is unlawful, and projects that are likely to result in take of birds protected under the MBTA would require the issuance of take permits from the USFWS. Activities that would require such a permit would include destruction of migratory bird nesting habitat during the nesting season when eggs or young are likely to be present.

FISH AND WILDLIFE COORDINATION ACT

The Fish and Wildlife Coordination Act of 1934, as amended (16 USC §661 *et seq*.) requires consultation with USFWS whenever the waters or channel of a body of water are modified by a department or agency of the United States (U.S.). The Act provides for wildlife conservation through planning, development, maintenance and coordination of wildlife conservation and rehabilitation.

EXECUTIVE ORDER 11990- PROTECTION OF WETLANDS

Executive Order 11990, Protection of Wetlands (Federal Register (FR) 26961) was issued May 24, 1977, and directed Federal agencies to minimize the destruction, loss or degradation of wetlands, and to preserve and enhance the natural and beneficial values of wetlands in carrying out their responsibilities. Executive Order 11990 requires Federal agencies to "avoid to the extent possible the long-term and short-term adverse impacts associated with the destruction or modification of wetlands and to avoid direct or indirect support of new construction in wetlands wherever there is a practicable alternative."

CLEAN WATER ACT

The federal Water Pollution Control Amendments of 1972, as amended (33 USC §1251 *et seq*, commonly known as the Clean Water Act) is the primary federal law in the U.S. governing water pollution. The CWA established the goals of eliminating releases to water of high amounts of toxic substances, eliminating additional water pollution by 1985, and ensuring that surface waters would meet standards necessary for human sports and recreation by 1983.

Under Section 404 of CWA, discharges of dredged or fill material into "waters" of the U.S. are prohibited without a permit from the USACE. Among other regulatory program requirements, an applicant for a Department of the Army (DA) permit involving a discharge must demonstrate under USEPA's 404(b)(1) guidelines that the proposed activity is the least environmentally damaging practicable alternative that achieves the project's overall purpose.

Section 401 of the CWA requires certification from the state to ensure compliance with state water quality standards for any activity that may result in a discharge to a water body. A project that would result in the discharge of any pollutant, including soil, into waters and wetlands requires coordination with the appropriate California Regional Water Quality Control Board to obtain Section 401 certification.

The CWA is also applicable to Hydrology, Water Supply, Water Quality, and Groundwater, as it requires states to adopt water quality standards and to submit those standards for approval by the USEPA. Clean Water Act Section 303(d) requires states to list surface waters not attaining (or not expected to attain) water quality standards after the application of technology-based effluent limits, and states must prepare and implement a total maximum daily load for all listed waters. For point source discharges to surface water, the Clean Water Act authorizes the USEPA or approved states to administer the National Pollutant Discharge Elimination System (NPDES) Program.

SAFE DRINKING WATER ACT

The USEPA is responsible for developing and implementing drinking water regulations under the federal Safe Drinking Water Act (SDWA) of 1974. The SDWA applies to every public water system in the U.S. States can apply to the USEPA for "primacy," the authority to implement SDWA within their jurisdictions, if they can show that they will adopt standards at least as stringent as the USEPA's and make sure water systems meet these standards. All states and territories, except Wyoming and the District of Columbia, have received primacy. California's implementation of the SDWA (CA SDWA) is

more stringent than the federal SDWA. The California Department of Public Health (CDPH), Office of Drinking Water, has been delegated the authority to implement drinking water regulations within the state. The California Code of Regulations (CCR) is the official compilation and publication of the regulations adopted, amended or repealed by California. The California regulations contain the state's requirements for production, discharge, distribution, and use of recycled water (22 CCR Division 4).

CLEAN AIR ACT

The federal Clean Air Act (CAA), passed in 1970 and last amended in 1990, forms the basis for the national air pollution control effort. Basic elements of the act include national ambient air quality standards for major air pollutants, hazardous air pollutants standards, state attainment plans, motor vehicle emissions standards, stationary source emissions standards and permits, acid rain control measures, stratospheric ozone protection, and enforcement provisions.

In the 1990 CAA Amendments, Congress added specific provisions to the conformity requirements for transportation actions. "Conformity" requires that federal agencies demonstrate their actions' consistency with State Implementation Plans. These conformity requirements have been determined to apply to air quality also. A USEPA final rule states that a conformity determination of a federal action is required for "each pollutant where the total of direct and indirect emissions" caused by the action equals or exceeds the emissions limits established in the rule.

EXECUTIVE ORDER 12898 – ENVIRONMENTAL JUSTICE

The 1994 Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, requires all Federal agencies to conduct "programs, policies, and activities that substantially affect human health or the environment, in a manner that ensures that such programs, policies, and activities do not have the effect of excluding persons (including populations) from participation in, denying persons (including populations) the benefits of, or subjecting persons (including populations) to discrimination under, such programs, policies, and activities, because of their race, color, or national origin." Section 1-101 of the Order requires Federal agencies to identify and address "disproportionately high and adverse human health or environmental effects" of programs on minority and low-income populations.

NATIONAL HISTORIC PRESERVATION ACT

The National Historic Preservation Act (NHPA), as amended, 16 SC. 470, directs Federal agencies to integrate historic preservation into all activities that either directly or indirectly involve land use decisions. The NHPA is administered by the National Park Service, the Advisory Council on Historic Preservation (ACHP), State Historic Preservation Office (SHPO), and each Federal agency. Implementing regulations include 36 CFR Part 800: *Regulations of the Advisory Council on Historic Preservation Governing the NHPA Section 106 Review Process*. Section 106 of the NHPA requires Federal agencies to take into consideration the impact an action may have on historic properties that are included on, or are eligible for inclusion on, the NRHP. The Section 106 review process is usually carried out as part of a formal consultation with the SHPO, the ACHP, and other parties, such as Indian tribes, that have knowledge of, or a particular interest in, historic resources in the area of the undertaking.

ARCHEOLOGICAL AND HISTORIC PRESERVATION ACT

The Archeological and Historic Preservation Act (AHPA) of 1974, 16 USC §469 *et seq.* provides for the preservation of cultural resources if an activity may cause irreparable loss or destruction of significant

scientific, prehistoric, or archeological data. In accordance with the AHPA, the responsible official or the Secretary of the Interior is authorized to undertake data recovery and preservation activities.

NATIONAL NATURAL LANDMARKS

The Secretary of the Interior is authorized to designate areas as National Natural Landmarks for listing on the National Registry of Natural Landmarks pursuant to the Historic Act of 1935, 16 U.S. Code §461 *et seq*. In conducting the environmental review of the Proposed Action, USEPA is required to consider the existence and location of natural landmarks, using information provided by the National Park Service pursuant to 36 CFR 62.6(d).

FARMLAND PROTECTION POLICY ACT

The Farmland Protection Policy Act (FPPA) (Public Law 97-98) was passed in 1981 to minimize the conversion of farmland to non-agricultural uses under Federal projects and programs. The U.S. Department of Agriculture (USDA) National Resources Conservation Service (NRCS) oversees the FPPA and maintains an inventory of prime farmland, unique farmland, and farmland of statewide or local importance within the U.S., its territories, and trust areas. The inventory is implemented in cooperation with other interested agencies at the national, state and local levels of government.

TOXIC SUBSTANCES CONTROL ACT

The Toxic Substances Control Act (TSCA) of 1976 provides the USEPA with authority to require reporting, record-keeping and testing requirements, and restrictions relating to chemical substances and/or mixtures. TSCA addresses the production, importation, use, and disposal of specific chemicals including PCBs, asbestos, radon and lead-based paint. Certain substances are generally excluded from TSCA, including, among others, food, drugs, cosmetics and pesticides. For the past decade, the USEPA has focused efforts on protecting citizens from existing chemicals by making basic screening-level toxicity information publicly available. In 2008, the USEPA expanded those efforts with the Chemical Assessment and Management Program, or "ChAMP."

RESOURCE CONSERVATION AND RECOVERY ACT

The Resource Conservation and Recovery Act (RCRA), passed in 1976, regulates ongoing operations involving the generation, transportation, treatment, storage, and disposal of hazardous waste. RCRA gave the USEPA the authority to control hazardous waste from the "cradle-to-grave." RCRA was amended in 1984 by the Hazardous and Solid Waste Amendments, which established restrictions requiring the treatment of hazardous waste before disposal in landfills.

COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION, AND LIABILITY ACT

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) provides a Federal "Superfund" to clean up uncontrolled or abandoned hazardous waste sites as well as accidents, spills, and other emergency releases of pollutants and contaminants into the environment. Through CERCLA, the USEPA was given power to seek out those parties responsible for any release and assure their cooperation in the cleanup.

The USEPA cleans up orphan sites when potentially responsible parties cannot be identified or located, or when they fail to act. Through various enforcement tools, the USEPA obtains private party cleanup through orders, consent decrees, and other small party settlements. The USEPA also recovers costs from

financially viable individuals and companies once a response action has been completed. The USEPA is authorized to implement the Act in all 50 states and U.S. territories. Superfund site identification, monitoring, and response activities in states are coordinated through the state environmental protection or waste management agencies.

The Superfund Amendments and Reauthorization Act (SARA) of 1986 reauthorized CERCLA to continue cleanup activities around the country. Several site-specific amendments, definitions clarifications, and technical requirements were added to the legislation, including additional enforcement authorities. Also, Title III of SARA authorized the Emergency Planning and Community Right-to-Know Act (EPCRA) Local Studies.

5.2 STATE

CALIFORNIA ENDANGERED SPECIES ACT

The California Department of Fish and Game (CDFG) is responsible for administration of the California Endangered Species Act (CESA) of 1984, as amended (Fish and Game Code 2050 *et seq*.). Unlike under the Federal ESA, there are no state agency consultation procedures under CESA. For projects that affect both a state and Federal listed species, compliance with the Federal ESA will satisfy CESA if CDFG determines that the Federal incidental take authorization is "consistent" with CESA. Projects that will result in a take of a state-only listed species require a take permit under CESA.

FISH AND GAME CODE

CDFG has responsibility for protection of streams, water bodies, and riparian corridors through the Streambed Alteration Agreement process under §1601-1606 of the California Fish and Game Code. CDFG regulates activities that would alter the flow, bed, channel or bank of streams and lakes. Wetlands under jurisdiction of USACE may or may not be included in the area covered by a Streambed Alteration Agreement obtained from CDFG.

PORTER-COLOGNE WATER QUALITY CONTROL ACT

The Porter-Cologne Water Quality Control Act is the principal state law governing water quality regulation in California. The Porter-Cologne Act established a comprehensive program to protect water quality and the beneficial uses of water, and established the State Water Resources Control Board (SWRCB) and nine Regional Water Quality Control Boards (RWQCB)s which are charged with implementing its provisions, and which have primary responsibility for protecting water quality in California. The SWRCB provides program guidance and oversight, allocates funds, and reviews RWQCB decisions. The RWQCBs have primary responsibility for individual permitting, inspection, and enforcement actions within each of nine hydrologic regions. The Sacramento-San Joaquin Delta falls under the jurisdiction of the Central Valley RWQCB. The RWQCBs regulate point source discharges under the Porter-Cologne Act primarily through issuance of NPDES and waste discharge requirement permits. The SWRCB and RWQCBs also have numerous nonpoint source-related responsibilities.

A Storm Water Pollution Prevention Plan (SWPPP) is required by the RWQCB for most construction sites. Project applicants may prepare and file an SWPPP under the State's General Industrial Activities Storm Water Permit. The SWPPP must describe how the project will minimize the short and long-term impacts on receiving water quality including potential hydromodification impacts. The SWPPP covers construction or operations that may affect the discharge of pollutants from the construction site to surface waters, groundwater, or the municipal separate storm sewer system. Among other requirements, the

SWPPP must identify (1) the locations of all authorized and/or unauthorized non-storm water discharges; (2) the location of sensitive habitats, watercourses or other features that are not to be disturbed; and, (3) erosion control measures.

CALIFORNIA DEPARTMENT OF PUBLIC HEALTH REQUIREMENTS

The CDPH has requirements that specify the minimum distance, or the minimum "travel" time, between known contaminant plumes and municipal groundwater extraction well sites. The intent is to place municipal production wells a sufficient distance from known contaminant plumes to reduce or eliminate the possibility of contamination of extracted groundwater. This requirement would be enforced by implementation of the CDPH Drinking Water Source Assessment and Protection Program. Under the assessment program, all new and existing drinking water sources must undergo a drinking water source assessment prior to being permitted. The general elements of the assessment include: a) Delineation of an area around a drinking water source through which contaminants might move and reach the source, b) An inventory of possible contaminating activities that might lead to the release of microbiological or chemical contaminants within the delineated area, and c) A determination of the possible contaminating activity to which the drinking water source is most vulnerable.

SENATE BILLS 610 AND 221

The State of California has enacted legislation that is applicable to the consideration of larger projects under CEQA. Senate Bill (SB) 610 (Chapter 643, Statutes of 2001)) requires the preparation of water supply assessments (WSAs) for large developments (i.e., more than 500 dwelling units or nonresidential equivalent), such as the Sunridge Specific Plan (Public Resources Code §21151.9; Water Code §10910 et seq.). The WSAs prepared by "public water systems" responsible for serving project areas, address whether existing and projected water supplies are adequate to serve the project while also meeting existing urban and agricultural demands and the needs of other anticipated development in the service area in which the project is located. If the most recently adopted Urban Water Management Plan (UWMP) accounted for the projected water demand associated with the project, the public water system may incorporate the requested information from the UWMP. If the UWMP did not account for the project's water demand, or if the public water system has no UWMP, the project's WSA shall discuss whether the system's total projected water supplies (available during normal, single-dry, and multiple-dry water years during a 20-year projection) would meet the project's water demand in addition to the system's existing and planned future uses, including agricultural and manufacturing uses.

Where a WSA concludes that insufficient supplies are available, the public water system must provide to the city or county considering the development project its plans for acquiring and developing additional water supplies. Based on all the information in the record relating to the project, including all applicable WSAs and all other information provided by the relevant public water systems, the city or county must determine whether sufficient water supplies are available to meet the demands of the project, in addition to existing and planned future uses. Where a WSA concludes that insufficient supplies are available, the WSA must lay out the steps that would be required to obtain the necessary supply. The WSA is required to include (but is not limited to) identification of the existing and future water supplies over a 20-year projection period. This information must be provided for average normal, single-dry, and multiple-dry years. The absence of an adequate current water supply does not preclude project approval, but it does require a lead agency to address a water supply shortfall in its project findings.

If the project is approved, additional complementary statutory requirements, SB 221 (2001), would apply to the approval of tentative subdivision maps for more than 500 residential dwelling units (Government Code §66473.7). This statute requires cities and counties to include, as a condition of approval of such tentative maps, the preparation of a "water supply verification." The verification, which must be

completed by no later than the time of approval of final maps, is intended to demonstrate that there is a sufficient water supply for the newly created residential lots. The statute defines sufficient water supply as follows:

> *... the total water supplies available during normal, single-dry, and multiple-dry years within a 20-year projection period that would meet the projected demand associated with the proposed subdivision, in addition to existing and planned future uses, including, but not limited to, agricultural and industrial uses.*

A number of factors must be considered in determining the sufficiency of projected supplies:

- The availability of water supplies over a historical record of at least 20 years;
- The applicability of an urban-water-shortage contingency analysis that includes action to be undertaken by the public water system in response to water supply shortages;
- The reduction in water supply allocated to a specific water-use sector under a resolution or ordinance adopted or a contract entered into by the public water system, as long as that resolution, ordinance, or contract does not conflict with statutory provisions giving priority to water needed for domestic use, sanitation, and fire protection; and
- The amount of water that the water supplier can reasonably rely on receiving from other water supply projects, such as conjunctive use, reclaimed water, water conservation, and water transfer, including programs identified under Federal, state, and local water initiatives.

THE CALIFORNIA CLEAN AIR ACT

The California Clean Air Act (CCAA) establishes an air quality management process that generally parallels the federal process. The CCAA focuses on attainment of the state ambient air quality standards that are more stringent than the Federal standards for certain pollutants and measurement periods.

The CCAA requires that air districts prepare an air quality attainment plan if the district violates state air quality standards for CO, sulfur dioxide, NOx, and ozone, but does not require an attainment plan for exceedances in particulate matter 10 microns in diameter or smaller (PM10) standards. The CCAA requires that the state air quality standards be met as expeditiously as practicable, but it does not set precise attainment deadlines.

The air quality attainment plan requirements established by the CCAA are based on the severity of air pollution problems caused by locally generated emissions. Upwind air pollution control districts are required to establish and implement emission control programs commensurate with the extent of pollutant transport to downwind districts.

CALIFORNIA AIR RESOURCES BOARD AIR POLLUTANTS AND AMBIENT AIR QUALITY STANDARDS

The State of California and the Federal government have established ambient air quality standards for several different pollutants. For some pollutants, separate standards have been established for different periods. Most standards have been set to protect public health. For some pollutants, standards have been based on other standards, such as protection of crops, materials, or avoidance of nuisance conditions.

CALIFORNIA GOVERNMENT CODE- ENVIRONMENTAL JUSTICE

California law defines environmental justice as the "fair treatment of people of all races, cultures, and incomes with respect to the development, adoption, implementation, and enforcement of environmental laws, regulations, and policies," in Government Code §65040.12(e). §65040.12(a) designates the Governor's Office of Policy and Regulation (OPR) as the coordinating agency in state government for environmental justice programs and requires OPR to develop guidelines for incorporating environmental justice into general plans.

CALIFORNIA PUBLIC RESOURCES CODE- HISTORIC AND CULTURAL RESOURCES

The California State Office of Historic Preservation reviews state programs and projects pursuant to Sections 5024 and 5024.5 of the California Public Resources Code. Federal and Federally-sponsored programs and projects are reviewed pursuant to Sections 106 and 110 of the National Historic Preservation Act. Section 106 of the NHPA, as amended, requires federal agencies to consider the effects of proposed Federal undertakings on historic properties. NHPA's implementing regulations found in 36 CFR Part 800, require Federal agencies (and their designees, permittees, licensees, or grantees) to initiate consultation with the State Historic Preservation Officer as part of the Section 106 review process.

FARMLAND MAPPING AND MONITORING PROGRAM

At the state level, the California Department of Conservation administers the Farmland Mapping and Monitoring Program (FMMP), which was designed to document how much agricultural land in California was being converted to nonagricultural land or transferred into Williamson Act contracts. Farmland classification is based on soil quality, irrigation status, and land use. "Prime" farmland is considered to have the best features able to sustain long-term agricultural production.

WILLIAMSON ACT

The Williamson Act, also known as the California Land Conservation Act of 1965, enables local governments to enter into contracts with private landowners for the purpose of restricting specific parcels of land to agricultural or related open space use. When the County enters into a contract with the landowners under the Williamson Act, the landowner agrees to limit the use of the land to agriculture and compatible uses for a period of at least ten years and the County agrees to tax the land at a rate based on the agricultural production of the land rather than its real estate market value.

5.3 PLANS AND POLICIES

CONCEPTUAL-LEVEL STRATEGY FOR AVOIDING, MINIMIZING, AND PRESERVING AQUATIC RESOURCE HABITAT IN THE SUNRISE-DOUGLAS COMMUNITY PLAN AREA

In 2004, the USEPA, USFWS, and USACE developed a Conceptual Strategy for the Sunrise-Douglas Community Plan area. The Conceptual Strategy sets forth ten principles and standards that would be followed during development of projects within the Sunrise-Douglas Community Plan area in order to achieve reasonable protection and conservation of federally threatened and endangered species while taking a regional approach to avoidance and minimization of impacts to waters of the U.S., including wetlands. The Conceptual Strategy also supports development of the South Sacramento County Habitat Conservation Plan which seeks to protect vernal pool habitat within the Sunrise-Douglas Community Plan Area. Along with the Conceptual Strategy, a map was developed to identify preserve areas that represent the minimum acceptable level of onsite preservation required to maintain species and connectivity of their habitat, while recognizing that development is planned in the area.

VERNAL POOL RECOVERY PLAN

The USFWS's Vernal Pool Recovery Plan establishes an ecosystem-level strategy for the conservation and recovery of vernal pools. It covers 33 plant and animal species that occur exclusively or primarily within the vernal pool ecosystems of California and southern Oregon. The objectives of the plan are to address the threats to vernal pool species and to promote the conservation and preservation of vernal pool ecosystems.

SOUTH SACRAMENTO HABITAT CONSERVATION PLAN

The South Sacramento Habitat Conservation Plan (SSHCP) serves as a Habitat Conservation Plan pursuant to Section 10(a)(1)(B) of the ESA and is a regional approach to protecting natural resources in areas of development. Currently in draft, the Plan is a large-scale consolidated effort to protect and enhance wetlands (primarily vernal pools), aquatic, and upland habitats to provide ecologically viable conservation areas (County of Sacramento, 2008). Covering 40 different plant and wildlife species, including 10 that are state- or Federally-listed as threatened or endangered, the SSHCP will also serve to support application for Federal and state incidental take permits under the ESA and CESA.

RANCHO CORDOVA GENERAL PLAN

The City of Rancho Cordova General Plan sets forth goals, policies, and actions that are applicable to the proposed project with respect to the following resource categories:

- Biological Resources
- Land Use
- Population and Housing
- Traffic and Transportation
- Public Health and Safety
- Socioeconomics

ZONE 40 WATER SUPPLY MASTER PLAN

Zone 40 of the SCWA was formed to manage groundwater resources within the influence area of the Elk Grove cone of depression by providing for the acquisition, construction, maintenance, and operation of facilities for the production, treatment, transmission, distribution, conservation, and sale of ground and surface water within the zone. Zone 40 facilities would be constructed to meet the long-term water needs of the project area by providing for the conjunctive use of groundwater and surface water.

SDCP/SRSP WATER SUPPLY MASTER PLAN

Prior to City of Rancho Cordova incorporation, a project-level Water Supply Master Plan for the SDCP/SRSP was prepared by the applicant, agreed to by the Sacramento County Water Resources Division, and submitted to the County for approval by the Board of Supervisors, prior to tentative map approval.

The project level Water Supply Master Plan for the SDCP/SRSP area consists of five studies, which were included as Technical Appendices WS-1, WS-2, WS-3, WS-4 and WS-7 to the Sunrise-Douglas Community Plan/Sunridge Specific Plan EIR.

WATER FORUM PLAN

The objectives of the Water Forum Plan are to: (1) Provide a reliable and safe water supply for the region's economic health and planned development through the year 2030; and (2) Preserve the fishery, wildlife, recreational, and aesthetic values of the Lower American River. The first objective is to be met by additional diversions of surface water, increased conjunctive use of surface water and groundwater, expanded water conservation, and water reclamation. The second objective includes development of responsible and feasible alternatives to improve fish flow patterns, reduce daily flow fluctuations, and improve in-stream harvest.

The Final EIR for the Water Forum Plan was prepared in October of 1999; the City of Sacramento and County of Sacramento, acting as co-lead agencies, certified the Final EIR and adopted the Water Forum Plan in late 1999. Each of the stakeholders' governing bodies subsequently adopted the WFP in early 2000. Upon adoption, the WFP became the Water Forum Agreement, which is embodied in a Memorandum of Understanding between the City of Sacramento, the County of Sacramento and the various stakeholder groups.

REGIONAL HOUSING NEEDS PLAN

California's Housing Element Law (Government Code 65584) mandates that councils of government develop the Regional Housing Needs Plan (RHNP) for their service area. The Sacramento Area Council of Governments (SACOG) is the lead agency in developing the RHNP for the 22 cities and 6 counties that it serves, including Sacramento County and the City of Rancho Cordova.

Each city and county in the RHNP receives a Regional Housing Needs Allocation (RHNA) of total number of housing units that it must plan for within a 7.5 year time period. Within the total number of units, allocations are also made for the number of units within four economic categories: very low, low, moderate, and above moderate incomes. The allocations are intended to be used by jurisdictions when updating their housing elements as the basis for assuring that adequate sites and zoning are available to accommodate at least the number of units allocated under the RHNP.

CITY OF RANCHO CORDOVA TRANSIT MASTER PLAN

The Transit Master Plan provides an approach to support transportation objectives detailed in the City's General Plan. The plan proposes a system of city, neighborhood and regional services to connect residents to businesses, shopping, recreation and regional destinations. Regional services focus on bus rapid transit routes and additional stations along the Light Rail Gold Line. Local plans include shuttle services in the short term and an initial three-mile streetcar route in the long term.

MATHER AIRPORT COMPREHENSIVE LAND USE PLAN AND MATHER AIRPORT POLICY AREA

The Airport Land Use Commission for Sacramento, Sutter, Yolo and Yuba Counties adopted a Comprehensive Land Use Plan (CLUP) for Mather Airport. This CLUP includes regional policies for land use compatibility with respect to aircraft noise. For Mather Airport, the CLUP states: "As development is proposed in the area between the 60 and 65 dB Community Noise Equivalent Level (CNEL) noise contours, affected cities and counties should evaluate the impact of aircraft noise on proposed development and consider requiring noise reduction measures, aviation noise easements and buyer-renter notification. The CLUP also makes a finding confirming the California Airport Noise Regulation definitions of compatible land uses. In May 1997, the Airport Land Use Commission adopted the updated CLUP for Mather Airport. The CNEL contours in the updated CLUP reflect noise levels anticipated from the airport's build out use as a County-operated aviation facility. The Sacramento County Board of Supervisors adopted the CLUP into the County's General Plan in 1998, by adopting the

Mather Airport Policy Area (MAPA). The MAPA places development restrictions on residential uses within the MAPA area. The project site is outside the MAPA area.

FIRE CODES AND GUIDELINES

Several requirements and guidelines established by the Sacramento Metropolitan Fire District are applicable to the proposed project with respect to Public Health and Safety.

5.4 METHODS OF COMPLIANCE

Table 5-1 provides a listing of the applicable laws, policies, and permit requirements that need to be addressed as part of implementing any of the EIS alternatives that involves construction. Included is the method of compliance, which could be the assessment of a resource area in this EIS, obtaining a permit or approval from a county or local agency, or additional consultation with Federal or state agencies.

Table 5-1
Compliance with Applicable Laws, Policies, Plans, and Permit Requirements

Applicable Laws, Policies, Plans, and Permit Requirements	Method of Compliance
Federal	
National Environmental Policy Act	Addressed by this EIS
Endangered Species Act	Consultation with USFWS; Amendment to existing Biological Opinions, if appropriate
Migratory Bird Treaty Act	Addressed in EIS
Fish and Wildlife Coordination Act	Consultation with USFWS, Coordination Act Report, if appropriate
Executive Order 11990 – Protection of Wetlands	Addressed in EIS, CWA 404 permits
Clean Water Act	DA permit under Section 404 of CWA; Water quality certification under Section 401 of CWA
Safe Drinking Water Act	Ongoing reporting to CDPH
Clean Air Act	Addressed in EIS
Executive Order 12898 – Environmental Justice	Addressed in EIS
National Historic Preservation Act	Addressed in EIS; Consultation with SHPO

Key: CDPH = California Department of Public Health, CWA = Clean Water Act,
EIS = Environmental Impact Statement, NPDES = National Pollutant Discharge Elimination System,
SHPO = State Historic Preservation Office, USFWS = United States Fish and Wildlife Service

Table 5-1 Compliance with Applicable Laws, Policies, Plans, and Permit Requirements (continued)	
Applicable Laws, Policies, Plans, and Permit Requirements	**Method of Compliance**
Federal	
National Natural Landmarks	Addressed in EIS
Farmland Protection Policy Act	Addressed in EIS
Toxic Substances Control Act	Addressed in EIS
Resource Conservation and Recovery Act	Addressed in EIS
Comprehensive Environmental Response, Compensation, and Liability Act	Addressed in EIS
State	
California Endangered Species Act	Unknown
California Fish and Game Code	Addressed in EIS
Porter-Cologne Water Quality Control Act	Addressed in EIS, CWA 401 permits
California Department of Public Health Requirements	Ongoing reporting to CDPH
Senate Bill 901/Sacramento County General Plan Policy CO-20	Addressed in the EIS
California Clean Air Act	Addressed in EIS
California Air Resources Board and Ambient Air Quality Standards	Addressed in EIS
California Government Code- Environmental Justice	Addressed in EIS
California Public Resources Code- Historic and Cultural Resources	Addressed in EIS
Farmland Mapping and Monitoring Program	Addressed in EIS
Williamson Act	Addressed in EIS
Key: CDPH = California Department of Public Health, CWA = Clean Water Act, EIS = Environmental Impact Statement, NPDES = National Pollutant Discharge Elimination System, SHPO = State Historic Preservation Office, USFWS = United States Fish and Wildlife Service	

Table 5-1 Compliance with Applicable Laws, Policies, Plans, and Permit Requirements (continued)	
Applicable Laws, Policies, Plans, and Permit Requirements	**Method of Compliance**
Local	
Vernal Pool Recovery Plan	Consultation with USFWS, Amendment to existing Biological Opinions, if appropriate
South Sacramento Habitat Conservation Plan	Consultation with USFWS, Amendment to existing Biological Opinions, if appropriate
Rancho Cordova General Plan	Addressed in EIS
Zone 40 Water Supply Master Plan	Addressed in EIS
Project Level Water Supply Master Plan	Subdivision Map Approval
Water Forum Plan	Addressed in EIS
Regional Housing Needs Plan	Addressed in EIS
City of Rancho Cordova Transit Master Plan	Addressed in EIS
Mather Comprehensive Land Use Plan and Mather Airport Policy Area	Addressed in EIS
Fire Codes and Guidelines	Building Permit
Sacramento County Land Grading and Erosion Control Ordinance	NPDES Permit Compliance
Key: CDPH = California Department of Public Health, CWA = Clean Water Act, EIS = Environmental Impact Statement, NPDES = National Pollutant Discharge Elimination System, SHPO = State Historic Preservation Office, USFWS = United States Fish and Wildlife Service	

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6 CONSULTATION AND COORDINATION

6.1 PUBLIC INVOLVEMENT

This section describes the public involvement activities that have occurred during the development of this document.

6.2 PUBLIC SCOPING

On July 20, 2009, the USACE published a Notice of Intent (NOI) in the Federal Register to prepare an EIS for the Sunridge Properties. 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 on July 20, 2009, which included the same information found in the NOI. The public notice was sent to individuals who previously requested to be notified when public notices for actions in Sacramento County were available.

On July 30, the USACE held two public scoping meetings at the Rancho Cordova City Hall to solicit input on the preparation of the EIS. The meetings were held at 5:00 p.m. and 7:00 p.m. Comments were accepted during both scoping meetings and throughout the comment period, which ended on August 31, 2009. Four 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 E 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 and creeks; the protection of vernal pool grasslands and endangered species habitat; the scope of the cumulative impacts analysis; the project description; the vernal pool habitat mitigation; alternatives screening criteria and alternatives selection process; and floodplain management building requirements.

On July 2, 2010 the Draft EIS was distributed for public review and comment in accordance with NEPA and its implementing regulations (40 CFR Parts 1500 – 1508). Copies of the EIS were submitted to the USEPA and appropriate information repositories. A Notice of Availability to review and comment on the Draft EIS was issued for a 45-day public review period on July 2, 2010. On July 27, 2010, the USACE held public meetings on the Draft EIS.

During the public review period, which was extended to August 18, 2010, the USACE received eleven letters with comments. Public comments and responses to the Draft EIS were compiled and addressed in the Final EIS. A Notice of Availability of the Final EIS was published on October 15, 2010 in the Federal Register and local newspapers stipulating that it is available for a 30-day review, prior to the signing of a Record of Decision (ROD). The ROD is a written, public record explaining the reasons the USACE chose a particular course of action. The selected action and all mitigation measures will be identified in the ROD. No DA permit will be issued, reissued or revoked until the ROD is signed.

6.3 AGENCY COORDINATION

On July 2, 2009, the USACE requested the USEPA and USFWS cooperate in the preparation of the EIS. The USEPA and USFWS were asked to be cooperating agencies under NEPA for their expertise with

regard to aquatic resources and endangered species, respectively. The USEPA declined the role of cooperating agency on September 3, 2009. The USFWS did not respond to the USACE request. Although the agencies did not cooperate formally under NEPA, both the USEPA and USFWS provided input during preparation of this DEIS.

6.4 DOCUMENT AVAILABILITY

Until November 15, 2010, this FEIS will be posted on the USACE website found at:

http://www.spk.usace.army.mil/organizations/cespk-co/regulatory/index.html.

A hardcopy of this document will also be available to the public at the USACE address found below.

Comments on this document must be submitted within 30 days (by November 15, 2010). Comments shall be sent to:

Michael S. Jewell
Chief, Regulatory Division
US Army Corps of Engineers, Sacramento District
1325 J Street, Room 1480
Sacramento, CA 95814-2922

Any questions or comments concerning this document may be sent by e-mail or fax to:

E-mail: michael.s.jewell@usace.army.mil
Fax: (916) 557-6877

7 DOCUMENT PREPARERS AND REVIEWERS

7.1 PREPARERS

Table 7-1 presents the list of preparers for this EIS.

Table 7-1
Preparers

John Wondolleck, CDM Associate – EIS Technical Lead – Document Preparation and Review – 40 years of experience in management of multidisciplinary environmental programs, resource development and NEPA compliance	**Randy Marx, P.E.**, Brown and Caldwell Senior Associate - EIS Project Manager - Civil Engineer - 30 years of experience in management of multidisciplinary environmental programs, NEPA and regulatory compliance – Document Preparation and Review
Jennifer Jones, CDM Environmental Scientist – Biological Resources – Cumulative Effects – Compliance	**Carol Lazzarotto**, Brown and Caldwell Supervising Scientist – 18 years of experience in water resources, NEPA/CEQA, and environmental documentation – Document Preparation – Hydrology, Water Quality, Water Supply, Groundwater – Utilities and Public Services – Recreation – Cumulative Effects
Peggy Bloisa, CDM Environmental Scientist – Land Use – Population and Housing – Transportation – Cultural and History – Environmental Justice	**John Ayres, PG, CHG**, Brown and Caldwell Hydrogeologist – 8 years of experience in environmental compliance programs – Document Preparation – Noise – Geology and Soils
Wellington Yee, Brown and Caldwell Supervising Scientist – Hazardous, Toxic and Radioactive Wastes – Air Quality	**Chris Reichard,** Brown and Caldwell Natural Resource Specialist - USACE 404 Permitting Program - NEPA Specialist - Document peer review - Alternatives Development
Gina Veronese, CDM Environmental Planner – Socioeconomics – Environmental Setting	**John Clerici**, CirclePoint Public Participation Specialist – 17 years of experience in NEPA/CEQA and environmental project public involvement – Scoping Meeting Management

Table 7-1 Preparers (continued)	
Tina Cox, Brown and Caldwell Environmental Engineer – Visual Resources	**Lisa Sherman,** CDM Transportation Analyst - Traffic and Transportation
Daniel Hooper, Brown and Caldwell Senior Engineer – Climate Change	

7.2 REVIEWERS

Table 7-2 presents the list of USACE contributors for this EIS.

Table 7-2 Reviewers	
Michael Jewell Chief, Regulatory Division U.S. Army Corps of Engineers, Sacramento District	**Lisa Clay** Assistant District Counsel U.S. Army Corps of Engineers, Sacramento District
John Suazo Environmental Technical Lead U.S. Army Corps of Engineers, Sacramento District	**William Ness** Senior Project Manager U.S. Army Corps of Engineers, Sacramento District Regulatory Division

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