

June 2017

Panhandle Annexation and Planned Unit Development Project Environmental Impact Report

P16-013

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City of
SACRAMENTO



PREPARED FOR:
City of Sacramento and
the Sacramento Local Agency
Formation Commission

**Draft
Environmental Impact Report
For the
City of Sacramento
Panhandle Annexation and Planned Unit Development Project**

PREPARED FOR

City of Sacramento

and

Sacramento Local Agency Formation Commission

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ACRONYMS AND ABBREVIATIONS

°F	Degrees Fahrenheit
AB	Assembly Bill
AB 939	California Integrated Waste Management Act of 1989
ACBM	asbestos containing building materials
ADT	average daily traffic
ADWF	average dry weather flow
AE Zone	100-year flood hazard zone
AFVs	alternative fuel vehicles
afy	acre-feet per year
ANSI	American National Standards Institute
AQMP	air quality mitigation plan
ARP	American River Parkway
ASTM	American Society of Testing and Materials
Basin Plan	water quality control plan
BMP	best management practices
BMPs	best management practices
CAA	Clean Air Act
CAAA	Clean Air Act Amendments of 1990
CAAQS	California Ambient Air Quality Standards
CAFE	Corporate Average Fuel Economy
CalEEMod	California Emissions Estimator Model
Cal-EPA	California Environmental Protection Agency
CAL-OSHA	Department of Industrial Relations
Caltrans	California Department of Transportation
CAP	Climate Action Plan
CARB	California Air Resources Board
CBC	California Building Code
CCAA	California Clean Air Act
CCR	California Code of Regulations
CCTS	Central California Taxonomic System
CDFW	California Department of Fish and Wildlife
CDP	North Natomas Comprehensive Drainage Plan
CDP	Comprehensive Drainage Plan
CEC	California Energy Commission

CEQA	California Environmental Quality Act
CERCLA	Comprehensive Response Compensation and Liability Act
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
cfs	cubic feet per second
CGS	California Geological Survey
CHP	California Highway Patrol
CHRIS	California Historical Resources Information System
City	City of Sacramento
CNDDDB	California Natural Diversity Database
CNEL	Community Noise Equivalent Level
CNPS	California Native Plant Society
CNRA	California Natural Resources Agency
CO	carbon monoxide
CO ₂	carbon dioxide
CO ₂ e	CO ₂ -equivalent
CO ₂ e/year	carbon dioxide equivalent each year
County	Sacramento County
CPUC	California Public Utilities Commission
CSCGMP	Central Sacramento County Groundwater Management Plan
CTR	California Toxics Rule
CVFPP	Central Valley Flood Protection Plan
CWA	federal Clean Water Act
CWHR	California Wildlife Habitat Relationship
CWPP	Community Wildfire Protection Plan
dB	decibels
dBA	A-weighted decibels
dBA _{Leq}	average daytime noise levels
DEIR	Draft EIR
DOC	California Department of Conservation
DOT	Department of Transportation
DPR	Department of Parks and Recreation
DTSC	California Department of Toxic Substances Control
du/na	dwelling units per net acre
DWR	California Department of Water Resources
EAP	Energy Action Plan
EIA	U.S. Energy Information Administration

EIR	Environmental Impact Report
EMF	Electromagnetic Fields
EMFs	electromagnetic fields
EO	Executive Order
EPA	U.S. Environmental Protection Agency
EPAct	Energy Policy Act of 1992
ESA	Endangered Species Act
ESC	erosion and sediment control
FCC	Federal Communications Commission
FDA	Food and Drug Administration
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FIRM	Flood Insurance Rate Map
FMMP	Farmland Mapping and Monitoring Program
FPP	Farmland Protection Program
FPPA	Farmland Protection Policy Act
FTA	Federal Transit Administration
FWTP	Fairbairn Water Treatment Plant
GHG	greenhouse gas
GIS	geographic information system
GJUHSD	Grant Joint Union High School District
GMP	Groundwater Management Plan
HAER	Historic American Engineering Record
HAPs	hazardous air pollutants
HCM	Highway Capacity Manual
HOV	high occupancy vehicle
HWCL	Hazardous Waste Control Law
Hz	hertz
I-5	Interstate 5
I-80	Interstate 80
I-80	Interstate 80
IEEE	Institute of Electrical and Electronics Engineers, Inc.
IEPR	Integrated Energy Policy Report
IPAC	Information for Planning and Conservation
IPCC	Intergovernmental Panel on Climate Change
kV	kilovolt

LAFCo	Local Agency Formation Commission
L _{den}	Day-Evening-Night Level
LDL	Larson Davis Laboratories
L _{dn}	Day-Night Level
L _{eq}	Equivalent Continuous Sound Level
LESA	Land Evaluation and Site Assessment
LID	Low Impact Development
L _{max}	Maximum Sound Level
L _{min}	Minimum Sound Level
LOS	Level of Service
LSGAC	Local and State Government Advisory Committee
L _{xx}	Percentile-Exceeded Sound Level
MBI	Michael Baker International
MBTA	Migratory Bird Treaty Act
MCLs	maximum contaminant levels
Metro Fire	Sacramento Metropolitan Fire District
MLD	most likely descendant
mm/s	millimeters per second
MMT	million metric tons
mPa	micro-Pascals
mpg	miles per gallon
mph	miles per hour
MPOs	metropolitan planning organizations
msl	mean sea level
MT	metric tons
MTIP	Metropolitan Transportation Improvement Program
MTP	Metropolitan Transportation Plan
MTP/SCS	Metropolitan Transportation Plan/Sustainable Communities Strategy
MVCD	Sacramento-Yolo Mosquito and Vector Control District
N ₂ O	nitrous oxide
NAAQS	national ambient air quality standards
NAHC	Native American Heritage Commission
NAIP	National Agricultural Imagery Program
NBHCP	Natomas Basin Habitat Conservation Plan
NCIC	North Central Information Center
NCRPM	National Council on Radiation Protection and Measurements
NEMDC	Natomas East Main Drainage Canal

NFIP	National Flood Insurance Program
NFPD	Natomas Fire Protection District
NHTSA	National Highway Traffic Safety Administration
NIH	National Institutes of Health
NIOSH	National Institute for Occupational Safety and Health
NLIP	Natomas Levee Improvement Program
NMFS	National Marine Fisheries Service
NNCP	North Natomas Community Plan
NNFP	North Natomas Financing Plan
NO ₂	nitrogen dioxide
NOP	Notice of Preparation
NOP	Notice of Preparation
North Basin	North American Subbasin
NO _x	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
NTIA	National Telecommunications and Information Administration
NTR	National Toxics Rule
OAP	Ozone Attainment Plan
OCP	Operating Conservation Program
OES	State of California Office of Emergency Services
OPR	Office of Planning and Research
OS	Open Space
OSHA	Occupational Safety and Health Administration
PCBs	Polychlorinated Biphenyls
PCR	Public Resources Code
PD	Planned Development
PeMS	Performance Measurement System
PFFP	Public Facilities Financing Plan
PFFPD	Pacific Fruitridge Fire Protection District
PG&E	Pacific Gas and Electric Company
PM	particulate matter
Porter-Cologne Act	Porter-Cologne Water Quality Control Act of 1970
ppm	parts per million
PPV	peak particle velocity
PR	Parks and Recreation
PRC	Public Resources Code
project area or Panhandle PUD	Panhandle PUD project area

PSA	purveyor specific agreement
PUD	Planned Unit Development
RCRA	Resource Conservation and Recovery Act
RD	Reclamation District
RD1000	Reclamation District 1000
RF	radio frequency
RHNA	SACOG Regional Housing Needs Allocation
RLERPD	Rio Linda-Elverta Recreation and Parks District
RMP	Resource Management Plan
RMS	root-mean-square
ROG	reactive organic gases
RPS	renewable portfolio standard
RSD	Robla School District
RT	Regional Transit District
RTPD.	Regional Transit Police Department
RWQCB	Regional Water Quality Control Board
SACOG	Sacramento Council of Government's
SAF Plan	State Alternative Fuels Plan
SAFCA	Sacramento Area Flood Control Agency
SARA	Superfund Amendments and Reauthorization Act
SB	Senate Bill
SB 50	Senate Bill 50
SC	Suburban Center
SCAP	Sacramento County Area Plan
SCEMD	Sacramento County Environmental Management Department
SCMDP	Sacramento County Multi-Hazard Disaster Plan
SCS	Sustainable Communities Strategy
SCSD	Sacramento County Sheriff's Department
SEL	single-event impulsive noise level
SEMS	California Standardized Emergency Management System
SFD	Sacramento Fire Department
SGA	Sacramento Groundwater Authority
SGMA	Sustainable Groundwater Management Act of 2014
SIP	State implementation plan
SMAQMD	Sacramento Metropolitan Air Quality Management District
SMUD	Sacramento Municipal Utility District
SNLD	Suburban Neighborhood Low Density
SO ₂	sulfur dioxide

SOI	sphere of influence
SOV	single-occupant vehicle
SPD	Sacramento Police Department
SPL	sound pressure level
SPL	Sacramento Public Library
SPRD	Sacramento Parks and Recreation Department
SQIP	City of Sacramento Stormwater Quality Improvement Plan
SR 99	State Route 99
SR 99/70	State Route 99/State Route 70
SRCSD	Sacramento Regional County Sanitation District
SRWTP	Sacramento River Water Treatment Plant
SUVs	sport utility vehicles
SVAB	Sacramento Valley Air Basin
SWPPP	stormwater pollution prevention plan
SWRCB	State Water Resources Control Board
SWRCB-DDW	State Water Resources Control Board Division of Drinking Water
TAC	Technical Advisory Committee
TACs	toxic air contaminants
TDM	transportation demand management
TMDLs	total maximum daily loads
TNBC	The Natomas Basin Conservancy
TRB's	Transportation Research Board's
TRPD	Twin Rivers Unified School District Police Department
TRUSD	Twin Rivers Unified School District
TSCA	Toxic Substances Control Act
UAIC	United Auburn Indian Community of the Auburn Rancheria
UBC	Uniform Building Code
UCMP	University of California Museum of Paleontology
UFC	Uniform Fire Code
US EPA	United States Environmental Protection Agency
USACE	U.S. Army Corps of Engineers
USACOE	U.S. Army Corps of Engineers
USBR	U.S. Bureau of Reclamation
USC	U.S. Code
USDA	United States Department of Agriculture
USFS	U.S. Department of Agriculture, Forest Service
USFWS	United States Fish and Wildlife Service
UST	Underground Storage Tanks

VdB	vibration decibels
VMT	vehicle-miles travelled
WAPA	Western Area Power Administration
WEAP	Worker Environmental Awareness Program
WFA	Water Forum Agreement
WRCC	Western Regional Climate Center
WSA	water supply assessment

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1 INTRODUCTION

This section summarizes the purpose of the Environmental Impact Report (EIR) for the Panhandle Annexation and Planned Unit Development (PUD) Project; describes the environmental procedures that are to be followed according to the California Environmental Quality Act (CEQA); discusses the intended uses of the EIR and the project's relationship to the City of Sacramento General Plan Master EIR; describes the EIR's scope, organization, and impact terminology; and provides definitions of commonly used terms and acronyms utilized throughout this EIR.

1.1 PROJECT BACKGROUND

The original project was initiated by the City on September 12, 2000 through the adoption of Resolution 2000-734 that commenced City activities to annex the Northern and Southern Portions of the Panhandle area (1,424.7 acres) into the City. That project consisted of a PUD for the Northern Portion to allow for up to 3,075 dwelling units, 24.3 acres of commercial uses, and 108 acres of parks and open space. No development was proposed for the Southern Portion, which was largely built out. Entitlements requested for the original project included a Sacramento Local Agency Formation Commission (LAFCo) reorganization (annexation to the City and associated detachment from various service providers), City of Sacramento General Plan amendments, amendments to the North Natomas Community Plan (NNCP) and to the City of Sacramento Zoning Ordinance, pre-zoning/re-zoning, and other related agreements.

The City prepared and circulated a Draft EIR in 2006 and prepared a Final EIR in 2007. However, the EIR was not certified and the project was not approved. Subsequently, the U.S. Army Corps of Engineers (USACE) decertified the levee system protecting the Natomas Basin, and the Federal Emergency Management Agency (FEMA) remapped the Natomas Basin in 2008. The area was reclassified as within the 100-year flood hazard zone (AE Zone), and the City imposed a moratorium on new development in Natomas. Following FEMA redesignation, the Sacramento Area Flood Control Agency (SAFCA) and USACE began levee improvements in 2007. The basin is now mapped as Zone A99 (areas subject to inundation by a 1-percent-annual-chance flood event but that will ultimately be protected by completion of an under-construction federal flood protection system). In 2015, the City began processing applications for projects in the Natomas Area.

1.2 PROJECT DESCRIPTION OVERVIEW

The project consists of the annexation of 589.4 acres into the City, amendment of the 2035 General Plan, pre-zoning/rezoning of the project area, establishment of the Panhandle PUD, and approval of a tentative master parcel map. Approval of the project would result in a mixed-use development consisting of residential, commercial, elementary school, roadways, and park uses on 465.5 acres north of Del Paso Road. Table 3-1 provides a summary of the proposed land uses, general plan designations, and zoning. Exhibit 3-4 presents the proposed PUD.

The remaining 119 acres between the proposed PUD project area and extending north to West Elkhorn Boulevard (referred to herein as "Krumenacher Ranch") would be designated as Planned Development (PD) and zoned Agriculture (A). It is not included in the Panhandle PUD and no land use entitlements are being sought for this area.

While initially identified as part of the project in the Notice of Preparation, the Southern Portion of the original application (referred to as the "pan") is now not proposed for annexation as part of this project action.

The reader is referred to Chapter 3.0, Project Description, for a detailed description of the project.

1.3 PURPOSE OF THE EIR

The City of Sacramento (City), serving as the Lead Agency, has prepared this Draft EIR (DEIR) to provide the public, responsible and trustee agencies with information about the potential environmental effects of the Panhandle Annexation and PUD. As set forth in the provisions of CEQA, public agencies are charged with the duty to consider and minimize environmental impacts of proposed development where feasible, while carrying out an obligation to balance a variety of public objectives, including economic, environmental, and social factors.

CEQA Guidelines Section 15121(a) states that an EIR is an informational document for decision-makers and the public. It analyzes the significant environmental effects of a project, identifies possible ways to minimize significant effects, and describes reasonable alternatives to the project that could reduce or avoid its adverse environmental impacts. Public agencies with discretionary authority are required to consider the information in the EIR, along with any other relevant information, in making decisions on the project.

CEQA requires the preparation of an EIR prior to approving any project, which may have a significant effect on the environment. For the purposes of CEQA, the term "project" refers to the whole of an action, which has the potential for resulting in a direct physical change or a reasonably foreseeable indirect physical change in the environment (CEQA Guidelines Section 15378[a]). With respect to the Panhandle Annexation and PUD project, the City has determined that the proposed development is a "project" within the definition of CEQA.

1.4 TYPE OF DOCUMENT

The CEQA Guidelines identify several examples of types of EIRs that may be applicable to different project circumstances. This EIR has been prepared as a project level EIR pursuant to CEQA Guidelines Section 15161 for the Panhandle PUD. This type of analysis examines the environmental impacts of a specific development project. A project level EIR focuses primarily on the changes in the environment that would result from the development of the project, and examines all phases of the project including planning, construction, and operation.

As noted above, the Krumenacher Ranch portion of the project would be annexed to the City, designated as PD, and zoned A. It is not included in the Panhandle PUD and no land use entitlements are being sought for this area. However, because this area would be annexed to the City and could ultimately be developed in the future, the analysis in the EIR assumes that Krumenacher Ranch would be developed with residential uses and, thus, the Draft EIR programmatically evaluates the impacts of this development scenario.

1.5 UTILIZATION OF PREVIOUSLY PREPARED ENVIRONMENTAL DOCUMENTS

In part, this Draft EIR utilizes data and technical analysis and impact conclusions from the Master Draft and Final EIRs for the City of Sacramento 2035 General Plan Update (State Clearinghouse No. 2012122006). The Master Draft and Final EIR and all other referenced documents are available for public review and inspection at the City of Sacramento Community Development Department, Environmental Planning Services, 300 Richards Boulevard, Sacramento, California 95811.

1.6 EIR PROCESS

1.6.1 Notice of Preparation and Comments Received

A Notice of Preparation (NOP) for the Panhandle Annexation and PUD Project was released for a 30-day public review period on April 27, 2016 (see Appendix A for copy of the NOP and comments received). A public scoping meeting was held on May 9, 2016, following release of the NOP. The purpose of the NOP and public scoping meeting was to provide information describing the project and its potential environmental effects to those who may wish to comment regarding the scope and content of information to be included in the Draft EIR.

The following is a summary of the comments received on the NOP regarding the project and how they are addressed in the Draft EIR:

Table 1-1 Summary of NOP Comments Summary

Commenter	Summary of Issue	Location of Where it is Addressed in the EIR
Caltrans	Traffic impact analysis should include vehicle miles traveled (VMT) analysis for broad project traffic travel area.	Section 5.11, "Transportation and Circulation"
	Analysis should include any needed VMT-reducing mitigation that results from increased VMT from project on State highway system.	Section 5.11, "Transportation and Circulation"
California Highway Patrol	Project traffic will increase traffic and congestion on major Sacramento County freeways, and mitigation should be identified to address increased congestion, there will be inevitable increase of calls for service.	Section 5.10, "Public Services," and Section 5.11, "Transportation and Circulation"
	Mitigation should not be deferred to a subsequent phase of development.	Section 5.11, "Transportation and Circulation"
Regional Water Quality Control Board (Central Valley)	Draft EIR should evaluate impacts on surface water and groundwater quality.	Section 5.8, "Hydrology and Water Quality"
	Various permits, including construction stormwater, municipal storm sewer system (MS4), and Clean Water Act Sections 401 and 404 may be required.	Section 5.3, "Biological Resources," and Section 5.8, "Hydrology and Water Quality"
Native American Heritage Commission	Project requires compliance with SB 18 and AB 52 consultation and related requirements.	The City has initiated consultation under both SB 18 and AB 52. The results of consultation are provided in Section 5.4, "Archaeological, Historical, and Tribal Cultural Resources"
	Previously unknown resources may be discovered, and mitigation and monitoring program should include provisions for inadvertent discovery of resources and Native American remains.	Section 5.4, "Archaeological, Historical, and Tribal Cultural Resources"
Sacramento Municipal Utility District (SMUD)	The Draft EIR should identify nearby energy infrastructure and whether the project would impact these facilities as well as address the project's need for electrical service.	Section 5.14, "Energy"

Table 1-1 Summary of NOP Comments Summary

Commenter	Summary of Issue	Location of Where it is Addressed in the EIR
Reclamation District 1000	Project should be designed with a sufficient setback from toe of levee to allow for anticipated levee improvements for 200-year protection.	Section 5.8, "Hydrology and Water Quality"
	Setback area should only include public land uses with restrictions to ensure flood protection facilities not compromised.	Section 5.8, "Hydrology and Water Quality"
	Existing public roadway on top of East Levee Road should be relocated to landside of the levee, and only limited public improvements.	The portion of East Levee Road along the northeastern boundary of the project site is closed to public traffic and is not currently planned to be relocated.
	Drainage study is required to identify impacts on interior drainage system. Plan must be developed to mitigate impacts to the satisfaction of District. Development impact fee applies to the project.	Section 5.8, "Hydrology and Water Quality"
Sacramento Regional County Sanitation District	Project must complete a sewer study that identifies connection points, project phasing and evaluation of capacity.	Section 5.13, "Utilities"
Sacramento County, Department of Community Development	Consider the cumulative impacts of the proposed Natomas North Precinct Master Plan. The County also requests that the roadway segment analysis include Del Paso Road (Gateway Park Boulevard to Black Rock Drive) and the Elkhorn Boulevard and 16 th Street intersection in the traffic impact analysis. Comments on project internal roadway design were also provided.	Sections 5.1 through 5.14.
Valley View Acres Neighbors Working Together (letter dated April 30, 2016)	Concerns regarding the loss of a previous approved buffer area and associated uses along eastern boundary of project.	The City of Sacramento General Plan designates the entire site as "Planned Development" and current North Natomas Community Plan Policy NN.ERC 1.12 establishes open space provisions for the eastern portion of the project area. This is addressed in Chapter 4, "Land Use, Population, and Housing."
	Objection over the project design and its anticipated nuisance impacts on the Valley View Acres community.	Physical environmental impacts of the land use design on adjacent areas are addressed in Chapter 4, "Land Use, Population, and Housing;" Section 5.2, "Air Quality;" Section 5.7, "Hazards and Hazardous Materials;" Section 5.8, "Hydrology and Water Quality;" Section 5.9, "Noise;" Section 5.10, "Public Services;" Section 5.11, "Transportation and Circulation;" and Section 5.12, "Urban Design and Visual Resources."
	Concerns with project consistency with the Sacramento Council of Government's (SACOG) Metropolitan Transportation Plan/Sustainable Communities Strategy (MTP/SCS).	Chapter 4, "Land Use, Population, and Housing."
	Growth inducement impacts of the project and its relationship with the proposed Natomas North	Chapter 8, "Other CEQA Mandated Sections"

Table 1-1 Summary of NOP Comments Summary

Commenter	Summary of Issue	Location of Where it is Addressed in the EIR
	Precinct Master Plan.	
	Traffic and air quality impacts to Valley View Acres community.	Section 5.2, "Air Quality" and Section 5.11, "Transportation and Circulation."
	Drainage and groundwater impacts of the project on the project area.	Section 5.8, "Hydrology and Water Quality"
Valley View Acres Neighbors Working Together (letter dated June 10, 2016)	Requests that mitigation measures associated with public services include the identification of their costs and requirements for funding and implementation.	The project is required to provide a Finance Plan for facilities as provided under the North Natomas Community Plan policies NN.LU 1.2, 1.4, and 1.5. EIR mitigation measures will identify timing and implementation and the project applicant will be required to fund mitigation measure implementation.
	Address neighborhood and community incompatibility issues that cause physical impacts such as blight, crime, and deterioration of public safety.	Physical environmental impacts of the land use design on adjacent areas are addressed in Chapter 4, "Land Use, Population, and Housing;" Section 5.2, "Air Quality;" Section 5.7, "Hazards and Hazardous Materials;" Section 5.8, "Hydrology and Water Quality;" Section 5.9, "Noise;" Section 5.10, "Public Services;" Section 5.11, "Transportation and Circulation;" and Section 5.12, "Urban Design and Visual Resources."
	Address project water supply concerns regarding current and cumulative water needs.	Section 5.13, "Utilities"
	Project water quality impacts onto Steelhead Creek and the Sacramento River.	Section 5.8, "Hydrology and Water Quality"
	Flooding concerns regarding the project's proposed drainage system, levee stability, evacuation should a levee failure occur and local flooding issues with Del Paso Road.	Section 5.8, "Hydrology and Water Quality"
	Growth inducement and premature development associated with the project and conflicts with growth projections by SACOG.	Chapter 8, "Other CEQA Mandated Sections"
	Loss of agricultural and open space with the development of the project site.	Section 5.1, "Agricultural Resources," and Chapter 6, "Reorganization."
	Project site is an important habitat corridor for several species.	Section 5.3, "Biological Resources."
	Requests that a modified project design alternative be considered that includes modification of land use and roadway layout and the provision of an open space buffer.	Chapter 7.0, "Project Alternatives."
	Concerns regarding the project roadway design accommodates the proposed Natomas North Precinct Master Plan.	Chapter 8, "Other CEQA Mandated Sections"
Traffic operation and safety concerns regarding project roadway design and off-site roadway connections to Sorento Road.	Section 5.11, "Transportation and Circulation"	

Table 1-1 Summary of NOP Comments Summary

Commenter	Summary of Issue	Location of Where it is Addressed in the EIR
	Requests that the EIR address reasonably foreseeable projects such as Natomas North Precinct Master Plan, Valley View Acres proposed reinstatement of its rural estates General Plan and Community Plan designations.	Sections 5.1 through 5.14 (cumulative impact analyses).
	Concerns regarding project design and its anticipated nuisance impacts on the Valley View Acres community that cause physical impacts such as blight, crime, and deterioration of public safety.	Physical environmental impacts of the land use design on adjacent areas are addressed in Chapter 4, "Land Use, Population, and Housing;" Section 5.2, "Air Quality;" Section 5.7, "Hazards and Hazardous Materials;" Section 5.8, "Hydrology and Water Quality;" Section 5.9, "Noise;" Section 5.10, "Public Services;" Section 5.11, "Transportation and Circulation;" and Section 5.12, "Urban Design and Visual Resources."
	Project is inconsistent with Cortese/Knox/Hertzberg Act provisions regarding the creation of an unincorporated island.	Chapter 6, Reorganization.
Valley View Acres Community Association	Requests that development on the site east of the powerline corridor minimize potential negative impacts including crime, loitering, illegal trash dumping, traffic impacts, and nuisance complaints from future residents from agricultural activities.	Chapter 4, "Land Use, Population, and Housing;" Section 5.1, "Agricultural Resources;" and Section 5.10, "Public Services."
	Traffic impacts from new project roadway connections to Sorrento Road.	Section 5.11, "Transportation and Circulation."
	Requests that Sorrento Road be maintained as a rural roadway with no street lights, curb, gutter, and sidewalk.	The project proposes to limit roadway frontage improvements to the western side of the roadway only.
	Concerns regarding Twin Rivers Unified School District's plans for the East Natomas Education Complex and whether this school site would access Sorrento Road.	The East Natomas Education Complex would obtain access to the project's internal roadway system and not Sorrento Road.
	Provides comments on the project density near Sorrento Drive and requests lower density development along the Sorrento Drive as well as lot layouts.	Chapter 4, "Land Use, Population, and Housing."
	Supports the provision of infrastructure along Sorrento Road that could accommodate the future needs of Valley View Acres.	The project would utilize an 8-inch water distribution pipeline along Sorrento Road.
	Requests recreational trail connections along Sorrento Road.	Chapter 3, "Project Description."
	Identifies current drainage issues with the existing culvert located at the northeast corner of Sorrento Road and Del Paso Road and requests that the project address this problem.	Section 5.8, "Hydrology and Water Quality."
Friends of the Swainson's Hawk	Provides copies of comment letters on the original 2006 Draft EIR and 2007 Final EIR that	Chapter 3, "Project Description;" Section 5.1, "Agricultural Resources;" Section 5.3, "Biological

Table 1-1 Summary of NOP Comments Summary

Commenter	Summary of Issue	Location of Where it is Addressed in the EIR
	addressed concerns regarding flood hazards, loss of open space, project description details, agricultural land loss, alternatives analysis, biological resources analysis, and traffic impacts.	Resources;" Section 5.8, "Hydrology and Water Quality;" Section 5.9, "Noise;" Section 5.11, "Transportation and Circulation;" and Chapter 7, "Project Alternatives."
Environmental Council of Sacramento and Habitat 2020	Provides copies of comment letters on the original 2006 Draft EIR and 2007 Final EIR that addressed concerns regarding flood hazards, loss of open space, project description details, agricultural land loss, alternatives analysis, biological resources analysis, and traffic impacts.	Chapter 3, "Project Description;" Section 5.1, "Agricultural Resources;" Section 5.3, "Biological Resources;" Section 5.8, "Hydrology and Water Quality;" Section 5.9, "Noise;" Section 5.11, "Transportation and Circulation;" and Chapter 7, "Project Alternatives."
	Requests that the growth inducement impacts of new roadway connection between West Elkhorn Boulevard and Del Paso Road be addressed.	Chapter 8, "Other CEQA Mandated Sections"
Natomas North Precinct Landowners	Requests that the proposed Natomas North Precinct Master Plan be considered in the cumulative impact analysis, including the areas of traffic, noise, and hydrology.	Sections 5.1 through 5.14 (cumulative impact analyses).
	Requests that the traffic impact analysis consider the impacts on existing roadways, such as on Club Center Drive, Del Paso Road, West Elkhorn Drive, and Sorento Road). Details on the timing/circumstances for the extension of National Drive to West Elkhorn Boulevard needs to be provided. Transit options should be described.	Section 5.11, "Transportation and Circulation."
North Natomas Community Coalition	The EIR should consider the potential of providing a community center on the site and identify bicycle connectivity and park sites.	Chapter 3, "Project Description," identifies bicycle route connections internally and externally. The project does not propose a community center.
	Address impacts on public facilities that are financed by the existing North Natomas Finance Plan.	Section 5.10, "Public Services"
	The EIR should address the provision of fire and police services to existing neighborhoods.	Section 5.10, "Public Services"
	Address impacts for future powerline uses.	Chapter 3, "Project Description," identifies future SMUD powerline improvements in the project area, which are anticipated to be routed along Sorento Road.
	The EIR should address alternatives to provide public schools quickly, including moving the project into the Natomas Unified School District.	Section 5.10, "Public Services"
	Address existing drainage issues at the Sorento Road/Del Paso Road intersection.	Section 5.8, "Hydrology and Water Quality."
Sacramento Area Bicycle Advocates	Requests that the EIR describe all internal bikeway facilities in relation to the design of the roadway network as well as connections to bicycle facilities in the area	Chapter 3, "Project Description."

Table 1-1 Summary of NOP Comments Summary

Commenter	Summary of Issue	Location of Where it is Addressed in the EIR
Barbara Graichen	Traffic operational and safety concerns regarding project roadway connections to Sorento Road.	Section 5.11, "Transportation and Circulation."
Brigit Barnes representing RagingWire Data Centers	Identified confusion regarding what portion of the sphere of influence is planned for annexation.	Chapter 3, "Project Description." As noted in this section, the project only includes proposed annexation of the Panhandle PUD area.
	Address loss of open space and prime farmland.	Chapter 4, "Land Use, Population, and Housing," and Section 5.1, "Agricultural Resources."
	Traffic impacts, including impacts through the "pan" portion of the sphere of influence.	Section 5.11, "Transportation and Circulation"
	Compliance with AB 32 and recent published case law regarding greenhouse gases.	Section 5.6, "Greenhouse Gases and Climate Change."
	Address air quality impacts.	Section 5.2, "Air Quality."
	Address flooding impacts and the project's proposed detention facility.	Section 5.8, "Hydrology and Water Quality."
	Adequacy of wastewater service.	Section 5.13, "Utilities."
	Impacts to wetlands and riparian resources.	Section 5.3, Biological Resources.
	Inconsistencies with annexation plan.	Chapter 3, "Project Description." As noted in this section, the project only includes proposed annexation of the Panhandle PUD area.
David Lichman	Project design request for the provision of a buffer on the west side of Sorento Road to address land use compatibility.	Chapter 3, "Project Description," and Chapter 4, "Land Use, Population, and Housing."
	Project design request for no project roadway connections to Sorento Road, but bicycle, equestrian, pedestrian, and emergency access is acceptable.	Chapter 3, "Project Description," and 5.11, "Transportation and Circulation"

1.7 ORGANIZATION OF THE DRAFT EIR

The Draft EIR is organized into the following chapters:

Chapter 1 – Introduction: Provides an introduction and overview describing the intended use of the Draft EIR and the review and certification process, and the Notice of Preparation comment summary.

Chapter 2 - Executive Summary: Summarizes the elements of the project and the environmental impacts that could result from implementation of the project and provides a table which lists impacts, describes proposed mitigation measures, and indicates the level of significance of impacts after mitigation.

Chapter 3 - Project Description: Provides a detailed description of the project, including the project's location, background information, major objectives, and technical characteristics.

Chapter 4 - Land Use, Population, and Housing: Describes the existing land use setting for the project, including the project's relationship to adopted plans and policies.

Chapter 5 – Environmental Setting, Impacts, and Mitigation Measures: Provides an analysis to the potential impacts of buildout of the project on a range of environmental issues.

Chapter 6 – Reorganization: Provides a discussion regarding the potential impacts resulting from reorganization of the project area. Reorganization of the site would consist of annexation of the unincorporated portion of the project site to the City of Sacramento.

Chapter 7 - Project Alternatives: Describes the alternatives to the project and identifies the Environmentally Superior Alternative.

Chapter 8 – Other CEQA-Mandated Sections: Provides discussions required by CEQA regarding impacts that would result from the project, including a summary of cumulative impacts, potential growth-inducing impacts, and significant irreversible changes to the environment.

Chapter 9 – Report Preparers: Identifies City staff and consultants involved in the preparation of the Draft EIR.

Chapter 10 – References and Persons Consulted: Provides bibliographic information for all references and resources cited.

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2 EXECUTIVE SUMMARY

2.1 PROJECT DESCRIPTION

The Panhandle Reorganization (annexation and related detachments) and Planned Unit Development (PUD) project area is located within the North Natomas Community Plan (NNCP) planning area, which encompasses approximately 7,438 acres in the City of Sacramento (City) and 1,600 acres in unincorporated Sacramento County. The Panhandle PUD project area (referred to as “project area”) comprises approximately 590 acres in the City’s Sphere of Influence between West Elkhorn Boulevard on the north and Del Paso Road to the south. The project area is within the 2035 General Plan Update Policy Area.

A majority of the project’s land area is vacant. Built features on site include two existing home sites located near West Elkhorn Boulevard, high-voltage power lines consisting of two sets of steel lattice towers supporting double-circuit 230 kilovolt (kV) lines owned by the Western Area Power Administration and a 115-kV line owned by Sacramento Municipal Utility District within a 200-foot powerline easement, and the partially constructed East Natomas Education Complex (junior and senior high schools in the Twin Rivers Unified School District) that is not being utilized. Habitat conditions in the undeveloped areas include annual grasslands, pasture and wetland resources, and a few clusters of mature trees. The project area is designated Planned Development (PD) under the adopted City of Sacramento 2035 General Plan. The Sacramento County General Plan land use designation is Agricultural Cropland.

The project consists of the annexation of 589.4 acres into the City, amendment to the 2035 General Plan, pre-zoning/rezoning of the project area, establishment of the Panhandle PUD master parcel map, tax exchange agreement, development agreement, Mixed Income Housing Strategy, site plan and design review of the master parcel map. The approval of the project would result in the development of the private, mixed-use development consisting of residential, commercial, elementary school, roadways, and park uses north of Del Paso Road. The remaining 119 acres between the proposed PUD project area and extending north to West Elkhorn Boulevard (referred to herein as “Krumenacher Ranch”) would be designated as Planned Development (PD) and zoned Agriculture (A). No land use entitlements are being sought for this area.

While initially identified as part of the project in the Notice of Preparation, the southern portion of the original application (referred to as the “pan”) is not proposed for annexation as part of this project action.

The Draft EIR conservatively evaluates the development of up to 2,660 dwelling units to factor the eventual development of the Krumenacher Ranch and changes in market conditions that could be anticipated (e.g., potential residential development under Suburban Center consistent with City’s Planning and Development Code). The EIR also assumes that 101,277 square feet of commercial uses could be developed on the suburban center site.

2.2 AREAS OF CONTROVERSY AND ISSUES TO BE RESOLVED

Public agency, stakeholder, and public input has been solicited by the City since receipt of the current project application (see Chapter 3, “Project Description,” for a description of the history of proposed development applications for the project site). The following is a summary of areas of controversy associated with this project. The reader is referred to Chapter 1, Introduction, for a summary of comments received on the Notice of Preparation.

- ▲ traffic impacts of the project related to congestion, level of service operation, vehicle miles traveled, transit, bicycle and pedestrian usage, and traffic safety;

- ▲ surface and groundwater quality impacts of the project's construction and operation (including the proposed on-site detention basin);
- ▲ cultural resource impacts and ensuring compliance with required Native American consultation processes under Senate Bill 18 and Assembly Bill 52;
- ▲ potential conflicts with existing and planned improvements to energy infrastructure (e.g., existing overhead powerlines that bisect the project site);
- ▲ drainage impacts from new development of the project site on the existing drainage systems;
- ▲ adequacy of the capacity of the existing wastewater conveyance infrastructure to accommodate the project;
- ▲ consideration of the cumulative impacts of the project in combination with other reasonably foreseeable projects including the proposed Natomas North Precinct Master Plan;
- ▲ land use compatibility and buffering of the project with the adjoining Valley View Acres community to the east;
- ▲ nuisance impacts (e.g., noise, crime, and blight) of the development of the project on the Valley View Acres community;
- ▲ concerns regarding the project's consistency with the Sacramento Council of Government's Metropolitan Transportation Plan/Sustainable Communities Strategy;
- ▲ growth inducement impacts of the project including the facilitation of the development of the proposed Natomas North Precinct Master Plan;
- ▲ concerns on whether the mitigation measures will identify costs and requirements for funding;
- ▲ project impacts to existing drainage/flooding issues near the intersection of Del Paso Road and Sorento Road;
- ▲ loss of agricultural lands and open space with project development;
- ▲ impacts to on-site natural habitat and biological resources;
- ▲ concerns on whether the on-site East Natomas Education Complex would access Sorento Road;
- ▲ flooding hazards associated with required levee improvements;
- ▲ impacts to public facilities that are financed by the existing North Natomas Finance Plan;
- ▲ consideration of an appropriate range of alternatives in the EIR; and,
- ▲ greenhouse gas and air quality impacts.

Issues to be resolved as part of the review and processing of the project include, but are not limited to, the following:

- ▲ adequacy of utilities and public services to be provided by the City to adequately serve the project upon annexation;
- ▲ provision of a sufficient setback from the planned levee improvements and development; and
- ▲ consideration of the appropriateness of the proposed annexation and creation of an unincorporated island within the City.

2.3 OVERVIEW OF ENVIRONMENTAL IMPACTS

This Environmental Impact Report (EIR) has been pursuant to the California Environmental Quality Act (CEQA) (Public Resources Code [PRC] Section 21000 et seq.) and the State CEQA Guidelines (California Code of Regulations, Title 14, Chapter 3, Section 1500, et seq.) to evaluate the physical environmental effects of the project. The City is the lead agency for consideration of this EIR and proposed project approval, while the Sacramento Local Agency Formation Commission (LAFCo), a responsible agency under CEQA, would be required for approving the associated reorganizations of service provision as part of the annexation of the project area into the City boundaries. The City will use this document to make decisions based on its planning policies and statutory requirements. After receiving comments from the public and reviewing agencies on this Draft EIR, a Final EIR will be prepared that will include responses to comments received on the Draft EIR. If the decision is made to approve the project, a Notice of Determination will be published for compliance with CEQA.

Chapter 4, “Land Use, Population, and Housing,” and Sections 5.1 through 5.14 of this Draft EIR describe the potential environmental impacts of the project and recommend various mitigation measures to reduce impacts. Impacts are determined to be: 1) no impact; 2) less than significant (adverse or potentially adverse effects that are not substantial); 3) significant or potentially significant (substantial or potentially substantial adverse changes in the environment, for which mitigation measures are required); or 4) significant and unavoidable (substantial or potentially substantial adverse changes in the environment that cannot be feasibly reduced to a less-than-significant levels with mitigation measures). The cumulative impact discussions within Sections 5.1 through 5.14 determine whether the incremental effects of the project are significant when viewed in combination with the effects of past projects, other current projects, and probable future projects (as listed in Table 5-2). For the following environmental issue areas, all effects were found to either result in no impact or less-than-significant impacts.

- ▲ Land Use, Population, and Housing (Chapter 4)
- ▲ Agricultural Resources (Section 5.1)
- ▲ Utilities (Section 5.13)
- ▲ Energy (Section 5.14)
- ▲ Reorganization (Chapter 6)

For the following environmental issue areas, one or more environmental impacts were found to be potentially significant or significant; however, these impacts were reduced to a less-than-significant levels with mitigation.

- ▲ Biological Resources (Section 5.3)
- ▲ Archaeological, Historical, and Tribal Cultural Resources (Section 5.4)
- ▲ Geology, Soils, Mineral Resources, and Paleontology (Section 5.5)
- ▲ Greenhouse Gas Emissions and Climate Change (Section 5.6)
- ▲ Hazardous Materials and Hazards (Section 5.7)
- ▲ Hydrology and Water Quality (Section 5.8)
- ▲ Public Services and Recreation (Section 5.10)

For the following environmental issue areas, one or more impacts are considered significant and unavoidable; that is, no feasible mitigation is available to reduce the project’s impacts or the project’s contribution to cumulative impacts to a less-than-significant level.

Air Quality (Section 5.2)

- ▲ Impact 5.2-2: Operational air quality impacts
- ▲ Impact 5.2-7: Cumulative impacts to air quality

Noise and Vibration (Section 5.9)

- ▲ Impact 5.9-1: Construction noise impacts
- ▲ Impact 5.9-2: Traffic noise impacts
- ▲ Impact 5.9-5: Cumulative construction noise impacts
- ▲ Impact 5.9-6: Cumulative traffic noise impacts

Transportation and Circulation (Section 5.11)

- ▲ Impact 5.11-3: Roadway segment traffic operation impacts (with the exception of Elkhorn Boulevard)
- ▲ Impact 5.11-10: Cumulative roadway segment traffic operation impacts (with the exception of Elkhorn Boulevard)

Urban Design and Visual Resources (Section 5.12)

- ▲ Impact 5.12-1: Impacts to visual character of area
- ▲ Impact 5.12-3: Cumulative visual character impacts

Table 2-1 summarizes the potential environmental effects that would result from implementation of the project; describes mitigation measures to address significant and potentially significant environmental effects; and identifies the significance of impacts both before and after mitigation.

2.4 SUMMARY OF PROJECT ALTERNATIVES

State CEQA Guidelines Section 15126.6, as amended, mandates that all EIRs include a comparative evaluation of the project with alternatives to the project that are capable of attaining most of the project's basic objectives, but would avoid or substantially lessen any of the significant effects of the project. CEQA requires an evaluation of a "range of reasonable" alternatives, including the "no project" alternative. For a complete discussion of alternatives, see Chapter 7, "Project Alternatives."

Pursuant to Section 15126.6(c) of the State CEQA Guidelines, this Draft EIR includes a reasonable range of alternatives to the project that meet most of the objectives of the project and avoid or substantially lessen the identified likely environmental impacts. The following summary describes the alternatives to the project that are evaluated in this Draft EIR.

2.4.1 Alternative 1: No Project Alternative

Under the No Project Alternative, the proposed annexation would not take place, the Panhandle PUD project would not be built, and the project area would remain under Sacramento County's jurisdiction, the County General Plan land use designation would remain as Agricultural Cropland (see Exhibit 7-1). Under County zoning regulations only one residential unit could be constructed per vacant parcel in the project area (project would retain its zoning of Agriculture 80 acres), thereby resulting in the potential for a total of eight residential units in the project area (one existing [Krumenacher Ranch site] plus seven new residential units for each of the existing parcels). The East Natomas Education Complex site would be completed as approved under this alternative. The No Project Alternative would not meet any of the project objectives and would not be consistent with the City of Sacramento 2035 General Plan or North Natomas Community Plan land use policies. However, consistent with State CEQA Guidelines Section 15126.6(e), the No Project Alternative is nevertheless evaluated in this Draft EIR.

2.4.2 Alternative 2: Reduced Development Footprint Alternative

Under Alternative 2, Reduced Development Footprint Alternative, the project would result in the same amount of residential, commercial, school development as the project. The land plan would be modified to

designate the Krumenacher Ranch site and Panhandle PUD Village 14 as “Parks/Open Space” and would be zoned “Agriculture-Open Space” to ensure the long-term preservation of the current agricultural and open space condition of this area. The residential development potential these areas would be transferred to the southern portion of the project area (Panhandle PUD Villages 1 and 2) and these villages would be designated as “Suburban Neighborhood High Density” that would result in 1,138 dwelling units of multifamily development. All other aspects of the project’s land plan and roadway system design would remain the same (see Exhibit 7-2). Table 7-1 provides a summary of land uses under this alternative.

2.4.3 Alternative 3: Reduced Intensity Alternative

Under Alternative 3, Reduced Intensity Alternative, the residential development potential would be reduced by 1,606 dwelling units. The land plan would be modified to designate the Krumenacher Ranch site and Panhandle PUD Villages 6, 7, 13, and 14 as “Parks/Open Space” and would be zoned “Agriculture-Open Space” to ensure the long-term preservation of the current agricultural and open space condition of this area. The project roadway network would be modified to eliminate connection to Sorento Road. All other aspects of the project’s land plan and roadway system design would remain the same (see Exhibit 7-3). Table 7-2 provides a summary of land uses under this alternative.

2.4.4 Alternative 4: Complete Annexation of Sphere of Influence Alternative

Alternative 4: Complete Annexation of Sphere of Influence Alternative would expand the proposed annexation to include the southern area of the SOI (835.3 acres) for total annexation area of 1,424.7 acres. No development is proposed in the southern portion of the SOI as part of this alternative, and required City rezoning of the southern portion would retain existing Sacramento County adopted land uses (e.g., light industrial and commercial related uses). The annexation would involve the reorganization of public service and utility provisions and the detachment of the area from existing service districts for the SOI:

- ▲ detachment from Rio Linda-Elverta Recreation and Parks District (RLRPD) (parks and recreation services);
- ▲ detachment from Natomas Fire Protection District (fire protection and emergency services);
- ▲ detachment from Sacramento County Water Maintenance District Zone 41 (retail water services);
- ▲ detachment from Sacramento County Water Utility and Sacramento County Water Agency Zone 12 (drainage services in southern portion of SOI only);
- ▲ detachment from Sacramento County Water Agency Zone 13 (water supply and drainage services);
- ▲ detachment from Sacramento County Service Area No. 10 (transportation); and
- ▲ detachment from Sacramento County Service Area No. 1 (street lighting maintenance for southern portion of SOI only).

All other aspects of the project would remain the same as proposed.

2.5 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Table 2-1 summarizes the project impacts identified in each technical chapter in this Draft EIR. The level of significance for each impact, proposed mitigation measures to address significant impacts, and the resultant level of impact significance after implementation of the mitigation measure(s) are identified in the table.

Table 2-1 Summary of Impacts and Mitigation Measures

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
<p>5.1 Agricultural Resources</p>			
<p>Impact 5.1-1: Conversion of farmland to non-agricultural use Implementation of the project would result in the conversion of 354.1 acres of Farmland of Local Importance and 184.9 acres of Grazing Land from use as row crops and grazing to urban development. This conversion would not result in the loss of important farmland as defined in Public Resources Code Section 21060.1 and Appendix G of the CEQA Guidelines. Thus, this impact would be less than significant.</p>	LTS	None required.	LTS
<p>Impact 5.1-2: Compatibility with adjacent agricultural uses The project would not result in new urban land uses in an area adjacent to other active agricultural land that may impair adjacent agricultural activities. The impact would be less than significant.</p>	LTS	None required.	LTS
<p>Impact 5.1-3: Cumulative Loss of Agricultural Lands Implementation of the project in combination with potential development in the region would not contribute to the loss of Important Farmland as defined in Public Resources Code Section 21060.1 and Appendix G of the CEQA Guidelines. This contribution would be less than cumulatively considerable.</p>	LCC	None required.	LCC
<p>5.2 Air Quality</p>			
<p>Impact 5.2-1: Construction emissions of criteria air pollutants and ozone precursors Construction-related activities would result in project-generated emissions of ROG, NO_x, PM₁₀ and PM_{2.5} from site preparation (e.g., excavation, clearing), off-road equipment, material and equipment delivery trips, and worker commute trips, and other miscellaneous activities (e.g., building construction, asphalt paving, application of architectural coatings). Construction activities would result in mass emissions of NO_x that exceed SMAQMD's thresholds of 85 lb/day. Therefore, construction-generated emissions of NO_x could contribute to the existing nonattainment status of the SVAB for ozone. This impact would be significant.</p>	S	<p>Mitigation Measure 5.2-1: Construction exhaust and fugitive dust emissions controls All individual public and private subsequent projects within the project area shall implement SMAQMD's Basic Construction Emission Control Practices and SMAQMD's Enhanced Exhaust Control Practices during any construction or ground disturbance activities to reduce construction-related fugitive dust emissions, diesel PM, and NO_x emissions. These measures are included below. <u>Basic Construction Fugitive Dust Emissions Control Practices</u> <ul style="list-style-type: none"> ▲ Water all exposed surfaces two times daily. Exposed surfaces include, but are not limited to soil piles, graded areas, unpaved parking areas, staging areas, and access roads. ▲ Cover or maintain at least two feet of free board space on haul trucks transporting soil, sand, or other loose material on the site. Any haul trucks that would be traveling along freeways or major roadways should be covered. </p>	LTS

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Table 2-1 Summary of Impacts and Mitigation Measures

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
		<ul style="list-style-type: none"> ▲ Use wet power vacuum street sweepers to remove any visible trackout mud or dirt onto adjacent public roads at least once a day. Use of dry power sweeping is prohibited. ▲ Limit vehicle speeds on unpaved roads to 15 miles per hour (mph). ▲ All roadways, driveways, sidewalks, parking lots to be paved should be completed as soon as possible. In addition, building pads should be laid as soon as possible after grading unless seeding or soil binders are used. ▲ Minimize idling time either by shutting equipment off when not in use or reducing the time of idling to 5 minutes [required by California Code of Regulations, Title 13, sections 2449(d)(3) and 2485]. Provide clear signage that posts this requirement for workers at the entrances to the site. ▲ Maintain all construction equipment in proper working condition according to manufacturer’s specifications. The equipment must be checked by a certified mechanic and determined to be running in proper condition before it is operated. <p><u>Enhanced Exhaust Control Practices</u></p> <ul style="list-style-type: none"> ▲ The project developer shall submit to the City and SMAQMD a comprehensive inventory of all off-road construction equipment, equal to or greater than 50 horsepower, that will be used an aggregate of 40 or more hours during any portion of the construction project prior to any grading activities. The inventory shall include the horsepower rating, engine model year, and projected hours of use for each piece of equipment. The project developer shall provide the anticipated construction timeline including start date, and name and phone number of the project manager and on-site foreman. The information shall be submitted at least 4 business days prior to the use of subject heavy-duty off-road equipment. The inventory shall be updated and submitted monthly throughout the duration of the project, except that an inventory shall not be required for any 30-day period in which no construction activity occurs. ▲ Prior to any grading activities, the project developer shall provide a plan for approval by the City and SMAQMD demonstrating that the heavy-duty off-road vehicles (50 horsepower or more) to be used in the construction project, including owned, leased, and subcontractor vehicles, will achieve a project wide fleet-average 20-90 percent NO_x reduction (depending on available technology and engine Tier) and 45 percent particulate reduction compared to the most recent ARB fleet average. This plan shall be submitted in conjunction with the equipment inventory. Acceptable options for reducing emissions may include use of late model 	

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Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
		<p>engines, low-emission diesel products, alternative fuels, engine retrofit technology, after-treatment products, and/or other options as they become available.</p> <ul style="list-style-type: none"> ▲ The project developer shall ensure that emissions from all off-road diesel powered equipment used on the project area do not exceed 40 percent opacity for more than three minutes in any one hour. Any equipment found to exceed 40 percent opacity (or Ringelmann 2.0) shall be repaired immediately. Non-compliant equipment will be documented and a summary provided to the lead agency and SMAQMD monthly. A visual survey of all in-operation equipment shall be made at least weekly. A monthly summary of the visual survey shall not be required for any 30-day period in which no construction activity occurs. The monthly summary shall include the quantity and type of vehicles surveyed as well as the dates of each survey. ▲ If modeled construction-generated emissions of NO_x are not reduced to a level below SMAQMD's thresholds of significance by the application of Enhanced Exhaust Control Practices, then the project developer must pay a mitigation fee into SMAQMD's off-site mitigation program. By paying the appropriate off-site mitigation fee, construction-generated emissions of NO_x are reduced to a less-than-significant level. The fee calculation to offset daily NO_x emissions is based on the SMAQMD-determined cost to reduce one ton of NO_x (currently \$18,260 per ton but subject to change in future years). ▶ The fee calculation shall be based on the sum of emissions associated with all individual construction activities or phases occurring within the project area boundary at any one time during the buildout period. Payment schedules shall be negotiated between SMAQMD and the developer and based on finalized construction parameters prior to the issuance of any grading permit or groundbreaking activities. If, for instance, the construction contractor of one builder is constructing one village while the construction contractor of another builder is constructing another village the developer is responsible for determining the proportion of necessary combined offset fees that each builder must contribute. Once initial construction activities are finalized by the developer, quantification of construction-related emissions shall be verified. As each individual construction phase is finalized throughout the duration of the project buildout, the mitigation fee shall be calculated based on current information, available construction equipment, and proposed construction activities. As construction activities occur over the buildout period, the developer shall work with SMAQMD to continually update mitigation fees based on actual 	

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Table 2-1 Summary of Impacts and Mitigation Measures

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
		on-the-ground emissions. The final mitigation fees shall be based on contractor equipment inventories provided by the developer to SMAQMD and shall reconcile any fee discrepancies due to schedule adjustments, and increased or decreased equipment inventories. Equipment inventories and NO _x emission estimates for subsequent construction phases shall be coordinated with SMAQMD, and the off-site mitigation fee measure shall be assessed to any construction phase that would result in an exceedance of SMAQMD's mass emission threshold for NO _x .	
<p>Impact 5.2-2: Long-term operational emissions of air pollutants Implementation of the project would result in long-term operational emissions of ROG, NO_x, and PM₁₀ that exceed SMAQMD's thresholds of significance (65 lb/day for ROG, 65 lb/day for NO_x, 80 lb/day and 14.6 tons/year for PM₁₀). Therefore, operation-generated emissions could conflict with the air quality planning efforts and contribute substantially to the nonattainment status of Sacramento County with respect to ozone and PM₁₀. This impact would be significant.</p>	<p>S</p>	<p>Mitigation Measure 5.2-2: Implement provisions of the Air Quality Mitigation Plan to reduce operational emissions Implementation of the following measure requires compliance with the project's AQMP, which would reduce the project's operational ozone precursors by 35 percent in comparison to the unmitigated project.</p> <p>The final Panhandle PUD master parcel map shall include the following reduction measures, which are detailed within the AQMP (Appendix D of the Draft EIR), as conditions of approval:</p> <ul style="list-style-type: none"> ▲ Incorporate traffic calming measures <ul style="list-style-type: none"> ➤ Design project roads to reduce motor vehicle speed through the use of on street parking, planter strips, rumble strips, and other available methods. ➤ Reduce speeds at project intersections by including marked intersections, count-down signal timers, median islands, curb extensions, traffic circles, and other available methods ▲ Incorporate pedestrian network through <ul style="list-style-type: none"> ➤ Removal of pedestrian barriers ➤ Inclusion of sidewalks, a minimum of 5 feet wide, on all internal streets (with the exception of alleys if applicable) ➤ Inclusion of designated pedestrian routes to existing external pedestrian facilities and streets ▲ Incorporate walkable design elements by: <ul style="list-style-type: none"> ➤ providing connections to all roadways, bicycle paths, and pedestrian facilities touching the project boundaries ➤ providing at least 36 intersections per square mile 	<p>SU</p>

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Table 2-1 Summary of Impacts and Mitigation Measures

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
		<ul style="list-style-type: none"> ▲ Participate in permanent trip reduction program through membership in a transportation management association ▲ Participate in SMAQMD’s operational offset program for the purpose of reducing ROG, NOx, and PM emissions that would involve the funding of the replacement of existing wood-burning devices in the region. <p>In addition to the conditions of approval required by this mitigation measure, the following text shall also be included in the Panhandle PUD:</p> <p>“All amendments to the Panhandle PUD Guidelines with the potential to result in a change in ozone precursor emissions shall include an analysis which quantifies, to the extent practicable, the effect of the proposed Panhandle PUD Guidelines on ozone precursor emissions. The amendment shall not increase total ozone precursor emissions above what was considered in the AQMP for the entire project area and shall achieve the original 35 percent reduction in total overall project emissions. If the amendment would require a change in the AQMP to meet that requirement, then the proponent of the Panhandle PUD shall consult with SMAQMD on the revised analysis and shall prepare a revised AQMP for approval by the City, in consultation with SMAQMD.”</p>	
<p>Impact 5.2-3: Mobile-source CO concentrations Long-term operation-related local mobile-source emissions of CO generated by the development in the project area would not violate a standard or contribute substantially to an existing or projected air quality violation or expose sensitive receptors to substantial pollutant concentrations. As a result, this impact would be less than significant.</p>	LTS	None required.	LTS
<p>Impact 5.2-4: Exposure of sensitive receptors to TACs Construction-related emissions of TACs associated with land uses developed under the project would not result in an incremental increase in cancer risk greater than 10 in one million or a hazard index greater than 1.0 at existing or future sensitive receptors. However, new TAC sources associated with commercial development may expose existing or new receptors to TAC emissions. This impact would be significant.</p>	S	<p>Mitigation Measure 5.2-4: Incorporation of design features for retail center to address TACs. To reduce exposure of existing or future receptors to diesel PM exhaust emissions at commercial loading dock, the following design measures shall be incorporated into the Panhandle Planned Unit Development Guidelines.</p> <ul style="list-style-type: none"> ▲ Proposed commercial land uses that have the potential to emit TACs or host TAC-generating activity (e.g., loading docks) shall be located as far away from existing and proposed on-site sensitive receptors as possible such that they do not expose sensitive receptors to TAC emissions that exceed an incremental increase of 10 in 1 million for the cancer risk and/or a noncarcinogenic Hazard Index of 1.0. ▲ Loading dock design may incorporate the use of buildings or walls to shield commercial activity from nearby residences or other sensitive land uses. 	LTS

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Table 2-1 Summary of Impacts and Mitigation Measures

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
		<ul style="list-style-type: none"> ▲ Signs shall be posted at all loading docks and truck loading areas which indicate that diesel powered delivery trucks must be shut off when not in use for longer than 5 minutes on the premises to reduce idling emissions. ▲ Sensitive receptors, such as residential units and daycare centers, shall not be located in the same building as dry-cleaning operations that use perchloroethylene. Dry-cleaning operations that use perchloroethylene shall not be located within 300 feet of any sensitive receptor. A setback of 500 feet shall be provided for operations with two or more machines. 	
<p>Impact 5.2-5: Exposure of sensitive receptors to odors The project would introduce new odor sources into the area (e.g., temporary diesel exhaust emissions during construction and delivery trucks associated with commercial land uses). However, these odor sources would be temporary, intermittent, and dissipate rapidly from the source. Further, the project would not locate land uses near any existing odor sources. Receptors located near the proposed retail center may be exposed to odorous emissions depending upon the land uses developed. As a result, potential exposure of sensitive receptors to odors would be considered a significant impact.</p>	S	<p>Mitigation Measure 5.2-5: Incorporation of design features for retail center to address potential odor sources. The project developer shall implement the following measures to reduce exposure of sensitive receptors to odorous emissions. These measures shall be incorporated into the Panhandle Planned Unit Development Guidelines.</p> <ul style="list-style-type: none"> ▲ Land uses that have the potential to emit objectionable odorous emissions (e.g., dry cleaning establishments, and gasoline stations) shall be located as far away as possible from existing and proposed sensitive receptors or downwind of nearby receptors. ▲ If an odor-emitting facility is to occupy space in the retail area, odor control devices shall be installed to reduce the exposure of receptors to objectionable odorous emissions. SMAQMD shall be consulted to determine applicable/feasible control devices to be installed. Use of setbacks, site design considerations, and emission controls are typically sufficient to ensure that receptors located near retail uses would not be exposed to odorous emissions on a frequent basis. 	LTS
<p>Impact 5.2-6: Construction emissions of criteria air pollutants and precursors Project-generated construction emissions would exceed applicable cumulative thresholds for NOx only. Incorporated mitigation would reduce NOx to levels below SMAQMD cumulative thresholds. In addition, mitigation measures would further reduce dust and construction equipment exhaust emissions. Project mitigated construction-related emissions would not exceed applicable thresholds. Therefore, the project's contribution to cumulative construction emissions would not be cumulatively considerable.</p>	NCC	None required.	NCC
<p>Impact 5.2-7: Long-term operational emissions of criteria air pollutants and precursors Operation of the project would result in long-term increases in criteria air pollutants and ozone precursors from stationary, area, and mobile sources (i.e., VMT). Operational</p>	CC	None available.	CC SU

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Table 2-1 Summary of Impacts and Mitigation Measures

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
emissions would exceed SMAQMD thresholds of significance and therefore result in a cumulatively considerable contribution to regional air quality and may conflict with regional air quality planning efforts to improve air quality. All feasible mitigation has been incorporated into the project as described in the AQMP prepared for the project. However, given the uncertainty in the ability of mitigation to continue to reduce operational emissions into perpetuity, the project's contribution to this impact would be cumulatively considerable.			
<p>Impact 5.2-8: Mobile-source CO concentrations</p> <p>Short and long-term operation-related local mobile-source emissions of CO generated by the project would not violate a standard or contribute substantially to an existing or projected air quality violation or expose sensitive receptors to substantial pollutant concentrations under cumulative conditions. Therefore, the project's contribution to cumulative CO emissions would not be cumulatively considerable.</p>	NCC	None required.	NC
<p>Impact 5.2-9: Exposure of sensitive receptors to TACs</p> <p>Construction-related emissions of TACs associated with land uses developed under the project would not result in an incremental increase in cancer risk greater than 10 in one million or a hazard index greater than 1.0 at existing or future sensitive receptors. However, new TAC sources associated with commercial development may expose existing or new receptors to TAC emissions. TAC impacts are considered local as pollutant concentration dissipate rapidly from the source. Mitigation is proposed that would reduce the project's contribution to TAC emissions. Therefore, the project's contribution to cumulative TAC exposure impacts would not be cumulatively considerable.</p>	NCC	None required.	NCC
<p>Impact 5.2-10: Exposure of sensitive receptors to odors</p> <p>The project could introduce new odor sources into the area (e.g., temporary diesel exhaust emissions during construction and delivery trucks associated with commercial land uses). However, these odor sources would be temporary, intermittent, and dissipate rapidly from the source and would not combine with other odor sources. Receptors located near the proposed retail center may be exposed to odorous emissions but mitigation has been incorporated to offset this impact. Due to the local nature of odor sources and incorporation of mitigation to reduce odors from proposed development, the project's contribution to cumulative odor impacts would not be cumulatively considerable.</p>	NCC	None required.	NCC

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Table 2-1 Summary of Impacts and Mitigation Measures

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
<p>5.3 Biological Resources</p>			
<p>Impact 5.3-1: Loss of Annual Grassland and Agricultural Lands Implementation of the project would result in the loss of approximately 125 acres of annual grassland and 350 acres of agricultural lands. This impact would be less than significant.</p>	LTS	None required.	LTS
<p>Impact 5.3-2: Impacts to Special-Status Species Several special-status species are associated with vernal pool and annual grassland habitat in the project area. Development of the project area would result in removal of these habitats and, therefore, could result in loss of special-status species if they are present. Loss of special-status species would be a potentially significant impact.</p>	PS	<p>Mitigation Measure 5.3-2</p> <ol style="list-style-type: none"> Conduct Pre-Construction Surveys (Measure V.A.1 from NBHCP) Not less than 30 days or more than 6 months prior to commencement of construction activities on specific Authorized Development sites in the NBHCP area, a pre-construction survey of the site shall be conducted to determine the status and presence of, and likely impacts to, all Covered Species on the site. However, pre-construction surveys for an individual species may be completed up to one year in advance if the sole period for reliable detection of that species is between May 1 and December 31. The applicant seeking to develop land will be responsible for contracting with qualified biological consultants to carry out the pre-construction surveys, and as necessary, to implement specific take minimization, and other Conservation Measures set forth in the NBHCP and approved by the Wildlife Agencies. The results of the pre-construction surveys along with recommended take minimization measures shall be documented in a report and shall be submitted to the Land Use Agency, USFWS, CDFW, and TNBC. Based upon the survey results, the Land Use Permittees will identify applicable take avoidance and other site specific Conservation Measures, consistent with the NBHCP, required to be carried out on the site. The approved pre-construction survey documents and list of Conservation Measures will be submitted by the developer of the Authorized Development project to the applicable Land Use Agency to demonstrate compliance with the NBHCP. Reconnaissance level surveys should be conducted prior to species specific surveys to determine what habitats are present on a specific development site and what, if any, more intensive survey activities should be conducted to accurately determine the status of the Covered Species on the site. It shall be the obligation of the developer/landowner to complete such surveys and the Land Use Agency Permittees' responsibility to ensure the surveys are properly completed prior to disturbance of habitat. Surveys shall be conducted by qualified personnel (e.g., persons with suitable biological, botanical, or related expertise). Note: negative species-specific survey 	LTS

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Table 2-1 Summary of Impacts and Mitigation Measures

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
		<p>results generally do not obviate the requirement to implement minimization measures prescribed in the revised NBHCP where a pre-construction survey indicates that habitat for a particular listed species exists onsite.</p> <p>2. General Measures to Minimize Take of Vernal Pool Species (Measure V.A.4 from NBHCP)</p> <p>A. General Biological Survey and Information Required</p> <p>In the event a biological reconnaissance survey or the pre-construction survey identifies that vernal pool resources are on-site, a vernal pool species specific biological assessment must be provided by the developer to the Land Use Agency during the appropriate season (as established by USFWS) to determine the type and abundance of species present. The species specific biological assessment must address covered vernal pool plants (i.e., Sacramento Orcutt grass, slender Orcutt grass, Colusa grass, legenere, and Bogg’s lake hedge-hyssop), crustaceans (i.e., vernal pool tadpole shrimp, vernal pool fairy shrimp, and midvalley fairy shrimp), and amphibians (i.e., California tiger salamander and western spadefoot toad). The vernal pool plant survey must be a USFWS-approved plant survey prepared by a USFWS-approved qualified field biologist and shall list the methods of field analysis, condition of habitat, size and acreage of direct and indirect impact (as defined by seasonal inundation and hydric soils and other appropriate characteristics), and species present. The vernal pool crustacean species survey shall be in accordance with the USFWS Interim Survey Guidelines to Permittees for Recovery Permits under Section 10(a)(1)(A) of the Endangered Species Act for the Listed Vernal Pool Branchiopods (April 19, 1996) or the most recent approved USFWS survey guidelines for vernal pool species. This assessment must be submitted with the urban development permit application and prior to approval of an Urban Development Permit by the Land Use Agency.</p> <p>If it is determined that wetland and/or vernal pool resources would be disturbed by a project, then take of vernal pool associated Covered Species would be covered under the NBHCP, subject to the following limitation and guidelines:</p> <p>(1) Where site investigations indicate vernal pool species may occur, the developer shall notify the Land Use Agency regarding the potential for impacts to vernal pool species. Such notification shall include biological data (see Section A above regarding biological information required) adequate to</p>	

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Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
		<p>allow the Land Use Agency, and the USFWS and CDFW to determine the potential for impacts to vernal pool species resulting from the proposed development.</p> <p>(2) Following notification by the Land Use Agency, USFWS and CDFW shall identify specific measures required to avoid, minimize and mitigate impacts to vernal pool species to be implemented prior to disturbance and in accordance with adopted standards or established guidelines (e.g., the USFWS programmatic biological opinion for vernal pool species attached as Appendix G to the NBHCP as it may be amended from time to time). In some cases, USFWS and CDFW may require complete avoidance of vernal pool species, such as where Covered Species such as slender orcutt grass, Sacramento orcutt grass, Colusa grass and/or vernal pool tadpole shrimp are found to be present. Such measures shall be identified by USFWS and CDFW within 30 days or as soon as possible thereafter of notification and submittal of biological data to the agencies by the Land Use Agency.</p> <p>(3) The requirement by USFWS to preserve a vernal pool within development would be based on identification of an intact vernal pool with minimal disturbance where the presence of one or more of the following species is recorded: slender orcutt grass, Sacramento orcutt grass, Colusa grass, or vernal pool tadpole shrimp. Prior to requiring on-site preservation of a vernal pool area, USFWS shall consider the suitability of the vernal pool as TNBC Mitigation Lands. No such preservation requirement shall be made unless the vernal pool is a suitable site for The Natomas Basin Conservancy (TNBC) Mitigation Lands. Such vernal pool areas, including any required buffer land dedication, shall apply toward the Land Acquisition Fee component of the development project's NBHCP mitigation obligation.</p> <p>B. Mitigation Strategies Vernal pool resources (i.e., vernal pool fairy shrimp, vernal pool tadpole shrimp, midvalley fairy shrimp, Sacramento Orcutt grass, slender Orcutt grass, Colusa grass, legenera, and Bogg's Lake hedge-hyssop) identified through site specific investigations shall be mitigated in one of three general approaches as described below. Strategies to minimize and mitigate the take of the California tiger</p>	

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Table 2-1 Summary of Impacts and Mitigation Measures

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
		<p>salamander and western spadefoot toad shall be conducted according to Sections V.A.5 and V.B.4 of the NBHCP.</p> <p><i>Avoidance and Preservation On-Site as a Means to Minimize Impacts</i></p> <p>In the event USFWS requires on-site preservation in accordance with Section A.3 above, on-site mitigation shall be required. In the event USFWS does not require on-site mitigation, a developer or private land owner may still propose to dedicate fee title or conservation easement for that portion of the property with vernal pool resources and an associated 250-foot buffer surrounding the vernal pool resource to the TNBC. Acceptance of the offer to dedicate shall be subject to review and approval by the Land Use Agency, TNBC Board and the Wildlife Agencies. The TNBC Board and the Wildlife Agencies shall consider the location, connections, species present, condition of the proposed site to be dedicated, and may decide to accept the dedication in lieu of payment of the Land Acquisition Fee portion of the NBHCP Mitigation Fee for the affected acreage. TNBC Board may accept or decline the offer based on the balance of habitat needs and the biological goals of the HCP. If the dedication is accepted, a reduction in the Land Acquisition Fee portion of the habitat Mitigation Fee shall be granted the developer for the portion (calculated on an acreage basis) of the site permanently preserved by easement or dedication. However, habitat Mitigation Fees, in full, must be paid on the remaining developable acreage on the site, and all fees other than Land Acquisition Fees shall be paid for all acres on the site. Additional conditions to preserve the biological integrity of the site (such as reasonable drainage conditions) may be imposed by the Land Use Agency in consultation with TNBC and the Technical Advisory Committee (TAC).</p> <p>In the event the developer does not support on-site preservation or TNBC does not accept the offer to dedicate, then one of the following mitigation approaches shall be employed.</p> <p><i>Construction Period Avoidance and Relocation of Vernal Pool Resources</i></p> <p>Relocation of vernal pool resources and commencement of Authorized Development shall be subject to the following mitigation measures will be required:</p> <ul style="list-style-type: none"> ➤ No grading, development or modification of the vernal pool site or the buffer area extending 250 feet around the perimeter of the vernal pool site 	

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Table 2-1 Summary of Impacts and Mitigation Measures

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation												
		<p>may occur during the vernal pool “wet” season as identified by USFWS. Protective fencing shall be established around the perimeter of the vernal pool site and the buffer area during the vernal pool wet season.</p> <ul style="list-style-type: none"> In consultation with TNBC and the TAC, soils and cysts from the vernal pool may be relocated as soon as practicable during the dry season to a suitable TNBC or other reserve site provided the relocation/recreation site is approved by TNBC, and the USFWS. <p>If it is not practicable to relocate vernal pool resources, and/or TNBC or USFWS determine that TNBC does not have a suitable reserve site for relocation of resources, then the applicant shall follow the mitigation approach outlined below.</p> <p><i>Payment into USFWS-Approved Conservation Bank</i></p> <p>In the event all of the above approaches are not appropriate for the site, the Land Use Agency shall require the developer to purchase credits from a USFWS-approved mitigation bank in accordance with the standards set forth in the following Table 5.3-4. USFWS shall determine the type and amount of credits to be purchased based on the impacts associated with the development. Mitigation ratios for credits dedicated in USFWS-approved mitigation banks or for acres of habitat outside of mitigation banks shall be as follows:</p> <table border="1"> <thead> <tr> <th colspan="3">Table 5.3-4 Mitigation Ratios for Loss of Vernal Pool Habitat</th> </tr> <tr> <th>Mitigation Type</th> <th>Bank</th> <th>Non-Bank</th> </tr> </thead> <tbody> <tr> <td>Preservation</td> <td>2:1</td> <td>3:1</td> </tr> <tr> <td>Creation</td> <td>1:1</td> <td>2:1</td> </tr> </tbody> </table> <p>Preservation Component: For every acre of habitat directly or indirectly affected, at least two vernal pool credits will be dedicated within a USFWS-approved ecosystem preservation bank, or based on USFWS evaluation of site-specific conservation values, three acres of vernal pool habitat may be preserved on the project site or on another non-bank site as approved by USFWS.</p> <p>Creation Component: For every acre of habitat directly affected, at least one vernal pool creation credit will be dedicated within a USFWS-approved habitat mitigation bank, or based on USFWS evaluation of site-specific conservation values, two acres of vernal pool habitat created and monitored on the project site or on another non-bank site as approved by USFWS.</p>	Table 5.3-4 Mitigation Ratios for Loss of Vernal Pool Habitat			Mitigation Type	Bank	Non-Bank	Preservation	2:1	3:1	Creation	1:1	2:1	
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Table 2-1 Summary of Impacts and Mitigation Measures

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
		<p>3. Measures to Reduce Take of Individual Species</p> <p>A. Reduce Take of Vernal Pool Species</p> <p><i>Measures to Reduce Take on Boggs Lake Hedge-Hyssop, Sacramento Orcutt Grass, Slender Orcutt Grass, Colusa Grass, and Legenere (Measure V.A.5.p from NBHCP)</i></p> <p>(1) Prior to approval of an Urban Development Permit, the involved Land Use Agency shall require a pre-construction survey. If such survey determines Boggs Lake hedge-hyssop, Sacramento orcutt grass, Slender orcutt grass, Colusa grass, or legenere are present, the Land Use Agency shall require the developer to consult with USFWS to determine appropriate measures to avoid and minimize loss of individuals. If Authorized Development is proposed for areas containing vernal pools, the applicant will be required to complete additional review, permitting and mitigation as described under Section V.A.4 of NBHCP.</p> <p><i>Measures to Reduce Take of Dwarf Downingia, Ahart's Dwarf Rush, Red Bluff Dwarf Rush, Sanford's arrowhead, and Suisun marsh aster (Not Covered by NBHCP)</i></p> <p>(1) Prior to project initiation and during the blooming period for the special-status plant species with potential to occur in the project area, a qualified botanist will conduct protocol-level surveys for special-status plants in areas where potentially suitable habitat would be removed or disturbed by project activities.</p> <p>(2) If no special-status plants are found, the botanist shall document the findings in a letter report to the project developer and no further mitigation will be required.</p> <p>(3) If special-status plant species are found that cannot be avoided during construction, the project developer shall consult with CDFW and/or USFWS, as appropriate depending on species status, to determine the appropriate mitigation measures for direct and indirect impacts that could occur as a result of project construction and will implement the agreed-upon mitigation measures to achieve no net loss of occupied habitat or individuals. Mitigation measures may include preserving and enhancing existing populations, creation of offsite populations on project mitigation sites through seed collection or transplantation, and/or restoring or creating suitable habitat in sufficient quantities to achieve no net loss of occupied</p>	

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Table 2-1 Summary of Impacts and Mitigation Measures

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
		<p>habitat and/or individuals. A mitigation and monitoring plan shall be developed describing how unavoidable losses of special-status plants will be compensated.</p> <p>(4) If relocation efforts are part of the mitigation plan, the plan shall include details on the methods to be used, including collection, storage, propagation, receptor site preparation, installation, long-term protection and management, monitoring and reporting requirements, success criteria, and remedial action responsibilities should the initial effort fail to meet long-term monitoring requirements.</p> <p>(5) Success criteria for preserved and compensatory populations shall include:</p> <ul style="list-style-type: none"> ➤ The extent of occupied area and plant density (number of plants per unit area) in compensatory populations shall be equal to or greater than the affected occupied habitat. ➤ Compensatory and preserved populations shall be self-producing. Populations shall be considered self-producing when: (1) plants reestablish annually for a minimum of five years with no human intervention such as supplemental seeding; and (2) reestablished and preserved habitats contain an occupied area and flower density comparable to existing occupied habitat areas in similar habitat types in the project vicinity. <p>(6) If offsite mitigation includes dedication of conservation easements, purchase of mitigation credits, or other offsite conservation measures, the details of these measures shall be included in the mitigation plan, including information on responsible parties for long-term management, conservation easement holders, long-term management requirements, success criteria such as those listed above and other details, as appropriate to target the preservation of long term viable populations.</p> <p><i>Measures to Reduce Take of Vernal Pool Fairy Shrimp, Vernal Pool Tadpole Shrimp, and Midvalley Fairy Shrimp (Measure V.A.5.m from NBHCP)</i></p> <p>(1) Prior to approval of an Urban Development Permit, the involved Land Use Agency shall require a pre-construction survey. If such survey determine vernal pool fairy shrimp, vernal pool tadpole shrimp, and midvalley fairy shrimp are present, the Land Use Agency shall require the developer to</p>	

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Table 2-1 Summary of Impacts and Mitigation Measures

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
		<p>consult with USFWS to determine appropriate measures to avoid and minimize take of individuals. Procedures for reviewing projects that could affect vernal pools and vernal pool species are discussed under Section V.A.4 of NBHCP.</p> <p><i>Measures to Reduce Take on Western Spadefoot Toad (Measure V.A.5.1 from NBHCP)</i></p> <p>(1) Prior to approval of an Urban Development Permit, the involved Land Use Agency shall require a pre-construction survey. If such survey determines western spadefoot toad are present, the Land Use Agency shall require the developer to consult with CDFW and USFWS to determine appropriate measures to avoid and minimize take of individuals.</p> <p>B. Reduce Take of Giant Garter Snake (Measure V.A.5.a from NBHCP)</p> <p>(1) Within the Natomas Basin, all construction activity involving disturbance of habitat, such as site preparation and initial grading, is restricted to the period between May 1 and September 30. This is the active period for the giant garter snake and direct mortality is lessened, because snakes are expected to actively move and avoid danger.</p> <p>(2) Pre-construction surveys for giant garter snake, as well as other NBHCP Covered Species, must be completed for all development projects by a qualified biologist approved by USFWS. If any giant garter snake habitat is found within a specific site, the following additional measures shall be implemented to minimize disturbance of habitat and harassment of giant garter snake, unless such project is specifically exempted by USFWS.</p> <p>(3) Between April 15 and September 30, all irrigation ditches, canals, or other aquatic habitat should be completely dewatered, with no puddled water remaining, for at least 15 consecutive days prior to the excavation or filling in of the dewatered habitat. Make sure dewatered habitat does not continue to support giant garter snake prey, which could detain or attract snakes into the area. If a site cannot be completely dewatered, netting and salvage of prey items may be necessary. This measure removes aquatic habitat component and allows giant garter snake to leave on their own.</p> <p>(4) For sites that contain giant garter snake habitat, no more than 24-hours prior to start of construction activities (site preparation and/or grading), the project area shall be surveyed for the presence of giant garter snake. If</p>	

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Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
		<p>construction activities stop on the project site for a period of two weeks or more, a new giant garter snake survey shall be completed no more than 24-hours prior to the re-start of construction activities.</p> <p>(5) Confine clearing to the minimal area necessary to facilitate construction activities. Flag and designate avoided giant garter snake habitat within or adjacent to the project as Environmentally Sensitive Areas. This area shall be avoided by all construction personnel.</p> <p>(6) Construction personnel completing site preparation and grading operations shall receive USFWS approved environmental awareness training. This training instructs workers on how to identify giant garter snakes and their habitats, and what to do if a giant garter snake is encountered during construction activities. During this training an on-site biological monitor shall be designated.</p> <p>(7) If a live giant garter snake is found during construction activities, immediately notify the USFWS and the project's biological monitor. The biological monitor, or his/her assignee, shall do the following: Stop construction in the vicinity of the snake. Monitor the snake and allow the snake to leave on its own. The monitor shall remain in the area for the remainder of the work day to make sure the snake is not harmed or if it leaves the site, does not return. Escape routes for giant garter snake should be determined in advance of construction and snakes should always be allowed to leave on their own. If a giant garter snake does not leave on its own within 1 working day, further consultation with USFWS is required.</p> <p>(8) Upon locating dead, injured or sick threatened or endangered wildlife species, the Permittees or their designated agents must notify within 1 working day USFWS Division of Law Enforcement (2800 Cottage Way, Sacramento CA 95825) or the Sacramento Fish and Wildlife Office (2800 Cottage Way, Room W2605, Sacramento, CA 95825, telephone 916 414-6600). Written notification to both offices must be made within 3 calendar days and must include the date, time, and location of the finding of a specimen and any other pertinent information.</p> <p>(9) Fill or construction debris may be used by giant garter snake as an over-wintering site. Therefore, upon completion of construction activities remove</p>	

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Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
		<p>any temporary fill and/or construction debris from the site. If this material is situated near undisturbed giant garter snake habitat and it is to be removed between October 1 and April 30, it shall be inspected by a qualified biologist to assure that giant garter snake are not using it as hibernaculae.</p> <p>(10) No plastic, monofilament, jute, or similar erosion control matting that could entangle snakes will be placed on a project site when working within 200 feet of snake aquatic or rice habitat. Possible substitutions include coconut coir matting, tactified hydroseeding compounds, or other material approved by the Wildlife Agencies.</p> <p>(11) Fences shall be constructed along the shared boundary of urban development and the North Drainage Canal and the East Drainage Canal within Sutter’s Permit Area, subject to the following guidelines: (a) A minimum of 100 feet shall be provided from fence-to-fence and access to the canals shall be limited by gates. (b) A snake deterrent shall be placed along the fences on the North Drainage Canal and the East Drainage Canal (i.e., fence construction that restricts snake movement or an appropriate vegetative barrier either inside or outside of the boundary fence). The design of the deterrent shall be subject to approval by the Wildlife Agencies. (c) The specific fence/snake barrier design adjacent to a given development shall be determined within Sutter County’s review of the proposed development and the fence/barrier shall be installed immediately after site grading is completed.</p> <p>(12) At the time of urban development along the North and East Drainage Canals, project developer shall consult with the Wildlife Agencies to determine design strategies that would enhance conditions for giant garter snake movement through the North and East Drainage Canals. Possible strategies may include expanded buffer areas and modified canal cross sections if such measures are, in the determination of Sutter and the Water Agencies, found to be feasible.</p> <p>C. Measures to Reduce Take on Northwestern Pond Turtle (Measure V.A.5.j from NBHCP)</p> <p>(1) Take of the northwestern pond turtle as a result of habitat destruction during construction activities, including the removal of irrigation ditches and drains,</p>	

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Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
		<p>and during ditch and drain maintenance, shall be minimized by the dewatering requirement described for giant garter snake.</p> <p>D. Measures to Reduce Take of Swainson’s Hawk (Measure V.A.5.b from NBHCP)</p> <p><i>Measures to Reduce Cumulative Impacts to Foraging Habitat</i></p> <p>(1) To maintain and promote Swainson’s hawk habitat values, Sutter County shall not obtain coverage under the NBHCP and incidental take permits, nor shall Sutter County grant Urban Development Permit approvals, for development on land within the one-mile wide Swainson’s Hawk Zone adjacent to the Sacramento River. The City of Sacramento has limited its Permit Area within the Swainson’s Hawk Zone to the approximately 252 acres located within the North Natomas Community Plan that was designated for urban development in 1994 and, likewise, shall not grant development approvals within the Swainson’s Hawk Zone beyond this designated 252 acres. It should be noted that of these 252 acres of land in the Swainson’s Hawk Zone, about 80 acres shall be a 250 foot wide agricultural buffer along the City’s side of Fisherman’s Lake. Should either the City or the County seek to expand NBHCP coverage for development within the Swainson’s Hawk Zone beyond that described above, granting of such coverage would require an amendment to the NBHCP and permits and would be subject to review and approval by the USFWS and the CDFW in accordance with all applicable statutory and regulatory requirements. Because the effectiveness of the NBHCP’s Operating Conservation Program (OCP) adequately minimizes and mitigates the effects of take of the Swainson’s hawk depends substantially on the exclusion of future urban development from the City’s and Sutter County’s portion of the Swainson’s Hawk Zone, approval by the City of future urban development (i.e., uses not consistent with Agricultural Zoning) in the zone beyond the 170 (252 acres minus 80) acres identified above or approval by Sutter of any future urban development in the Swainson’s Hawk Zone would constitute a significant departure from the Plan’s OCP and would trigger a reevaluation of the City’s and/or Sutter’s Permits and possible suspension or revocation of the City’s and/or County’s permits.</p> <p><i>Measures to Reduce Nest Disturbance</i></p>	

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Table 2-1 Summary of Impacts and Mitigation Measures

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
		<ul style="list-style-type: none"> (1) Prior to the commencement of development activities at any development site within the NBHCP area, a pre-construction survey shall be completed by the respective developer to determine whether any Swainson's hawk nest trees shall be removed on-site, or active Swainson's hawk nest sites occur on or within ½ mile of the development site. These surveys shall be conducted according to the Swainson's Hawk Technical Advisory Committee's (May 31, 2000) methodology or updated methodologies, as approved by USFWS and CDFW, using experienced Swainson's hawk surveyors. (2) If breeding Swainson's hawks (i.e., exhibiting nest building or nesting behavior) are identified, no new disturbances (e.g., heavy equipment operation associated with construction) shall occur within ½ mile of an active nest between March 15 and September 15, or until a qualified biologist, with concurrence by CDFW, has determined that young have fledged or that the nest is no longer occupied. If the active nest site is located within one-fourth mile of existing urban development, the no new disturbance zone can be limited to the one fourth mile versus one-half mile. Routine disturbances such as agricultural activities, commuter traffic, and routine facility maintenance activities within one-half mile of an active nest are not restricted. (3) Where disturbance of a Swainson's hawk nest cannot be avoided, such disturbance shall be temporarily avoided (i.e., defer construction activities until after the nesting season) and then, if unavoidable, the nest tree may be destroyed during the non-nesting season. For purposes of this provision the Swainson's hawk nesting season is defined as March 15 to September 15. If a nest tree (any tree that has an active nest in the year the impact is to occur) must be removed, tree removal shall only occur between September 15 and February 1. (4) If a Swainson's hawk nest tree is to be removed and fledglings are present, the tree may not be removed until September 15 or until CDFW has determined that the young have fledged and are no longer dependent upon the nest tree. 	

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Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
		<p>(5) If construction or other project related activities which may cause nest abandonment or forced fledgling are proposed within the one-fourth mile buffer zone, intensive monitoring (funded by the project sponsor) by a CDFW-approved raptor biologist shall be required. Exact implementation of this measure shall be based on specific information at the project site.</p> <p><i>Measures to Prevent the Loss of Nest Trees</i></p> <p>(1) Valley oaks, tree groves, riparian habitat and other large trees shall be preserved wherever possible. The City and Sutter County shall preserve and restore stands of riparian trees used by Swainson’s hawks and other animals, particularly near Fisherman’s Lake and elsewhere in the Plan Area where large oak groves, tree groves and riparian habitat have been identified in the Plan Area.</p> <p>(2) The raptor nesting season shall be avoided when scheduling construction near nests in accordance with applicable guidelines published by the Wildlife Agencies or through consultation with the Wildlife Agencies.</p> <p>(3) Annually, prior to the Swainson’s hawk nesting season (March 15 to September 15) and until buildout of their Authorized Development has occurred, the City of Sacramento and Sutter County shall notify each landowner of any property within the permit area(s) on which a Swainson’s hawk nest tree is present, and shall identify the nest tree, and alert the owner to the specific mitigation measures prohibiting the owner from removing the nest tree.</p> <p><i>Measures to Mitigate the Loss of Swainson’s Hawk Nest Trees</i></p> <p>(1) The NBHCP shall require 15 trees (5-gallon container size) to be planted within the habitat reserves for every Swainson’s hawk nesting tree anticipated to be impacted by Authorized Development. It shall be the responsibility of each Land Use Agency approving development that shall impact Swainson’s hawk nest trees to provide funding from the applicable developer for purchase, planting, maintenance and monitoring of trees at the time of approval of each Authorized Development project. TNBC shall determine the appropriate cost for planting, maintenance and monitoring of trees.</p>	

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Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
		<p>(2) The Land Use Agency Permittee approving a project that impacts an existing Swainson’s hawk nest tree shall provide funding sufficient for monitoring survival success of trees for a period of 5 years. For every tree lost during this time period, a replacement tree must be planted immediately upon the detection of failure. Trees planted to replace trees lost shall be monitored for an additional 5-year period to ensure survival until the end of the monitoring period. A 100 percent success rate shall be achieved. All necessary planting requirements and maintenance (i.e., fertilizing, irrigation) to ensure success shall be provided. Trees must be irrigated for a minimum of the first 5 years after planting, and then gradually weaned off the irrigation in an approximate 2-year period. If larger stock is planted, the number of years of irrigation must be increased accordingly. In addition, 10 years after planting, a survey of the trees shall be completed to assure 100 percent establishment success. Remediation of any dead trees shall include completion of the survival and establishment process described.</p> <p>(3) Of the replacement trees planted, a variety of native tree species shall be planted to provide trees with differing growth rates, maturation, and life span. This shall ensure that nesting habitat shall be available quickly (5-10 years in the case of cottonwoods and willows), and in the long term (i.e., valley oaks, black walnut and sycamores), and minimize the temporal losses from impacts to trees within areas scheduled for development within the 50-year permit life. Trees shall be sited on reserves in proximity to hawk foraging areas. Trees planted shall be planted in clumps of three trees each. Planting stock shall be a minimum of 5-gallon container stock for oak and walnut species.</p> <p>(4) To reduce temporal impacts resulting from the loss of mature nest trees, mitigation planting shall occur within 14 months of approval of the NBHCP and ITP’s. It is estimated at this time that 4 nesting trees within the City of Sacramento are most likely to be impacted by Authorized Development in the near term. Therefore, to reduce temporal impacts, the City of Sacramento will advance funding for 60 sapling trees of diverse, suitable species (different growing rates) to TNBC within the above referenced 14 months. It is anticipated that the City will recover costs of replacement nest</p>	

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Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
		<p>trees as an additional cost to be paid by private developers at the time of approval of their development projects that impact mature nest trees.</p> <p>(5) For each additional nesting tree removed by Land Use Agencies' Covered Activities, the Land Use Agency shall fund and provide for the planting of 15 native sapling trees of suitable species with differing growth rates at suitable locations on TNBC preserves. Funding for such plantings shall be provided by the applicable Permittee within 30 days of approving a Covered Activity that will impact a Swainson's hawk nesting tree.</p> <p>E. Measures to Reduce Loss of White-tailed Kite and Other Nesting Raptors (Not Covered by NBHCP)</p> <p>(1) If removal of a known nest tree is required, it shall be removed when no active nests are present, generally between September and February.</p> <p>(2) If project activity would commence between February 1 and August 31, a qualified biologist shall be retained to conduct preconstruction surveys for active nests in suitable habitat on and within 500 feet of the project site no more than 14 days and no less than seven days before commencement of project-related ground disturbance or vegetation removal activities. If this survey does not identify any nesting raptors in the area within the project site that would be disturbed, no further mitigation would be required.</p> <p>(3) If an occupied nest is present, a 500-foot no-disturbance buffer shall be established around the nest. The size of the buffer may be adjusted based upon observed behavior of the nesting birds. If construction activities cause the nesting bird to vocalize, make defensive flights at intruders, get up from a brooding position, or fly off the nest, then the protective buffer shall be increased such that activities are far enough from the nest that the birds no longer demonstrate agitated behavior. The exclusionary buffer shall remain in place until the chicks have fledged or as otherwise determined by a qualified biologist. No project activity shall commence within the buffer area until a qualified biologist confirms that the nest is no longer active or that the young have fully fledged. Monitoring of the nest by a qualified biologist shall be required if the activity has potential to adversely affect the nest.</p> <p>F. Measures to Reduce Take of Burrowing Owl (Measure V.A.5.h from NBHCP)</p>	

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Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
		<p>(1) Prior to the initiation of grading or earth disturbing activities, the applicant/developer shall hire a CDFW-approved qualified biologist to perform a pre-construction survey of the site to determine if any burrowing owls are using the site for foraging or nesting. The pre-construction survey shall be submitted to the Land Use Agency with jurisdiction over the site prior to the developer's commencement of construction activities and a mitigation program shall be developed and agreed to by the Land Use Agency and developer prior to initiation of any physical disturbance on the site.</p> <p>(2) Occupied burrows shall not be disturbed during nesting season (February 1 through August 31) unless a qualified biologist approved by the CDFW verifies through non-invasive measures that either: 1) the birds have not begun egg-laying and incubation; or 2) that juveniles from the occupied burrows are foraging independently and are capable of independent survival.</p> <p>(3) If nest sites are found, the USFWS and CDFW shall be contacted regarding suitable mitigation measures, which may include a 300 foot buffer from the nest site during the breeding season (February 1 - August 31), or a relocation effort for the burrowing owls if the birds have not begun egg-laying and incubation or the juveniles from the occupied burrows are foraging independently and are capable of independent survival. If on-site avoidance is required, the location of the buffer zone shall be determined by a qualified biologist. The developer shall mark the limit of the buffer zone with yellow caution tape, stakes, or temporary fencing. The buffer shall be maintained throughout the construction period.</p> <p>(4) If relocation of the owls is approved for the site by USFWS and CDFW, the developer shall hire a qualified biologist to prepare a plan for relocating the owls to a suitable site. The relocation plan must include: (a) the location of the nest and owls proposed for relocation; (b) the location of the proposed relocation site; (c) the number of owls involved and the time of year when the relocation is proposed to take place; (d) the name and credentials of the biologist who will be retained to supervise the relocation; (e) the proposed method of capture and transport for the owls to the new site; (f) a description of the site preparations at the relocation site (e.g., enhancement</p>	

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Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
		<p>of existing burrows, creation of artificial burrows, one-time or long-term vegetation control, etc.); and (g) a description of efforts and funding support proposed to monitor the relocation. Relocation options may include passive relocation to another area of the site not subject to disturbance through one way doors on burrow openings, or construction of artificial burrows in accordance with CDFG’s March 7, 2012 Staff Report on Burrowing Owl Mitigation.</p> <p>(5) Where on-site avoidance is not possible, disturbance and/or destruction of burrows shall be offset through development of suitable habitat on TNBC upland reserves. Such habitat shall include creation of new burrows with adequate foraging area (a minimum of 6.5 acres) or 300 feet radii around the newly created burrows. Additional habitat design and mitigation measures are described in CDFG’s March 7, 2012 Staff Report on Burrowing Owl Mitigation.</p> <p>G. Measures to Reduce Take on Loggerhead Shrike (Measure V.A.5.g from NBHCP)</p> <p>(1) Prior to approval of Urban Development Permit, the involved Land Use Agency shall require a pre-construction survey.</p> <p>(2) If surveys identify an active loggerhead shrike nest that will be impacted by Authorized Development, the developer shall install brightly colored construction fencing that establishes a boundary 100 feet from the active nest. No disturbance associated with Authorized Development shall occur within the 100-foot fenced area during the nesting season of March 1 through July 31. A qualified biologist, with concurrence of USFWS must determine young have fledged or that the nest is no longer occupied prior to disturbance of the nest site.</p>	
<p>Impact 5.3-3: Loss of Wetlands or Waters Implementation of the project would result in fill of wetlands or other waters. This would be a significant impact.</p>	<p>S</p>	<p>Mitigation Measure 5.3-3 No Net Loss of Wetlands Prior to ground-disturbing activity, the project developer shall submit a wetland delineation report to USACE for verification. For portions of the project area that have been delineated previously, the previous delineations shall be updated and re-verified by USACE. Based on the jurisdictional determination, the project developer shall determine the exact acreage of waters of the United States, if any, and waters of the state to be filled as a result of project implementation.</p>	<p>LTS</p>

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		<p>If any of the waters to be filled are determined by the USACE to be waters of the United States, the project developer shall obtain a USACE Section 404 permit and RWQCB Section 401 certification before any groundbreaking activity. The project developer shall implement all permit conditions.</p> <p>If all waters in the project area are disclaimed by USACE, the project developer shall file a report of waste discharge with RWQCB prior to any groundbreaking activity within 50 feet of, or filling of, any wetland or other water, and comply with all waste discharge requirements prescribed by RWQCB.</p> <p>The project developer shall commit to replace or restore on a “no net loss” basis (in accordance with USACE and/or RWQCB) the acreage and function of all wetlands and other waters that would be removed, lost, or degraded as a result of project implementation. Wetland habitat shall be restored or replaced at an acreage and location and by methods agreeable to USACE and the Central Valley RWQCB, as appropriate, depending on agency jurisdiction, and as determined during the Section 401 and Section 404 permitting processes or the waste discharge requirements. If available, compensatory mitigation shall be provided through the purchase of credits at a mitigation bank approved by USACE and RWQCB, as appropriate depending on agency jurisdiction.</p> <p>If mitigation bank credits are not available and it is required by USACE, the project developer shall prepare a mitigation plan detailing how the loss of aquatic functions will be replaced. The mitigation plan shall describe compensation ratios for acres filled, mitigation sites, a monitoring protocol, annual performance standards and final success criteria for created or restored habitats, corrective measures to be applied if performance standards are not met.</p>	
<p>Impact 5.3-4: Loss of Trees Implementation of the project could result in loss of protected tree resources. This would be a potentially significant impact.</p>	<p>PS</p>	<p>Mitigation Measure 5.3-4: Protection and replacement of trees. The following measures shall be implemented to avoid impacts to trees to be retained. These measures shall be included in the project’s tree projection plans, tree replacement plans, and project improvement plans.</p> <ul style="list-style-type: none"> ▲ No grade cuts greater than 1 foot shall occur within the driplines of protected trees, and no grade cuts whatsoever shall occur within 5 feet of their trunks; ▲ No fill greater than 1 foot shall be placed within the driplines of protected trees and no fill whatsoever shall be placed within 5 feet of their trunks; 	<p>LTS</p>

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		<ul style="list-style-type: none"> ▲ No trenching whatsoever shall be allowed within the driplines of protected trees. If it is absolutely necessary to install underground utilities within the driplines of a protected tree, the trench shall be either bored or drilled; ▲ No irrigation system shall be installed within the driplines of preserved native oak tree(s), which may be detrimental to the preservation of the native oak tree(s) unless specifically authorized by the approving body. ▲ Landscaping beneath native oak trees may include non-plant materials such as boulders, cobbles, wood chips, etc. The only plant species which shall be planted within the driplines of oak trees are those which are tolerant of the natural semi-arid environs of the trees. Limited drip irrigation approximately twice per summer is recommended for the understory plants. <p>Where it is not possible to avoid impacts to protected trees, tree replacement shall be provided consistent with the City Tree Preservation Ordinance to the satisfaction of the City. Replacement of trees shall occur at a ratio of one inch of tree replaced for each inch of tree removed (1:1 ratio).</p>	
<p>Impact 5.3-5: Cumulative Impacts to Biological Resources Implementation of the project in combination with potential development in the region would contribute to cumulative impacts associated with significant effects to loss of habitat, special-status plant and wildlife species, wetlands, and heritage trees. Project mitigation measures and its participation in the Natomas Basin Habitat Conservation Plan would offset its contribution to the cumulative loss of biological resources. Thus, the project's contribution would be less than cumulatively considerable.</p>	LCC	None required.	LCC
<p>5.4 Archaeological, Historical, and Tribal Cultural Resources</p>			
<p>Impact 5.4-1: Change in the significance of a historic resource (structures) Records search results and pedestrian surveys have identified one historic-era site, the Krumenacher Ranch. This site has been evaluated for the NRHP and CRHR multiple times since 2005 and has been determined to be not eligible for listing. Thus, the project would have a less than significant impact.</p>	LTS	None required.	LTS
<p>Impact 5.4-2: Change in the significance of a historic resource (historic landscape) The project is located at the southern end of the RD1000 historic landscape; however, this portion of the historic landscape does not contribute to its eligibility for inclusion in the NRHP. The Krumenacher Ranch was evaluated as not eligible for listing in the NRHP as a</p>	LTS	None required.	LTS

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<p>historic vernacular landscape. No other historic landscapes are present in the project area. Therefore, the project would have a less-than-significant impact on historic landscapes.</p>			
<p>Impact 5.4-3: Change in the significance of an archaeological resource Based on the results of the archaeological records search and various pedestrian surveys conducted for the project site, there are no known archaeological sites. However, ground-disturbing activities could result in discovery or damage of as yet undiscovered archaeological resources as defined in CEQA Guidelines Section 15064.5. This would be a potentially significant impact.</p>	<p>PS</p>	<p>Mitigation Measure 5.4-3a. Develop and implement a Worker Environmental Awareness Program Prior to improvement plan approval, the project developer shall design and implement a Worker Environmental Awareness Program (WEAP) that shall be provided to all construction personnel and supervisors who will have the potential to encounter and alter heritage and cultural resources. The WEAP shall be submitted to the City and shall describe, at a minimum:</p> <ul style="list-style-type: none"> ▲ types of cultural resources expected in the project area; ▲ types of evidence that indicate cultural resources might be present (e.g., ceramic shards, trash scatters, lithic scatters); ▲ what to do if a worker encounters a possible resource; ▲ what to do if a worker encounters bones or possible bones; and ▲ penalties for removing or intentionally disturbing heritage and cultural resources, such as those identified in the Archeological Resources Protection Act. <p>Mitigation Measure 5.4-3b: Stop work in the event of an archaeological discovery In the event that evidence of any prehistoric or historic-era subsurface archaeological features or deposits are discovered during construction-related earth-moving activities (e.g., ceramic shard, trash scatters, lithic scatters), all ground-disturbing activity in the area of the discovery shall be halted until a qualified archaeologist can assess the significance of the find. The City and the Department of Museums shall be notified of the potential find and a qualified archeologist shall be retained to investigate. If the find is an archeological site, the appropriate Native American group shall be notified. If the archaeologist determines that the find does not meet the CRHR standards of significance for cultural resources, construction may proceed. If the archaeologist determines that further information is needed to evaluate significance, the City shall be notified and a data recovery plan shall be prepared. If the find is determined to be significant by the qualified archaeologist (i.e., because the find is determined to constitute either an historical resource or a unique archaeological resource), the archaeologist shall work with the project developer to avoid disturbance to the resources, and if complete avoidance is not feasible in light of project design, economics, logistics, and other factors, follow accepted professional standards in recording any find including submittal of the standard DPR Primary Record forms (Form</p>	<p>LTS</p>

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		DPR 523) and location information to the appropriate California Historical Resources Information System office for the project area (the NCIC).	
<p>Impact 5.4-4: Discovery of previously unknown resources or human remains Although unlikely, construction and excavation activities associated with project development could unearth previously undiscovered or unrecorded human remains, if they are present. Compliance with California Health and Safety Code Sections 7050.5 and 7052 and California Public Resources Code Section 5097 in the event that human remains are found would make this impact less than significant.</p>	LTS	None required.	LTS
<p>Impact 5.4-5: Change in the significance of a tribal cultural resource Consultation with UAIC and Wilton Rancheria has resulted in no resources identified as TCRs as described under AB 52. Because no resources meet the criteria for a TCR under PRC Section 21074, there would be no impact to tribal cultural resources.</p>	NI	None required.	NI
<p>Impact 4.5-6: Contribution to cumulative impacts on historic resources (structures). The project would not result in the loss of the historic resources, and would not contribute to the cumulative loss of historic agricultural structures in the Sacramento Valley. The cumulative impact associated with the loss of historic structures in the Sacramento Valley would be significant and the project's contribution would be less than cumulatively considerable.</p>	LCC	None required.	NC
<p>Impact 4.5-7: Contribution to cumulative impacts on historic resources (landscapes). Continued development of the Sacramento Valley, including development under the project, would not cause a significant impact to the historic landscape associated with RD 1000 or affect any of its contributing elements or other characteristics that make it eligible for inclusion in the NRHP. This is a less-than-significant cumulative impact and the project's cumulative contribution would not be considerable such that a new significant cumulative impact would occur.</p>	NC	None required.	NC
<p>Impact 4.5-8: Contribution to cumulative impacts on archaeological resources Cumulative development could result in potentially significant archaeological resource impacts. However, with implementation of the mitigation measures proposed, the project's contribution to these impacts would be reduced to a less-than-significant level. Therefore, the project's contribution to cumulative archaeological resource impacts would not be cumulatively considerable.</p>	NCC	None required.	NCC
<p>Impact 4.5-9: Contribution to cumulative impacts on human remains.</p>	NCC	None required.	NCC

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<p>The project, in combination with other development in the Valley Nisenan and Plains Miwok territory could contribute to the disturbance of human remains because of project-related construction activities. This would be a significant cumulative impact. However, compliance with California Health and Safety Code Sections 7050.5 and 7052 and California Public Resources Code Section 5097 would ensure the project's contribution would not be cumulatively considerable.</p>			
<p>5.5 Geology, Soils, Mineral Resources, and Paleontology</p>			
<p>Impact 5.5-1: Expose people and structures to seismic hazards, such as groundshaking Implementation of the project may expose people and structures to seismic hazards. Design requirements, such as the California Building Code, include earthquake resistant design and materials that meet or exceed the current seismic engineering standards of the Seismic Zone 3 improvements. This would be a less-than-significant impact.</p>	LTS	None required.	LTS
<p>Impact 5.5-2: Expose people and structures to risks associated with expansive soil conditions. Implementation of the project would occur on soil that is highly expansive with a high expansion potential. Construction of buildings on expansive soils may exert substantial pressures upon foundations, concrete slabs-on-grade, and other structural components, creating a substantial risk to life or property. This would be a potentially significant impact.</p>	PS	<p>Mitigation Measure 5.5-2 Implement Recommendations of Geotechnical Engineering Reports The project developer shall retain a qualified engineering firm on site during site preparation and grading operations to observe and test the fill to ensure compliance with recommendations from the geotechnical investigation report. These recommendations at a minimum include:</p> <ul style="list-style-type: none"> ▲ During project design and construction, all measures outlined in the geotechnical engineering reports for the project (Wallace Kuhl 2016a, 2016b, 2016c, 2016d, and 2016e) as well as specific design measures shall be implemented, at the direction of the City engineer, to prevent significant impacts associated with expansive soils. A geotechnical engineer shall be present on-site during earthmoving activities to ensure that requirements outlined in the geotechnical reports are adhered to for proposed fill and compaction of soils identified below. ▲ If the construction schedule requires continued work during the wet weather months (i.e., October through April), the project developer shall consult with a qualified civil engineer and implement any additional recommendations provided, as conditions warrant. These recommendations may include, but would not be limited to: 1) allowing a prolonged drying period before attempting grading operations at any time after the onset of winter rains; and 2) implementing aeration or lime treatment, to allow any low-permeability surface clay soils 	LTS

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		intended for use as engineered fill to reach a moisture content that would permit a specified degree of compaction to be achieved.	
<p>Impact 5.5-3: Potential to cause loss of top soil and soil erosion. Implementation of the project would require excavation and grading that has the potential to result in top soil loss and soil erosion. However, the project would be required to comply with General Permit for Discharges of Storm Water Associated with Construction Activity, the City’s Grading Ordinance, and General Plan policies addressing soil and erosion impacts. Compliance with these standard requirements would ensure that the project’s soil and erosion impacts would be less than significant.</p>	LTS	None required.	LTS
<p>Impact 5.5-4: Damage or destruction of undiscovered paleontological resources The project could result in the potential damage or destruction of undiscovered paleontological resources. This would be a potentially significant impact.</p>	PS	<p>Mitigation Measure 5.5-4 Protection of discovered paleontological resources If discovery is made of items of paleontological interest, the contractor shall immediately cease all work activities in the vicinity (within approximately 100 feet) of the discovery. After cessation of excavation the contractor shall immediately contact the City. Project construction workers will be trained to identify potential paleontological resources.</p> <p>The project developer shall retain a qualified paleontologist to observe all grading and excavation activities throughout all phases of project construction and shall salvage fossils as necessary. The paleontologist shall establish procedures for paleontological resource surveillance and shall establish, in cooperation with the project developer, procedures for temporarily halting or redirecting work to permit sampling, identification, and evaluation of fossils. If major paleontological resources are discovered that require temporarily halting or redirecting of grading, the paleontologist shall report such findings to the project developer and to the City. The paleontologist shall determine appropriate actions, in cooperation with the project developer and the City, that ensure proper exploration and/or salvage. Excavated finds shall first be offered to a State-designated repository such as the Museum of Paleontology, University of California, Berkeley, or the California Academy of Sciences. Otherwise, the finds shall be offered to the City for purposes of public education and interpretive displays. These actions, as well as final mitigation and disposition of the resources, shall be subject to approval by the City. The paleontologist shall submit a follow-up report to the City that shall include the period of inspection, an analysis of the fossils found, and the present repository of fossils.</p>	LTS
<p>Impact 5.5-5: Cumulative Impacts to Geology and Soils</p>	LCC	None required.	NCC

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Implementation of the project in combination with potential development in the region would not contribute geologic and soil stability impacts as such impacts are site-specific. This contribution would be less than cumulatively considerable.			
<p>Impact 5.5-6: Cumulative Impacts to Paleontological Resources</p> <p>Implementation of the project in combination with potential development in the region could result in the significant cumulative impacts associated with the destruction of paleontological resources. However, project mitigation measures would address impact and ensure that the project's contribution would not be cumulatively considerable.</p>	NCC	None required.	NCC
<p>5.6 Greenhouse Gas Emissions and Climate Change</p>			
<p>Impact 5.6-1: Project-generated greenhouse gas emissions</p> <p>The project is estimated to generate 5,530 MTCO₂e from construction activities and 27,379 MTCO₂e operational-related emissions at project buildout in 2036. Total project emissions would be 27,600 MTCO₂e/year in 2036 with combined amortized construction emissions. This level of GHG emissions has the potential to result in a considerable contribution to cumulative emissions related to global climate change and conflict with State GHG reduction targets established for 2030 and 2050. This cumulative impact would be significant and the project's contribution would be cumulatively considerable.</p>	CC	<p>On-site GHG emission reduction measures</p> <p>Mitigation Measure 5.6-1a</p> <p>The project developer shall incorporate the following mitigation measures into the project to reduce operational emissions of GHGs to the extent feasible.</p> <p><u>Transportation</u></p> <ul style="list-style-type: none"> ▲ Include adequate electric wiring and infrastructure in all single-family residential units (shown in building plans) to support a 240-volt electric vehicle charger in the garage or off-street parking area to allow for the future installation of electric vehicle chargers. This connection shall be separate from the connection provided to power an electric clothes dryer. ▲ Include electric vehicle charging stations, similar or better than Level 2, in parking areas as part of site design submittals for development of the designated suburban center and elementary school. <p><u>Building Energy</u></p> <ul style="list-style-type: none"> ▲ Achieve as many residential and non-residential zero net energy buildings as feasible, which shall be implemented in the following way: <ul style="list-style-type: none"> ▼ Prior to the issuance of building permits for residential, commercial, and private recreation centers, the project developer or its designee shall submit a Zero Net Energy Confirmation Report (ZNE Report) prepared by a qualified building energy efficiency and design consultant to the City of Sacramento for review and approval. The ZNE Report shall demonstrate that development within the Panhandle PUD project area subject to application of Title 24, Part 6, of the California Code of Regulations has been designed and shall be constructed to achieve ZNE, as defined by CEC in its 2015 Integrated Energy Policy Report, or 	NCC

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		<p>otherwise achieve an equivalent level of energy efficiency, renewable energy generation or greenhouse gas emissions savings.</p> <ul style="list-style-type: none"> ▲ Where ZNE is deemed infeasible, building energy may also be reduced in the following ways: <ul style="list-style-type: none"> ➤ Reduce building energy-related GHG emissions through the use of on-site renewable energy (e.g., solar photovoltaic panels) where technologically feasible and at a minimum of 15 percent of the project's total energy demand. Building design, landscape plans, and solar installation shall take into account solar orientation, and building roof size to maximize solar exposure. ➤ Provide incentives to future residents to purchase Energy Star™ appliances (including clothes washers, dish washers, fans, and refrigerators). ➤ Install high efficiency lighting (i.e., light emitting diodes) in all streetlights, security lighting, and all other exterior lighting applications. ➤ Provide electrical outlets on the exterior of project buildings to allow sufficient powering of electric landscaping equipment. ➤ Install low-flow kitchen faucets that comply with CALGreen residential voluntary measures (maximum flow rate not to exceed 1.5 gallons per minute at 60 psi). ➤ Install low-flow bathroom faucets that exceed the CALGreen residential mandatory requirements (maximum flow rate not to exceed 1.5 gallons per minute at 60 psi) ➤ Install low-flow toilets that exceed the CALGreen residential mandatory requirements (maximum flush volume less not to exceed 1.28 gallons per flush) ➤ Install low-flow showerheads that exceed the CALGreen residential mandatory requirements (maximum flow rate not to exceed 2 gallons per minute at 80 psi) ➤ Reduce turf area and use water-efficient irrigation systems (i.e., smart sprinkler meters) and landscaping techniques/design. <p>Purchase carbon offsets</p> <p>Mitigation Measure 5.6-1b In addition to Mitigation Measures 5.6-1a and 5.2-2 (Air Quality Mitigation Plan), the project developer shall offset GHG emissions to zero by funding activities that directly reduce or sequester GHG emissions or, if necessary, obtaining carbon credits.</p>	

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		<p>To the degree a project relies on GHG mitigation measures, the City of Sacramento, SMAQMD, and ARB recommend that lead agencies prioritize on-site design features (Mitigation Measures 5.6-1a and 5.2-2) and direct investments in GHG reductions in the vicinity of the project, to help provide potential air quality and economic co-benefits locally. For example, direct investment in a local building retrofit program can pay for cool roofs, solar panels, solar water heaters, smart meters, energy efficient lighting, energy efficient appliances, energy efficient windows, insulation, and water conservation measures for homes within the geographic area of the project. Other examples of local direct investments include financing installation of regional electric vehicle charging stations, paying for electrification of public school buses, and investing in local urban forests. However, it is critical that any such investments in actions to reduce GHG emissions are real and quantifiable. Where further project design or regional investments are infeasible or not proven to be effective, it may be appropriate and feasible to mitigate project emissions through purchasing and retiring carbon credits issued by a recognized and reputable accredited carbon registry.</p> <p>The CEQA Guidelines recommend several options for mitigating GHG emissions. State CEQA Guidelines Section 15126.4(C)(3) states that measures to mitigate the significant effects of GHG emissions may include “off-site measures, including offsets that are not otherwise required...” Through the purchase of GHG credits through voluntary participation in an approved registry, GHG emissions may be reduced at the project level. GHG reductions must meet the following criteria:</p> <ul style="list-style-type: none"> ▲ Real—represent reductions actually achieved (not based on maximum permit levels), ▲ Additional/Surplus—not already planned or required by regulation or policy (i.e., not double counted), ▲ Quantifiable—readily accounted for through process information and other reliable data, ▲ Enforceable—acquired through legally-binding commitments/agreements, ▲ Validated—verified through accurate means by a reliable third party, and ▲ Permanent—will remain as GHG reductions in perpetuity. <p>In partnership with offset providers, the project developer shall purchase carbon offsets (from available programs that meet the above criteria) of at least 20,800 MTCO_{2e}/year. It should be noted, however, that these numbers represent an estimate based on reductions</p>	

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		<p>achieved through the measures included in Mitigation Measures 5.6-1a and 5.2-2, and are subject to change depending on alterations in the level of mitigation applied to the project depending on the feasibility of individual measures. Offset protocols and validation applied to the project could be developed based on existing standards (e.g., Climate Registry Programs) or could be developed independently, provided such protocols satisfy the basic criterion of “additionality” (i.e., the reductions would not happen without the financial support of purchasing carbon offsets).</p> <p>Purchases of offsets would occur once and remain effective throughout the lifetime of the project (i.e., 25 years per SMAQMD guidance). For an offset to be considered viable, it must exhibit “permanence.” To adequately reduce emissions of GHGs, carbon offsets must be able to demonstrate the ability to counterbalance GHG emissions over the lifespan of a project or “in perpetuity.” For example, the purchase of a carbon offset generated by a reforestation project would entail the replanting or maintenance of carbon-sequestering trees, which would continue to sequester carbon over several years, decades, or centuries (Forest Trends 2015). The offsets purchased must offer an equivalent GHG reduction benefit annually i.e., 20,800 MTCO_{2e} or more GHGs reduced annually as opposed to a one-time reduction.</p> <p>Prior to issuing building permits for development within the project area, the City of Sacramento shall confirm that the project developer or its designee has fully offset the project’s remaining (i.e., post implementation of Mitigation Measures 5.6-1a and 5.2-2) operational GHG emissions over the 25-year project life associated with such building permits by relying upon one of the following compliance options, or a combination thereof:</p> <ul style="list-style-type: none"> ▲ Demonstrate that the project developer has directly undertaken or funded activities that reduce or sequester GHG emissions that are estimated to result in GHG reduction credits (if such programs are available), and retire such GHG reduction credits in a quantity equal to the remaining operational GHG emissions; ▲ Provide a guarantee that it shall retire carbon credits issued in connection with direct investments (if such programs exist at the time of building permit issuance) in a quantity equal to the remaining operational GHG emissions; ▲ Undertake or fund direct investments (if such programs exist at the time of building permit issuance) and retire the associated carbon credits in a quantity equal to the remaining operational GHG emissions; or ▲ If it is impracticable to fully offset operational emissions through direct investments or quantifiable and verifiable programs do not exist, the project developer or its 	

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Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
		designee may purchase and retire carbon credits that have been issued by a recognized and reputable, accredited carbon registry in a quantity equal to the remaining operational GHG Emissions.	
<p>Impact 5.6-2: Impacts of climate change on the project. The project is not located within an area projected to experience a substantial increase in wildland fire risk or flooding as a result of climate changes in the future. Further, water supply for the project would be adequate. Anticipated changes in future climate patterns are not anticipated to have any substantial adverse effects on the project. Therefore, the impacts of climate change on the project would be less than significant.</p>	LTS	None required.	LTS
<p>5.7 Hazards and Hazardous Materials</p>			
<p>Impact 5.7-1: Create a significant hazard through the routine transport, use, or disposal of hazardous materials Development and operation of the project would result in transport, use, and disposal of hazardous materials to and from the project area. Adherence to existing regulations and compliance with safety standards related to the transport, use, storage, and disposal of hazardous materials would reduce the hazards associated with these activities. This would be a less-than-significant impact.</p>	LTS	None required	LTS
<p>Impact 5.7-2: Accidental Release of Hazardous Materials Demolition activities and development of the project area could result some potential for reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment. However, implementation of existing federal, State, and local regulations pertaining to demolition and handling of hazardous substances would reduce the potential for accidental hazardous material releases. This would be a less-than-significant impact.</p>	LTS	None required.	LTS
<p>Impact 5.7-3: Hazards Associated with Mosquitoes The Panhandle PUD would include detention facilities that could attract mosquitoes and other water-borne vectors. Without specific controls in place, these features could create a nuisance or hazardous condition. This would be a potentially significant impact.</p>	PS	<p>Mitigation Measure 5.7-3 Develop and implement a Vector Control Plan As part of site-specific design of the Panhandle PUD detention basin and other water/drainage features, a Vector Control Plan shall be developed to the satisfaction of the Sacramento-Yolo Mosquito and Vector Control District. The Vector Control Plan shall specify mosquito control measures to be used (e.g., biological agents, pesticides, larvicides, circulating water), as well as identification of maintenance program to ensure control measures are maintained. Evidence of Sacramento-Yolo Mosquito and Vector Control</p>	LTS

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Table 2-1 Summary of Impacts and Mitigation Measures

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
		District’s design approval shall be provided to the City of Sacramento prior to improvement plan approval for detention basin and water/drainage features.	
<p>Impact 5.7-4: Hazards Associated with Electromagnetic Fields The Panhandle PUD would place residential uses and a school site near existing high-voltage power lines, which are a source of electromagnetic fields. However, the siting of the proposed school facilities would comply with the setback requirements of the California Department of Education. Further, there is no available data that demonstrates there are health risks associated with EMF exposure. Therefore, this has been determined by the City to be a less-than-significant impact.</p>	LTS	None required.	LTS
<p>Impact 5.7-5: Impair Implementation of, or Physically Interfere with, Adopted Emergency Response or Evacuation Plans The Panhandle PUD would provide multiple roadway access routes for the project area and would not interfere with emergency response or evacuation plans. This would be a less-than-significant impact.</p>	LTS	None required.	LTS
<p>Impact 5.7-6: Expose people or structures to wildland fire hazard Development of the project area would reduce wildland fire hazards in the area by converting open grassland areas to urban uses. This is a less-than-significant impact.</p>	LTS	None required.	LTS
<p>Impact 5.7-7: Cumulative Hazards and Hazardous Material Impacts Implementation of the project in combination with potential development in the region would not contribute cumulative hazard impacts as such impacts are site-specific. This contribution would be less than cumulatively considerable.</p>	LCC	None required	NCC
<p>5.8 Hydrology and Water Quality</p>			
<p>Impact 5.8-1: Storm Water Runoff Generation and Surface Water Drainage Patterns Development of the project may increase storm water runoff rates generated within and downstream of the project when compared with existing conditions. While the project includes necessary drainage improvements to properly handle onsite storm water flows, phased development of the site could potentially result in temporary drainage impacts if the necessary drainage facilities are not in place at the time of site development. Development could also worsen existing drainage and local flooding issues at the intersection of Del Paso Road and Sorento Road. This impact would be potentially significant.</p>	PS	<p>Mitigation Measure 5.8-1: Demonstrate compliance with Drainage Report As part of approval of each small lot final map and/or each subsequent project, the project developer shall demonstrate to the City that drainage facilities are consistent with the Drainage System Modeling Report for the Natomas Panhandle (Panhandle Owner’s Group 2016), and adequately attenuate increased drainage flows consistent with City standards. The analysis will also demonstrate that existing flooding issues at the intersection of Del Paso Road/Sorento Road will not be worsen by site development. This demonstration may take the form of plans and/or reports.</p>	LTS

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Table 2-1 Summary of Impacts and Mitigation Measures

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
<p>Impact 5.8-2: Surface Water Quality Development of the project would introduce sediments and constituent pollutants typically associated with construction activities and urban development into storm water runoff. These pollutants would have the potential of degrading downstream storm water quality. This impact would be potentially significant.</p>	PS	<p>Mitigation Measure 5.8-2: Design drainage facilities to include water quality control features Drainage facilities shall be designated to meet or exceed storm water quality requirements set forth in City Standards pertaining to regional storm water quality control in association with NPDES Stormwater Permit No. CA502597. Water quality control may consist of pollutant source control, water quality treatment through Best Management Practices or a combination of both measures. Water quality control features as part of drainage facilities shall be reviewed and approved by the City before approval of improvement plans for the site.</p>	LTS
<p>Impact 5.8-3 Flood Risk from Levee Failure The project may conflict with planned improvements to the North Natomas Levee associated with the NEMDC to provide flood protection. This impact would be potentially significant.</p>	PS	<p>Mitigation Measure 5.8-3: Provision of 150-foot setback from centerline of the Natomas Levee As part of approval of each small lot final map and/or each subsequent project, the project developer shall designate a 150-foot setback from centerline of the Natomas Levee. The landside of the levee shall be designated as open space or other uses that would not damage the levee and will provide access to Reclamation District 1000 and the Sacramento Area Flood Control for levee improvements and maintenance.</p>	LTS
<p>Impact 5.8-4 Groundwater Quality It is possible that shallow groundwater beneath the proposed onsite detention basins could interact with pollutants associated with urban runoff that would be captured within the detention basins. Pollutants could be released in the underlying groundwater basin and could result in contamination of wells used for consumptive uses. This impact would potentially significant.</p>	PS	<p>Mitigation Measure 5.8-4: Evaluate depth to groundwater and incorporate appropriate features into detention basin design As part of the final design of the project detention basin, soil borings shall be taken at representative locations within the detention basin to analyze the subsurface soils that are present and the elevation of the subsurface water table. If these soil borings identify shallow groundwater within 2 feet of the proposed bottom elevation of the detention basin, or within the detention basin, a liner and/or additional water quality control features such as vegetation shall be incorporated into the design of the detention basin to prohibit the migration of surface water contamination into the groundwater table, subject to City review and approval.</p>	LTS
<p>Impact 5.8-5: Cumulative Water Quality Impacts The project in combination with planned and proposed development in the region could contribute to potential cumulative impacts to surface and groundwater quality from construction and operation activities. However, with implementation of City stormwater quality requirements and mitigation measures proposed, the project's contribution to cumulative water quality impacts would not be cumulatively considerable.</p>	NCC	None required.	NCC
<p>Impact 5.8-6 Cumulative Flood Hazards</p>	NCC	None required.	NCC

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Table 2-1 Summary of Impacts and Mitigation Measures

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
<p>The project in combination with planned and proposed development in the region could contribute to potential impacts to cumulative flood hazards. However, with implementation of mitigation measures proposed, the project's contribution to cumulative flooding and drainage impacts would not be cumulatively considerable.</p>			
<p>5.9 Noise and Vibration</p>			
<p>Impact 5.9-1: Short-term construction noise impacts Short-term construction-generated noise levels could result in a substantial increase in ambient noise levels at future on-site and existing off-site sensitive land uses that could generate substantial and exceed applicable noise standards. Thus, this would be a significant impact.</p>	<p>S</p>	<p>Mitigation Measure 5.9-1a: Implement construction-noise reduction measures. To minimize noise levels during construction activities, the City shall require the project developer and their construction contractors to comply with the following measures during all construction work:</p> <ul style="list-style-type: none"> ▲ All construction equipment and equipment staging areas shall be located as far as feasible 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 manufacturer's recommendations. Equipment engine shrouds shall be closed during equipment operation. ▲ 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) where feasible and consistent with building codes and other applicable laws and regulations. ▲ Construction activities shall comply with the requirements of the City of Sacramento Municipal Code. ▲ To the maximum extent feasible, construction activity shall take place within the City of Sacramento construction noise exemption timeframes (i.e., 7:00 a.m. and 6:00 p.m., Monday through Saturday, and between 9:00 a.m. and 6:00 p.m. Sunday). <p>Mitigation Measure 5.9-1b: Implement construction-noise reduction measures during noise-sensitive time periods. For all construction activity that would take place outside of the City of Sacramento construction noise exemption timeframes (i.e., 7:00 a.m. and 6:00 p.m., Monday through Saturday, and between 9:00 a.m. and 6:00 p.m. Sunday), and that is anticipated to generate more than 50 Leq or 70 Lmax at 50 feet, the City shall require the project developer and their construction contractors to comply with the following measures:</p>	<p>SU</p>

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Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
		<ul style="list-style-type: none"> ▲ Consistent with Section 8.68.080, Exemptions, of the City of Sacramento Code, obtain an exemption to Article II Noise Standards for nighttime construction. Exemption applications for work to be performed during the hours not exempt by Section 8.68.080 shall be approved by the City’s director of building inspections and shall not exceed three days. Application for this exemption may be made in conjunction with the application for work permit or during the construction process. ▲ Implement noticing to adjacent landowners and implement conditions included in the exemption, if approved by the City’s director of building inspections. ▲ Install temporary noise curtains as close as feasible to the boundary of the construction site blocking the direct line of sight between the source of noise and the nearest noise-sensitive receptor(s). Temporary noise curtains shall consist of durable, flexible composite material featuring a noise barrier layer bounded to sound-absorptive material on one side. The noise barrier layer shall consist of rugged, impervious, material with a surface weight of at least one pound per square foot. ▲ Noise-reducing enclosures and techniques shall be used around stationary noise-generating equipment (e.g., concrete mixers, generators, compressors). ▲ Operate heavy-duty construction equipment at the lowest operating power possible. 	
<p>Impact 5.9-2: Exposure of existing sensitive receptors to excessive traffic noise levels and/or substantial increases in traffic noise. Implementation of the project could expose existing sensitive receptors to substantial increases in transportation noise levels that exceed the City and County of Sacramento noise standards, and result in project-generated transportation noise levels that exceed City and County of Sacramento allowable noise increment standards. Therefore, this impact would be significant.</p>	<p>S</p>	<p>Mitigation Measure 5.9-2: Reduce noise exposure to existing sensitive receptors from project-generated traffic. The project developer shall in coordination with the City implement the following measures to reduce the effect of noise levels generated by on-site stationary noise sources:</p> <ul style="list-style-type: none"> ▲ Construct outdoor sound barriers at the following locations: <ul style="list-style-type: none"> ➤ Between the segment of Del Paso Road from Sorento Road to Carey Road, and the ground level receptors directly north of this segment of roadway. ➤ Between the segment of Sorento Road from Del Paso Road to East Levee Road, and the ground level receptors directly east of this segment of roadway. <p>The applicant in coordination with the City shall offer the owners of all the residences with addresses along this roadway segment the installation of a sound barrier along the property line of their affected residential properties. At a minimum, the sound barriers shall be just tall enough to break the line of sight between vehicles traveling along this segment of roadway and the existing sensitive receptors to the east of the roadway. The</p>	<p>SU</p>

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		<p>sound barriers shall be constructed of solid material (e.g., wood, brick, adobe, an earthen berm, boulders, or combination thereof). The reflectivity of each sound barrier shall be minimized to ensure that traffic noise reflected off the barrier does not contribute to an exceedance of applicable noise standards at other off-site receptors. The level of sound reflection from a barrier can be minimized with a textured or absorptive surface or with vegetation on or next to the barrier. All barriers shall blend into the overall landscape and have an aesthetically pleasing appearance that agrees with the character of the surrounding area, and not become the dominant visual element of the area. The owners of the affected properties may choose to refuse this offer; however, the offer shall be made available to subsequent owners of the property if change of ownership occurs before project construction is complete. If an existing owner refuses these measures, a deed notice must be included with any future sale of the property to comply with California state real estate law, which requires that sellers of real property disclose “any fact materially affecting the value and desirability of the property” (California Civil Code, Section 1102.1[a]) and shall indicate that the applicant agrees to install a sound barrier, as described above.</p> <p>▲ The majority of residences along the east side of the segment of Sorento Road from Del Paso Road to East Levee Road have ingress and egress points (driveways) along the roadway of concern, thus, preventing continuous sound barriers from being constructed. Therefore, in addition to the sound barriers described above, the applicant in coordination with the City shall offer the owners of all the residences with driveways along this roadway segment the installation of solid driveway gates to provide additional noise attenuation where sound barriers are not able to be constructed. The driveway gates must be constructed of solid material (e.g., wood, metal, or combination thereof) and designed to ensure maximum noise attenuation. The owners of the affected properties may choose to refuse this offer; however, the offer shall be made available to subsequent owners of the property if change of ownership occurs before project construction is complete. If an existing owner refuses these measures, a deed notice must be included with any future sale of the property to comply with California state real estate law, which requires that sellers of real property disclose “any fact materially affecting the value and desirability of the property” (California Civil Code, Section 1102.1[a]) and shall indicate that the applicant agrees to install a driveway gate, as described above.</p>	

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Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
		Because a sound wall already exists along Del Paso Road on the roadway segments that would experience an exceedance of the City exterior noise compatibility standards, no feasible mitigation measures have been identified.	
<p>Impact 5.9-3: Exposure of existing sensitive receptors to new or additional operational project-generated stationary noise sources</p> <p>The project would result in the development of commercial land uses in proximity to existing sensitive receptors. Noise sources generally associated with commercial/retail land uses include vehicular and human activity in parking lots, and loading dock and delivery activities. Based the modeled reference noise levels, no existing residential off-site receptors would experience commercial-related noise levels that exceed the City and County’s daytime and nighttime Leq or maximum intermittent noise (Lmax) levels standards. This impact would be less than significant.</p>	LTS	None required.	LTS
<p>Impact 5.9-4: Compatibility of Proposed Land Uses with Projected Levels of Noise Exposure</p> <p>The project proposes a mix of various land uses, including residential, commercial, park, and school uses. Traffic and stationary noise sources in the vicinity of the project may expose noise-sensitive uses within the project site to excessive noise levels, resulting in land use conflicts related to noise. Implementation of the project could expose future planned sensitive receptors to transportation and stationary source noise levels that exceed the City of Sacramento noise standards. Therefore, this impact would be significant.</p>	S	<p>Mitigation Measure 5.9-4a: Reduce transportation noise exposure to sensitive receptors</p> <p>For new sensitive receptors developed as part of the project and that would be located within 282 feet of the centerline of Del Paso Road, within 278 feet of the centerline of Del Paso Road, within 80 feet of the centerline of Club Center Drive, or within 90 feet of the centerline of Street “G” (i.e., the distance from the centerline that is estimated, based on the noise modelling, to result in exceedance of the City of Sacramento exterior noise compatibility standard of 60 CNEL for low density residential), any or all of the following design criteria shall be adhered to:</p> <ul style="list-style-type: none"> ▲ Where feasible, locate new sensitive receptors such that the outdoor activity area (e.g., balcony or porch) is on the opposite side of the structure from major roadways such that the structure itself would provide a barrier between transportation noise and the outdoor activity areas. ▲ Locate new sensitive receptors with other buildings/structures between the sensitive land use and nearby major roadways. ▲ If new sensitive receptors cannot be oriented or shielded by other structures, then design and building materials shall be chosen such that, at a minimum, 25 dBA of exterior-to-interior noise attenuation would be achieved, so that interior noise levels comply with the City of Sacramento interior noise standard of 45 Ldn. ▲ Setback sensitive receptors from major roadways at a distance that will not result in the exceedance of the City of Sacramento exterior noise compatibility standard of 60 CNEL for low-density residential land uses. 	LTS

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Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
		<p>If, and only if, implementation of the above measures do not reduce transportation-related noise levels to comply with the City of Sacramento exterior noise compatibility standard of 60 CNEL for low density residential, then as part of improvement plans for land uses along Del Paso Road, Elkhorn Boulevard, National Drive and Club Center Drive, landscaped noise barriers that demonstrate compliance with City noise standards (interior and exterior) shall be implemented. The project developer will be required to demonstrate compliance with this mitigation measure and whether noise barriers are ultimately required.</p> <p>Mitigation Measure 5.9-4b: Reduce noise exposure to existing sensitive receptors from proposed stationary noise sources</p> <p>The project developer shall implement the following measures to reduce the effect of noise levels generated by on-site stationary noise sources:</p> <ul style="list-style-type: none"> ▲ Loading docks shall be located and designed so that noise emissions do not exceed the stationary noise source criteria established in this analysis (i.e., exterior daytime [7:00 a.m. to 10:00 p.m.] standards of 55 Leq/ 75 Lmax and the exterior nighttime [10:00 p.m. to 7:00 a.m.] standards of 50 Leq / 70 Lmax; or interior noise standards of 45 Ldn) at any planned sensitive receptor. At the time of approval of special permits and/or development plan review, the project developer shall provide to the City a specialized noise study to evaluate specific design and ensure compliance with City of Sacramento noise standards. Reduction of loading dock noise can be achieved by locating loading docks as far away as feasible from noise-sensitive land uses, constructing noise barriers between loading docks and noise-sensitive land uses, or using buildings and topographic features to provide acoustic shielding for noise-sensitive land uses. Final design, location, and orientation shall be dictated by findings in the noise study, if applicable. 	
<p>Impact 5.9-5: Cumulative construction noise impacts</p> <p>Project construction-noise could result in a cumulatively considerable contribution to significant cumulative noise impacts if it were to occur concurrently with future construction activities located at nearby development. This cumulative impact would be significant and the project’s contribution would be cumulative considerable.</p>	<p>CC</p>	<p>None available.</p>	<p>CC SU</p>
<p>Impact 5.9-6: Cumulative Traffic Noise</p> <p>Cumulative noise levels could be affected by additional buildout of surrounding land uses and increases in vehicular traffic on affected roadways, thus resulting in a significant cumulative impact. Cumulative no project traffic noise levels in conjunction with project-generated traffic could result in additional traffic-related noise on surrounding roadways</p>	<p>CC</p>	<p>None available.</p>	<p>CC SU</p>

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<p>which could contribute to a cumulative traffic-noise condition. This cumulative impact would be significant and the project’s contribution would be cumulative considerable.</p>			
<p>Impact 5.9-7: Cumulative Operational Noise Operation of the proposed development would not result in noise levels that exceed applicable noise compatibility standards. Therefore, the project would not result in a considerable contribution such that a new significant operational noise impact would occur.</p>	NCC	None required.	NCC
<p>5.10 Public Services and Recreation</p>			
<p>Impact 5.10-1: Increased demand for fire protection and emergency medical services Implementation of the project at build-out would increase the demand for fire protection and emergency medical services that could result in the need for improvements to facilities and equipment. This would be a potentially significant impact.</p>	PS	<p>Mitigation Measure 5.10-1a Payment of fees The project applicant shall pay the necessary project-specific fire service impact fees associated with fire protection services which will be established in the Panhandle PUD Public Facilities Finance Plan.</p> <p>Mitigation Measure 5.10-1b Panhandle PUD Public Facilities Finance Plan The Panhandle PUD Public Facilities Finance Plan shall include all necessary public facility improvements (e.g., fire, law enforcement, water, wastewater, parks, roadways, and libraries) intended to solely serve the PUD as well as its fair-share contribution to public facilities that serve the North Natomas Community Plan area as identified in the North Natomas Nexus Study and Finance Plan 2008 Update. The Panhandle PUD Public Facilities Finance Plan shall ensure that public facilities and equipment required to service the project are in place concurrent with site development.</p>	LTS
<p>Impact 5.10-2: Increase the need for police protection services Implementation of the project at build-out would increase the demand for law enforcement services that could result in the need for improvements to facilities and equipment. This would be a potentially significant impact.</p>	PS	Implement Mitigation Measures 5.10-1a and 5.10-1b.	LTS
<p>Impact 5.10-3: Result in the need for expanded school facilities. The project at build-out would result in increased demand of public school services. However, TRUSD anticipates having a substantial number of open seats within its schools through 2023 and the project includes a junior high/high school within the project area. In addition, RSD is projected to have capacity to serve elementary school students with future development of the proposed elementary school. These schools would serve project residents and the surrounding area. The project would also be required to pay school</p>	LTS	None required.	LTS

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<p>facility impact fees to mitigate its contribution to school facility needs. This would be a less-than-significant impact.</p>			
<p>Impact 5.10-4: Increase the demand for parks and recreational facilities Implementation of the project at buildout would result in an increase in the demand for park and recreation facilities. The project would meet the City's requirements for parkland through parkland dedication and/or payment of in-lieu fees. This would be a less-than-significant impact.</p>	LTS	None required.	LTS
<p>Impact 5.10-5: Increase demand for library facilities Implementation of the project at buildout would increase the demand for library services. However, the project would not result in the need to construct any new, unplanned library facilities, and the applicant would be required to pay into a fee program that would contribute to the continued funding of the North and South Natomas libraries. This would be a less-than-significant impact.</p>	LTS	None required.	LTS
<p>Cumulative Impact 5.10-6: Cumulative impacts to public services and recreation Implementation of the project in combination with development in the City and County would contribute to potentially significant cumulative impacts on public services and recreation in the region. However, with implementation of the mitigation measures proposed in addition to payment of impacts, the project's contribution to these impacts would be reduced to a less than significant level. Therefore, the project's contribution to cumulative public service impacts would not be cumulatively considerable.</p>	NCC	None required.	NCC
<p>5.11 Transportation and Circulation</p>			
<p>Impact 5.11-1: Construction-Related Impacts During construction of the project, construction activities and temporary construction vehicle traffic would increase traffic congestion and disruptions in the area. Depending on the timing and intensity of such activities, this could result in substantial congestion and disruption in excess of City standards. Impacts would be significant.</p>	S	<p>Mitigation Measure 5.11-1: Implement construction traffic management plan. Before the commencement of construction, the applicant shall prepare a construction traffic management plan to the satisfaction of the City's Traffic Engineer and subject to review by all affected agencies. The plan shall ensure that acceptable operating conditions on roadways are maintained. At a minimum, the plan shall include:</p> <ul style="list-style-type: none"> ▲ Description of trucks including: number and size of trucks per day, expected arrival / departure times, truck circulation patterns. Truck routes will be limited to using Del Paso Road and Elkhorn Boulevard to access and depart the project. ▲ Description of staging area including: location, maximum number of trucks simultaneously permitted in staging area, use of traffic control personnel, specific signage. 	LTS

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		<ul style="list-style-type: none"> ▲ Description of street closures and/or bicycle and pedestrian facility closures including: duration, warning and posted signage, safe and efficient access routes for emergency vehicles, and use of manual traffic control. ▲ Description of access plan including: provisions for safe vehicular, pedestrian, and bicycle travel, minimum distance from any open trench, special signage, and private vehicle accesses. ▲ Provisions for parking for construction workers. <p>The traffic management plan shall address all means to minimize temporary impacts from roadway and travel lane disruptions. Adequate emergency response access shall be maintained throughout development of the project. Where the project work area encroaches on a public ROW and reduces the existing pedestrian path of travel to less than 48 inches wide, alternate pedestrian routing shall be provided during construction activities. Additionally, access to all nearby parcels shall be maintained during construction activities.</p>	
<p>Impact 5.11-2: Intersection Operations The addition of project-related traffic would increase delay at local intersections. Study intersections would meet level of service standards with the exception of the Sorento Road / Del Paso Road intersection. This is considered a significant impact.</p>	S	<p>Mitigation Measure 5.11-2: Intersection improvements. The project developer shall implement the following intersection improvement:</p> <ul style="list-style-type: none"> ▲ Install a traffic signal at the intersection of Sorento Road / Del Paso Road. This intersection meets the peak hour traffic signal warrant during the a.m. peak hour. This improvement shall be incorporated in the project's public facilities financing plan and installed before deficient operation of the intersection. 	LTS
<p>Impact 5.11-3: Roadway Segment Operations The addition of project-related traffic would increase delay at along study area roadway segments. The increase in delay along multiple roadway segments within the study area would level of service standards for the City and Sacramento County. This is considered a significant impact.</p>	S	<p>Mitigation Measure 5.11-3a: Roadway segment improvement. The project developer shall implement the following improvements:</p> <ul style="list-style-type: none"> ▲ Elkhorn Boulevard – SR 99 to Marysville Boulevard – Widen to four lanes. This improvement will be incorporated in the project's public facilities financing plan for fair-share contribution and in place before deficient operation. <p>Mitigation Measure 5.11-3b: Development of a neighborhood traffic management plan. The project developer shall prepare neighborhood traffic management plans for the following roadway segments for review and approval by the City:</p> <ul style="list-style-type: none"> ▲ Regency Park Circle – North of Club Center Drive ▲ Danbrook Drive – South of Club Center Drive ▲ Sorento Road – North of Del Paso Road 	LTS (Elkhorn Boulevard only) SU (all other roadway segments)

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		The neighborhood traffic management plans shall be implemented to address the impacts of increased traffic volumes on this street. The plans shall be developed in accordance with City practices, including the involvement of the neighborhood. The plans will focus on travel speed and safe pedestrian crossings, and may include elements such as chokers, pedestrian islands, curb extensions, and speed humps.	
<p>Impact 5.11-4: Freeway Operations While implementation of the project was determined to would contribute substantial traffic volumes to the currently deficient freeway segment of eastbound I-80 from Truxel Road to Northgate Boulevard, recently completed HOV lanes and other improvements to I-80 would improve operations and avoid significant operational impacts. This is considered a less than significant impact.</p>	LTS	None required.	LTS
<p>Impact 5.11-5: Demand for Bicycle Facilities The project would provide adequate on-site bicycle facilities, and connections to the existing bicycle facilities surrounding the project area. Additionally, the project would not remove or interfere with any existing or planned bicycle facility in the area. This is considered a less-than-significant impact.</p>	LTS	None required.	LTS
<p>Impact 5.11-6: Demand for Pedestrian Facilities The project would provide adequate on-site pedestrian facilities, and connections to the existing pedestrian facilities surrounding the project area. Additionally, the project would not remove or interfere with any existing or planned pedestrian facility in the area. This is considered a less-than-significant impact.</p>	LTS	None required.	LTS
<p>Impact 5.11-7: Demand for Transit Service The project would not conflict with existing or planned transit services or obstruct access to transit. This is considered a less than significant impact.</p>	S	<p>Mitigation Measure 5.11-7: Transit service improvements The project developer shall join the North Natomas Transportation Management Association and will coordinate on feasible measures to provide transit information and services to project residents that is phased with development and transit demand. The project developer will provide proof of compliance with this mitigation measure with each small lot subdivision map submittal.</p>	LTS
<p>Impact 5.11-8: Impair Emergency Vehicle Access and Hazardous Design Features Project roadway and emergency access would be designed to meet all City design and safety standards, and would subject to review of the City of Sacramento and responsible emergency services agencies. This is considered a less-than-significant impact.</p>	LTS	None required.	LTS
<p>Impact 5.11-9: Cumulative Construction Traffic Impacts</p>	NCC	None required.	NCC

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Table 2-1 Summary of Impacts and Mitigation Measures

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
<p>Project traffic from construction activities, in combination with traffic from cumulative development construction activities near the project area, could contribute to significant traffic congestion and disruptions in the area. However, with implementation of the mitigation measures proposed, the project's contribution to this impact would be reduced to a less than significant level. Therefore, the project's contribution to cumulative construction impacts would not be cumulatively considerable.</p>			
<p>Impact 5.11-10: Cumulative Intersection Operations The project's incremental increase in traffic to study intersections, in combination with traffic from cumulative development, would contribute to the deficient operation of the Sorento Road/Del Paso Road intersection. However, with implementation of the mitigation measures proposed, the project's contribution to this impact would be reduced to a less than significant level. Therefore, the project's contribution to cumulative intersection operation impacts would not be cumulatively considerable.</p>	NCC	None required.	NCC
<p>Impact 5.11-11: Cumulative Roadway Segment Operations The project's incremental increase in traffic to study roadway segments, in combination with traffic from cumulative development, would result in deficient level of service operations. Overall, cumulative impacts to roadway segment operations would be significant and the project's contribution would be cumulatively considerable.</p>	CC	<p>Mitigation Measure 5.11-11: Cumulative roadway segment improvements to Elkhorn Boulevard. The project developer shall implement the following measures within the within the study area: ▲ Elkhorn Boulevard – Sageview Drive to East Levee Road – Widen to six lanes. This improvement will be incorporated in the project's public facilities financing plan for fair-share contribution and in place before deficient operation. Table 5.11-26 summarizes cumulative plus project roadway segment conditions with mitigation.</p>	LCC (Elkhorn Boulevard only) SU (all other roadway segments)
<p>Impact 5.11-12: Cumulative Freeway Operations The proposed project's incremental increase in traffic to freeway segments, in combination with traffic from cumulative development, would not result in deficient level of service operations. This is a less-than-significant cumulative impact and the project's traffic contribution would not be considerable such that new significant cumulative impact would occur</p>	NC	None required.	NC
<p>Impact 5.11-13: Cumulative Demand for Bicycle Facilities The project, in combination with cumulative development in the North Natomas area, would further increase bicycle usage and the demand for bicycle facilities. However, with implementation of the project design includes new on-street and off-street bicycle facilities that would interconnect with existing and planned facilities, the project's contribution to</p>	NCC	None required.	NCC

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Table 2-1 Summary of Impacts and Mitigation Measures

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
<p>this impact would be reduced to a less than significant level. Therefore, the project's contribution to cumulative bicycle facility demand impacts would not be cumulatively considerable.</p>			
<p>Impact 5.11-14 Cumulative Demand for Pedestrian Facilities The project, in combination with cumulative development in the North Natomas area, would further increase pedestrian activity and the demand for new on-street and off-street pedestrian facilities. However, with implementation of the project design includes new on-street sidewalks and off-street trails that would interconnect with existing and planned pedestrian facilities, the project's contribution to this impact would be reduced to a less than significant level. Therefore, the project's contribution to cumulative pedestrian facility demand impacts would not be cumulatively considerable.</p>	NCC	None required.	NCC
<p>Impact 5.11-15: Cumulative Transit Impacts The project's incremental increase in area population would increase the demand for transit services, in combination with demands from cumulative development, would contribute to cumulative transit service impacts. However, with implementation of the mitigation measures proposed, the project's contribution to this impact would be reduced to a less than significant level. Therefore, the project's contribution to cumulative transit service impacts would not be cumulatively considerable.</p>	NCC	None required.	NCC
<p>Impact 5.11-16: Impair Emergency Vehicle Access and Hazardous Design Features under Cumulative Conditions The project, in combination with cumulative development in the North Natomas area, would further increase potential roadway hazards and increase the need for new emergency access routes. However, the project would not interfere with emergency response; rather, it would enhance emergency access, and be designed to meet all the design and safety standards. Therefore, the project's contribution to cumulative roadway hazards and the need for new emergency access impacts would not be cumulatively considerable.</p>	NCC	None required.	NCC
<p>5.12 Urban Design and Visual Resources</p>			
<p>Impact 5.12-1: Degradation of visual character The visual character surrounding the project area consists of suburban uses that transition to rural residential and agricultural conditions. The project would convert the visual open space character of project area to suburban uses and would further expand suburban</p>	S	None available.	SU

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Table 2-1 Summary of Impacts and Mitigation Measures

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
development conditions east of existing North Natomas Community that would substantially alter public views. Because of the size of project area and its location along the northern boundary of the City, the change in visual character would be considered a significant impact.			
<p>Impact 5.12-2: Day-time glare and nighttime lighting Development of the project area would result in the introduction of buildings and facilities that may create lighting and glare on adjoining areas. This impact would be significant.</p>	S	<p>Mitigation Measure 5.12-2: Light fixture design Outdoor lighting for commercial uses and community parks/sports facilities shall be designed to be turned off when not in use where security and safety is not a concern. This requirement shall be included in lighting plans submitted to the City as part of the improvement plans. Light fixtures for sports fields that are planned to be lighted shall be directed away from residential areas and roadways to reduce light spillover and glare. Light fixtures shall be designed to limit illumination to the sports fields and shall demonstrate that the illumination of adjacent residential properties will not exceed 1.0 foot-candles. These lighting requirements will be included in the Panhandle PUD Guidelines.</p>	LTS
<p>Impact 5.12-3: Cumulative visual resource impacts The project would convert the visual open space character of project area to suburban uses and would further extend suburban development conditions east of existing North Natomas Community. This would contribute to the cumulative conversion of open space and agricultural areas in the Sacramento metropolitan area. Overall, cumulative impacts to visual character would be significant and the project's contribution would be cumulatively considerable.</p>	CC	None required.	CC SU
5.13 Utilities			
<p>Impact 5.13-1: Wastewater and water supply facility impacts Implementation of the project would interconnect with existing water and wastewater infrastructure stub-outs along the project area boundaries and would not require off-site improvements. All on-site facilities have been evaluated throughout the resource chapters of this EIR. As a result, the project would have less-than-significant wastewater and water supply facility impacts.</p>	LTS	None required.	LTS
<p>Impact 5.13-2: Sufficient water supplies and groundwater overdraft impacts Implementation of the project would increase water supply demands in the City that would involve the use of both surface water and groundwater. Pursuant to the City's 2015 Urban Water Management Plan, the City has adequate water supplies to serve the project under normal, dry, and multiple-dry year conditions. The City would maintain groundwater</p>	LTS	None required.	LTS

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Table 2-1 Summary of Impacts and Mitigation Measures

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
production within the sustainable yields of the North Basin. This impact would be less than significant.			
Impact 5.13-3: Wastewater treatment capacity impacts The project's wastewater treatment demands would be within the wastewater treatment capacity of the SRWTP. No additional treatment facilities would be required. This impact would be less than significant.	LTS	None required.	LTS
Impact 5.13-4: Solid waste service impacts Implementation of the project would require solid waste disposal services from the City during construction and operation of the project. There is adequate landfill capacity to accommodate the project at build-out. This impact would be less than significant.	LTS	None required.	LTS
Impact 5.13-5: Cumulative water supply impacts Implementation of the project in combination with potential development in the City's service area and wholesale water customers would further increase the demand for water service. Pursuant to the City's 2015 Urban Water Management Plan, there would be adequate water supply to meet anticipated water demands through the year 2040. This is a less-than-significant cumulative impact and the project's cumulative demands would not be considerable such that new significant cumulative impact would occur.	NC	None required.	NC
Impact 5.13-6: Cumulative wastewater service impacts Implementation of the project in combination with potential development in the SRCSD's service area would increase wastewater service demands. The SRWWTP has adequate capacity to accommodate projected future growth based on its current permits. This would be a less-than-significant cumulative impact and the project's cumulative demands would not be considerable such that new significant cumulative impact would occur.	NC	None required.	NC
Impact 5.13-7: Cumulative solid waste service impacts Implementation of the project in combination with development in the City and in the County would increase solid waste collection and disposal service demands. There is adequate landfill capacity to accommodate cumulative solid waste disposal needs. This is a less-than-significant cumulative impact and the project's cumulative demands would not be considerable such that new significant cumulative impact would occur.	NC	None required.	NC

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Table 2-1 Summary of Impacts and Mitigation Measures

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
<p>5.14 Energy</p>			
<p>Impact 5.14-1: Wasteful, inefficient, or unnecessary consumption of energy, during project construction or operation The project would increase electricity and natural gas consumption at the site relative to existing conditions. However, City Code would require the project to generate at least 15 percent of the project’s energy demand through on-site renewable systems (e.g., photovoltaic systems). The project would be required to meet the California Code of Regulations Title 24 standards for building energy efficiency. The project’s design features bicycle and pedestrian infrastructure also would decrease VMT. Implementation of mitigation measures addressing greenhouse gases and transit needs would also improve the energy efficiency of the project. Construction energy consumption would be temporary and would not require additional capacity or increased peak or base period demands for electricity or other forms of energy. The project would not result in wasteful, inefficient, or unnecessary consumption of energy. Thus, the impact would be less than significant.</p>	LTS	None required.	LTS
<p>Impact 5.14-2: Demand for energy services and facilities Adequate infrastructure and capacity exists adjacent to the project area that can meet the project’s energy needs. Thus, this impact would be less than significant.</p>	LTS	None required.	LTS
<p>Impact 5.14-3: Cumulative demand for energy services and facilities The project, in combination with other development, would contribute to the increase demand for energy. However, it is expected that there would be adequate energy capacity through the year 2050. The project also includes design features to reduce transportation energy demands. Implementation of mitigation measures proposed would further improve the energy efficiency of the project and reduce its contribution to cumulative energy needs. Therefore, the project’s contribution to cumulative energy demands would not be cumulatively considerable.</p>	NCC	None required.	NCC
<p>6 Reorganization</p>			
<p>Impact 6-1: Loss of affordable housing Existing housing in the project area is limited to two existing residential dwellings on the Krumenacher Ranch site that are not proposed to be removed as part of this project. The project is required to comply with Chapter 17.712 of the City’s Planning and Development Code that addresses affordable housing provision. Therefore, the project would have no impact involving the loss of affordable housing.</p>	LTS	None required.	LTS

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Table 2-1 Summary of Impacts and Mitigation Measures

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
<p>Impact 6-2: Impacts to the Natomas Fire Protection District Detachment of the project area from the Natomas Fire Protection District would not result in significant service impacts to the District because this area is already being served by the City of Sacramento Fire Department under contract to the District. Therefore, project's impacts to the Natomas Fire Protection District would be less than significant.</p>	LTS	None required.	LTS
<p>Impact 6-3: Impacts related to an increase in demand for fire protection services in the City Annexation of the project into the City would increase the demand for City fire protection services. However, additional tax revenue and implementation of Mitigation Measures 5.10-1a, 5.10-1b, and 5.10-1c would address this additional service demand. Therefore, the project's impacts to City fire protection services would be less than significant.</p>	LTS	None required.	LTS
<p>Impact 6-4: Impacts to Rio Linda Elverta Recreation and Park District Detachment of the project area from the Rio Linda Elverta Recreation and Park District would not result in significant service impacts to the District because this area does not currently contain any park facilities or residents that generate demand and revenue to the District. Therefore, project's impacts to the Rio Linda Elverta Recreation and Park District would be less than significant.</p>	LTS	None required.	LTS
<p>Impact 6-5: Impacts related to an increase in demand for park and recreation services provided by the City Annexation of the project would result in an increase in the demand for park and recreation facilities provided by the City. The project would meet the City's requirements for parkland through parkland dedication and/or payment of in-lieu fees and would provide additional tax revenue. Therefore, the project's impacts on recreation facility demands would be less than significant.</p>	LTS	None required.	LTS
<p>Impact 6-6: Impacts to Sacramento County Water Agency Zone 13 Detachment of the project area from Sacramento County Water Agency Zone 13 would not result in significant drainage service impacts because Zone 13 was established for the funding of water supply and drainage studies and does not include the maintenance of drainage facilities. Therefore, project's impacts to Sacramento County Water Agency Zone 13 would be less than significant.</p>	LTS	None required.	LTS
<p>Impact 6-7: Impacts to Sacramento County Service Area No. 1 and 10</p>	LTS	None required.	LTS

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Table 2-1 Summary of Impacts and Mitigation Measures

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
<p>Detachment of the project area from Sacramento County Service Area No.1 (street and highway lighting) and No. 10 (enhanced transportation services) would not result in significant roadway facility service impacts because the project area is undeveloped and does not pose current transportation facility service impacts. Therefore, project's impacts to Sacramento County Service Area No. 1 and 10 would be less than significant.</p>			
<p>Impact 6-8: Impacts related to an increase in demand for drainage and flood control services Annexation of the project would result in an increase in the drainage and flood control activity by the City. The project would meet the City's requirements for drainage control with on-site detention facilities, and implementation of Mitigation Measures 5.8-1, 5.8-2, and 5.8-3 would ensure that the project design addresses drainage and flood control needs. Therefore, the project's impacts on drainage facilities would be less than significant.</p>	LTS	None required.	LTS
<p>Impact 6-9: Loss of prime agricultural lands Annexation of the project area would allow development and the loss of prime agricultural lands as defined by Section 56064 of the Cortese-Knox-Hertzberg Local Government Reorganization Act. The project would participate in the Natomas Basin Habitat Conservation Plan that would require the preservation of land in relation to the development of the project area. This land preservation would address the loss of prime agricultural lands under Sacramento LAFCo's jurisdiction. Therefore, the project's impact would be less than significant.</p>	LTS	None required.	LTS
<p>Impact 6-10: Loss of open space land uses Annexation of the project area would allow urbanization and the loss of open space lands as defined by Section 56059 of the Cortese-Knox-Hertzberg Local Government Reorganization Act. The project would participate in the Natomas Basin Habitat Conservation Plan that would require the preservation of land in relation to the development of the project area. This land preservation would address the loss of open space lands under Sacramento LAFCo's jurisdiction. Therefore, the project's impact would be less than significant.</p>	LTS	None required.	LTS
<p>Impact 6-11: Impacts related to environmental justice The project would consist of a variety of single-family residential densities and is required to comply with Chapter 17.712 of the City's Planning and Development Code that addresses affordable housing provision. There are no existing or proposed uses in the</p>	LTS	None required.	LTS

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Table 2-1 Summary of Impacts and Mitigation Measures

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
project area that would expose any existing or proposed residents in the area to one or more environmental hazards. Therefore, the project's impact would be less than significant related to environmental justice concerns.			
<p>Impact 6-12: Impacts related to consistency with Sacramento Local Agency Formation Commission policies and standards</p> <p>The project would generally be consistent with Sacramento Local Agency Formation Commission standards associated with annexation requests that address environmental issues as set forth in its <i>Policy, Standards and Procedures Manual</i>. Therefore, the project's impact would be less than significant.</p>	LTS	None required.	LTS

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3 PROJECT DESCRIPTION

3.1 PROJECT LOCATION

The City of Sacramento is in Sacramento County in the north-central portion of the central valley of California (see Exhibit 3-1). The Panhandle Reorganization (annexation and related detachments) and Planned Unit Development (PUD) (referred to as Panhandle Annexation and PUD project) project area is located within the North Natomas Community Plan (NNCP) planning area, which encompasses approximately 7,438 acres in the City and 1,600 acres in unincorporated Sacramento County (see Exhibit 3-2). The NNCP is bounded by Steelhead Creek (Natomas East Main Drainage Canal [NEMDC]) to the east, Interstate 80 (I-80) to the south, the West Drainage Canal, Fisherman's Lake, and State Route 99/State Route 70 (SR 99/70) to the west, and West Elkhorn Boulevard¹ to the north (see Exhibit 3-2). Regional access to and from the area is provided by Interstate 5 (I-5), I-80 and SR 99/70, along with numerous existing local roads.

The Panhandle PUD project area (referred to as "project area") comprises approximately 589.4 acres in the City's Sphere of Influence between West Elkhorn Boulevard on the north and Del Paso Road to the south. The project area is within the 2035 General Plan Update Policy Area.

3.2 PROJECT BACKGROUND

The original project was initiated by the City on September 12, 2000 through the adoption of Resolution 2000-734 that commenced City activities to annex the Northern and Southern Portions of the Panhandle area (1,424.7 acres) into the City. That project consisted of a PUD for the Northern Portion to allow for up to 3,075 dwelling units, 24.3 acres of commercial uses, and 108 acres of parks and open space. No development was proposed for the Southern Portion, which was largely built-out. Entitlements requested for the original project included a Sacramento Local Agency Formation Commission (LAFCo) reorganization (annexation to the City and associated detachments from various service providers), City of Sacramento General Plan amendments, amendments to the NNCP and to the City of Sacramento Zoning Ordinance, pre-zoning/re-zoning, and other related agreements.

The City prepared and circulated a Draft EIR in 2006 and prepared a Final EIR in 2007. However, the EIR was not certified and the project was not approved. Subsequent to that time, the U.S. Army Corps of Engineers (USACE) had decertified the levee system protecting the Natomas Basin, and the Federal Emergency Management Agency (FEMA) remapped the Natomas Basin in 2008. The area was reclassified as within the 100-year flood hazard zone (AE Zone), and the City imposed a moratorium on new development in Natomas. Following FEMA redesignation, the Sacramento Area Flood Control Agency and USACE began levee improvements in 2007. The basin is now mapped as Zone A99 (areas subject to inundation by a 1-percent-annual-chance flood event but that will ultimately be protected by completion of an under-construction federal flood protection system). In 2015, the City began processing applications for projects in the Natomas Area.

¹ West Elkhorn Boulevard is also referred to as "Elkhorn Boulevard" in some instances in the Draft EIR.

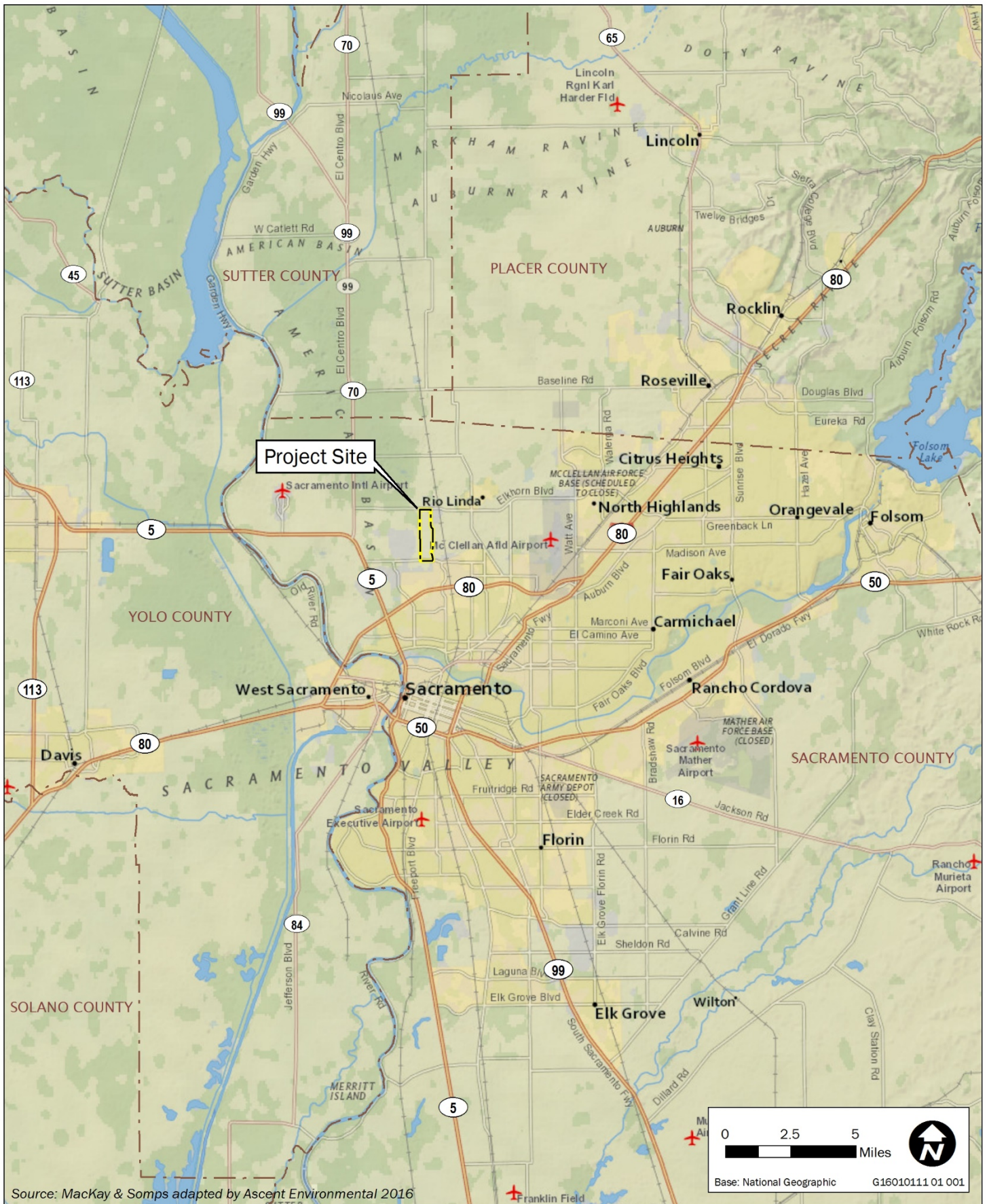


Exhibit 3-1

Regional Location Map



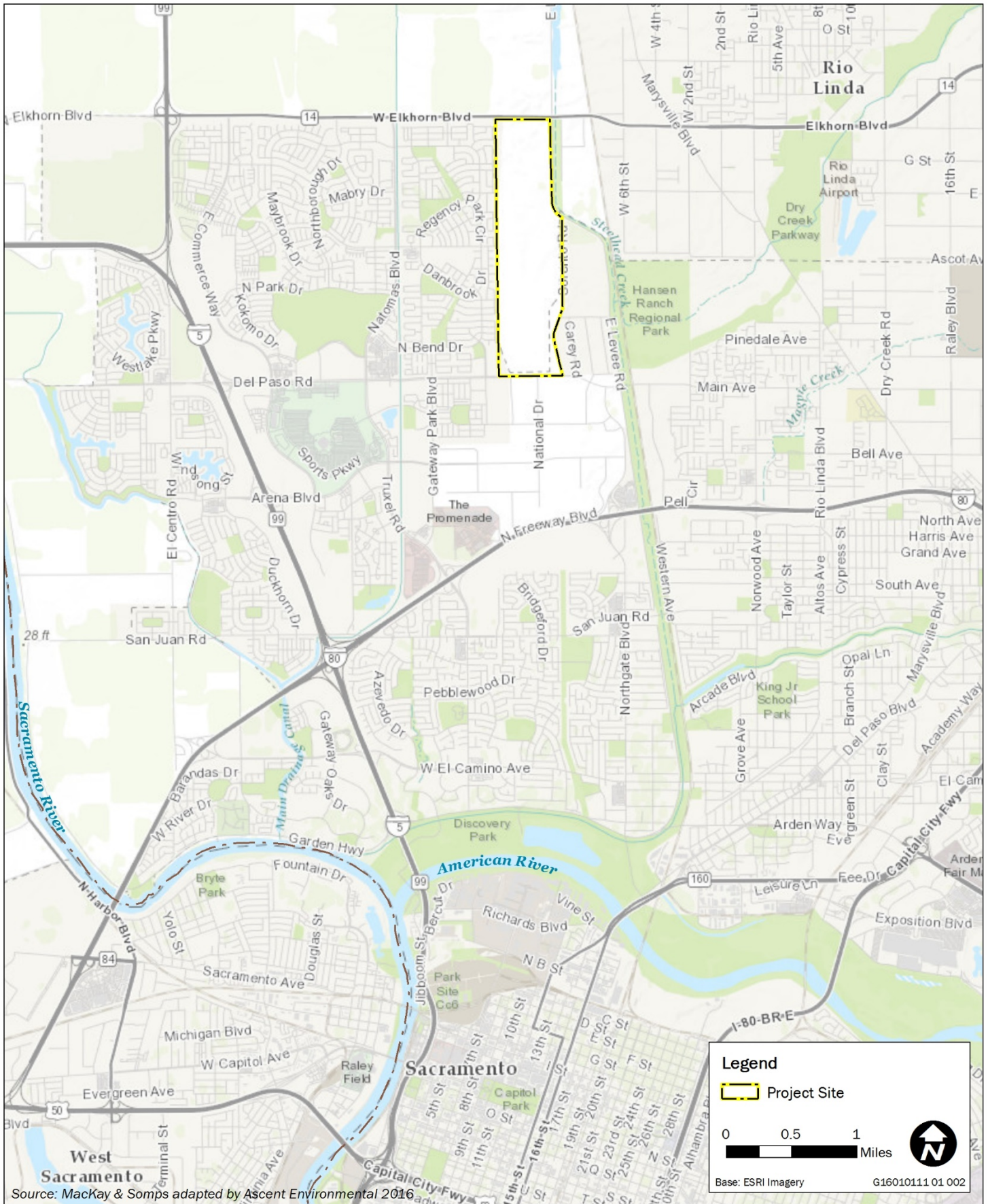


Exhibit 3-2

Project Location Map



3.3 EXISTING CONDITIONS

3.3.1 Panhandle Project Area

A majority of the project's land area is vacant. Built features on-site include two existing home sites located near West Elkhorn Boulevard, high-voltage power lines consisting of two sets of steel lattice towers supporting double-circuit 230 kilovolt (kV) lines owned by the Western Area Power Administration (WAPA) and a 115-kV line owned by Sacramento Municipal Utility District (SMUD) within a 200-foot powerline easement, and the partially constructed East Natomas Education Complex (junior and senior high schools in the Twin Rivers Unified School District) that is not being utilized (see Exhibit 3-3). Habitat conditions in the undeveloped areas include annual grasslands, pasture, and wetland resources, and a few clusters of mature trees. The project area is designated Planned Development (PD) under the adopted City of Sacramento 2035 General Plan. The Sacramento County General Plan land use designation is Agricultural Cropland.

3.3.2 Surrounding Land Uses

Exhibit 3-3 shows an aerial view of the project area and surrounding land uses. Large-scale land use activities adjacent to the project area to the northeast includes rock material stockpiling and trucking operations. East of the project area and Natomas East Main Drainage Canal (NEMDC) in the unincorporated County, an asphalt plant and other light industrial uses exist. Within the City limits are rural residential uses located to the east of Sorrento Road. To the south are the commercial and industrial uses; to the west are residential uses such as the Natomas Park and Regency Park neighborhoods; and to the north are agriculture and grazing land associated with the unincorporated County.

Please refer to Chapter 4, Land Use Planning, Population, and Housing, for more detailed information about the specific surrounding uses and adopted plans.

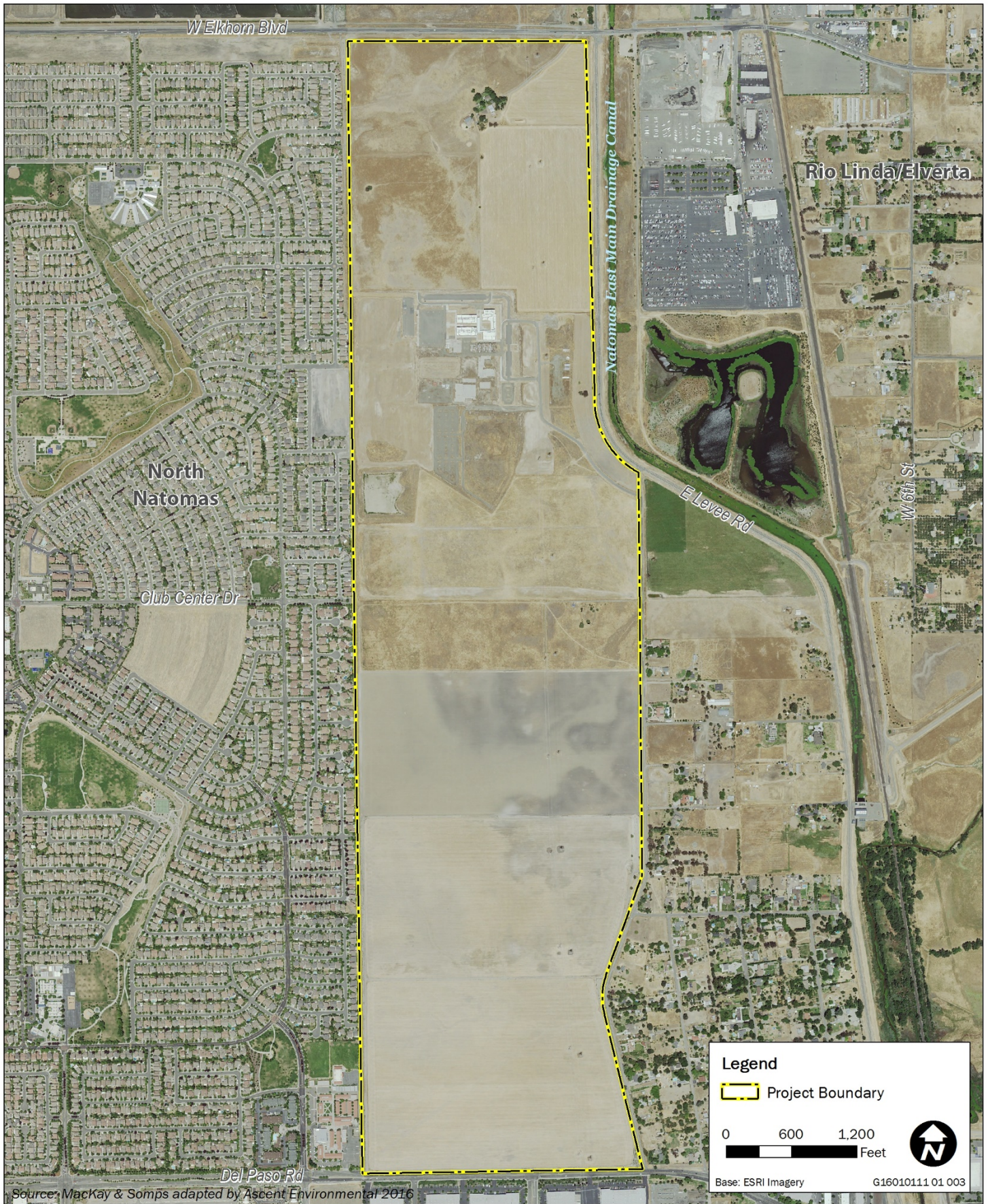
3.4 PROJECT OBJECTIVES

The City of Sacramento has identified the following project objectives for the annexation:

- ▲ promote a logical and reasonable extension of the City boundaries as this area is immediately adjacent to existing City limits, and
- ▲ promote more efficient provision of municipal services for existing and future development in the project area.

The project objectives of the Panhandle PUD are:

- ▲ optimize the land use potential of an infill location in the City by providing a mix of residential, commercial, park, open space, and school uses;
- ▲ build a community that implements the goals and objectives of the General Plan and NNCP;
- ▲ create a community with a park system incorporating park facilities with local and regional-connecting open space amenities that are accessible to residents and the public;
- ▲ provide a safe and efficient circulation system that interconnects uses, promotes pedestrian circulation, and minimizes impacts to rural uses east of the project area; and
- ▲ Create a community that makes efficient use of land while offering residential housing densities that transition from urban densities of the existing North Natomas Community to the west to the existing large-lot and rural densities to the east.



Source: MacKay & Soms adapted by Ascent Environmental 2016

Exhibit 3-3

Existing Conditions



3.5 PROJECT COMPONENTS

3.5.1 Project Summary

The project consists of the annexation of 589.4 acres into the City, amendment to the 2035 General Plan, pre-zoning/rezoning of the project area, establishment of the Panhandle PUD master parcel map, tax exchange agreement, development agreement, Mixed Income Housing Strategy, and site plan and design review of the master parcel map. The approval of the project would result in the development of the private, horizontal mixed-use development consisting of residential, commercial, elementary school, roadways, and park uses north of Del Paso Road. Table 3-1 provides a summary of the proposed land uses, general plan designations, and zoning. Exhibit 3-4 shows the proposed land use plan.

The remaining 119 acres between the proposed PUD project area and extending north to West Elkhorn Boulevard (referred to herein as “Krumenacher Ranch”) would be designated as PD and zoned Agriculture (A) (see Table 3-1). It is not included in the Panhandle PUD and no land use entitlements are being sought for this area.

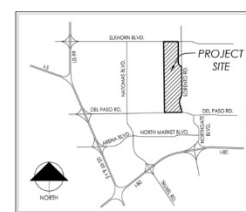
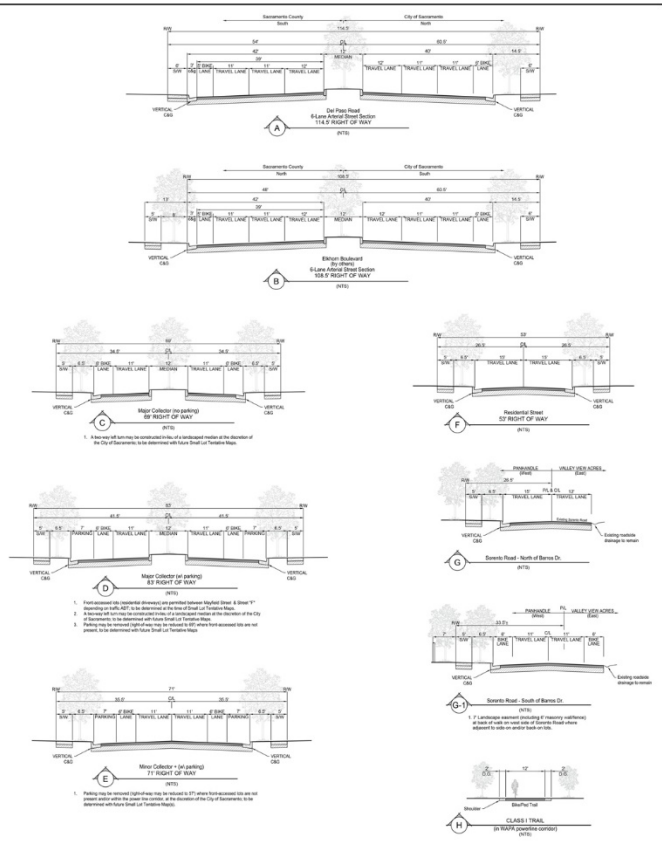
While initially identified as part of the project in the Notice of Preparation, the Southern Portion of the original application (referred to as the “pan”) is no longer proposed for annexation as part of this project action.

Table 3-1 Land Use Summary

Land Use Type	Net Acreage	Units	Proposed General Plan Designation	Proposed Pre-Zoning
Single-Family Residential				
Estate	100.7	452	Suburban Neighborhood Low Density (SNLD)	Single Unit Dwelling (R-1-PUD)
Traditional	121.8	728	Suburban Neighborhood Low Density (SNLD)	Single Unit or Duplex Dwelling (R-1A-PUD)
Compact	59.3	443	Suburban Neighborhood Low Density (SNLD)	Single Unit or Duplex Dwelling (R-1A-PUD)
Subtotal	281.8	1,623		
Commercial				
Suburban Center	9.7		Suburban Center (SC)	Limited Commercial (C-1-PUD)
Subtotal	9.7			
Public/Quasi-Public				
Elementary School	10.0		Suburban Neighborhood Low Density (SNLD)	Single Unit or Duplex Dwelling (R-1A-PUD)
Park/Ninos Parkway	22.1		Parks and Recreation (PR)	Agriculture-Open Space (A-OS-PUD)
Ninos Parkway	21.0		Parks and Recreation (PR)	Agriculture-Open Space (A-OS-PUD)
Detention Basin	13.4		Open Space (OS)	Agriculture-Open Space (A-OS-PUD)
Subtotal	66.5			
Planned Development				
Planned Development	119.0		Planned Development (PD)	Agriculture (A)
High School/Middle School	60.4		Suburban Neighborhood Low Density (SNLD)	Single Unit or Duplex Dwelling (R-1A-PUD)
Subtotal	179.4			
Roadways				
Major Collector and Residential Streets	52.0			-
TOTAL	589.4	1,623		

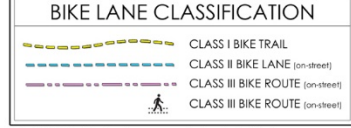


Source: MacKay & Somp 2017



LAND USE SUMMARY					
PUD Land Use*	General Plan	Zoning	Acres (G)	Acres (N)	Units
SNLD-E	SNLD (3.6 du/ac)	R-1	111.46	100.75	4325
SNLD-T	SNLD (4.3 du/ac)	R1-A	130.20	122.86	7285
SNLD-C	SNLD (3.6 du/ac)	R1-A	45.20	39.30	4438
Suburban Center	SC	CS-1	10.70	9.70	
Elementary School	SNLD (3.6 du/ac)	R1-A	11.75	10.26	
High School/Middle School	PR/A-OS	R1-A	48.08	40.48	
Park - Quincey	PR	A-OS	18.00	15.45	
Park - Ninos Parkway	PR	A-OS	7.75	6.65	
Open Space - Ninos Parkway	PR	A-OS	24.64	21.04	
Detention Basin - Open Space	PR	A-OS	13.40	13.40	
Planned Development (non-residential)	PD	A	120.00	119.00	
Major Roads (Del Paso Rd & E. Levee Blvd)	various		4.92	4.92	
Collector and Residential Streets	various		10.20	47.10	
TOTALS			589.44	589.44	1,423± DU

*SNLD = Suburban Neighborhood Low Density (Detached Single-Family Residential)
 E = Estate (4.3 du/ac; average net density)
 T = Traditional (3.0 du/ac; average net density)
 C = Compact (3.6 du/ac; average net density)



*Class I & II bike trail/lane locations are approximate and subject to change. Conceptual round-about/traffic circles, feasibility, location, and design to be determined with future Small Lot Tentative Subdivision Map(s).

While the Panhandle PUD includes 1,623 dwelling units, this Draft EIR conservatively evaluates the development of up to 2,660 dwelling units to factor the potential future development of the Krumenacher Ranch and changes in market conditions that could be anticipated as a result of annexation of the site (e.g., potential residential development under Suburban Center consistent with City's Planning and Development Code). The EIR also assumes that 101,277 square feet of commercial uses could be developed on the Suburban Center site, and 3,300 students would attend on-site schools.

3.5.2 Annexation

The project would involve annexation of the project area (589.4 acres) from Sacramento County into the City of Sacramento (see Exhibit 3-5). Approval by Sacramento LAFCo, a responsible agency under CEQA, would be required for the following associated reorganizations within the project area. These discretionary actions include:

- ▲ annexation to the City territory;
- ▲ detachment from Rio Linda Elverta Recreation and Parks District (RLERPD) (parks and recreation services);
- ▲ detachment from Natomas Fire Protection District (fire protection and emergency services); and
- ▲ detachment from Sacramento County Water Agency Zone 13 (water supply and drainage planning services);
- ▲ detachment from County Service Area No. 1 (street and highway lighting)
- ▲ detachment from County Service Area No. 10 (enhanced transportation services).

Potential environmental and policy issues associated with the proposed annexation and a creation of an unincorporated island (land area between Del Paso Road and Interstate 80 would remain in the sphere of influence) are addressed in Chapter 6.0 (Reorganization).

3.5.3 General Plan Amendments

Exhibit 3-6 and Table 3-1 show the proposed General Plan land use designations.

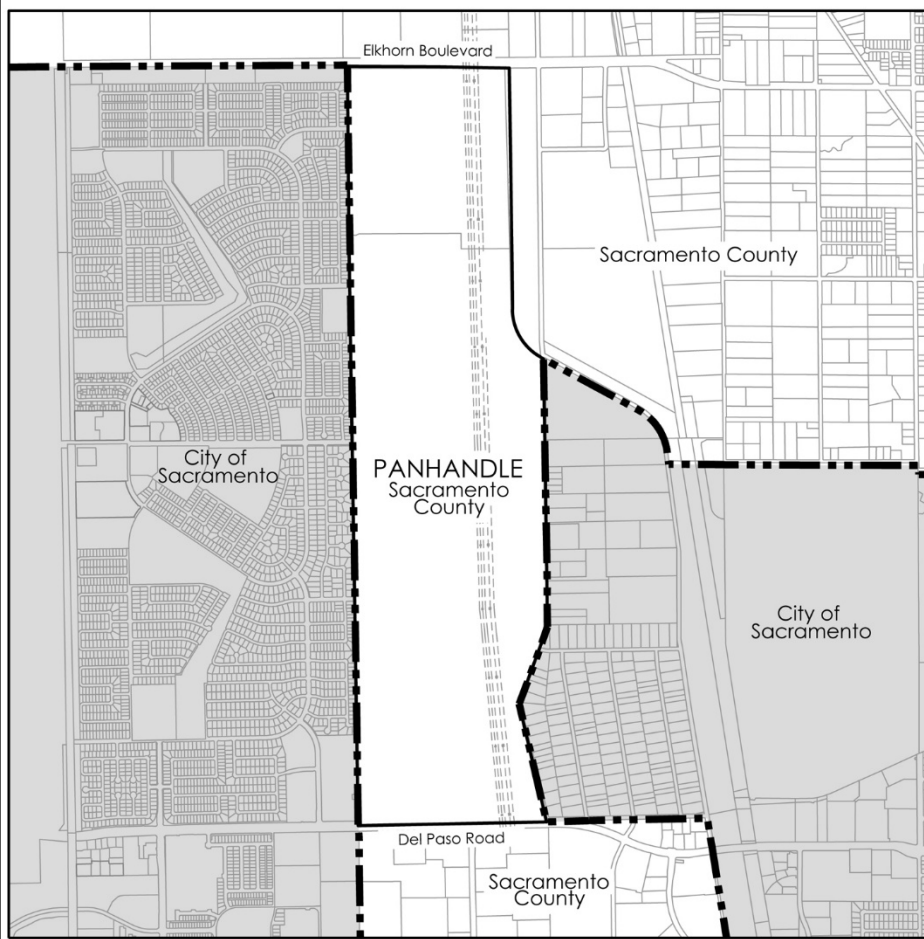
3.5.4 Pre-Zone/Rezone

Exhibit 3-7 and Table 3-1 show the proposed pre-zoning/rezoning, which would establish the following zoning for the project area:

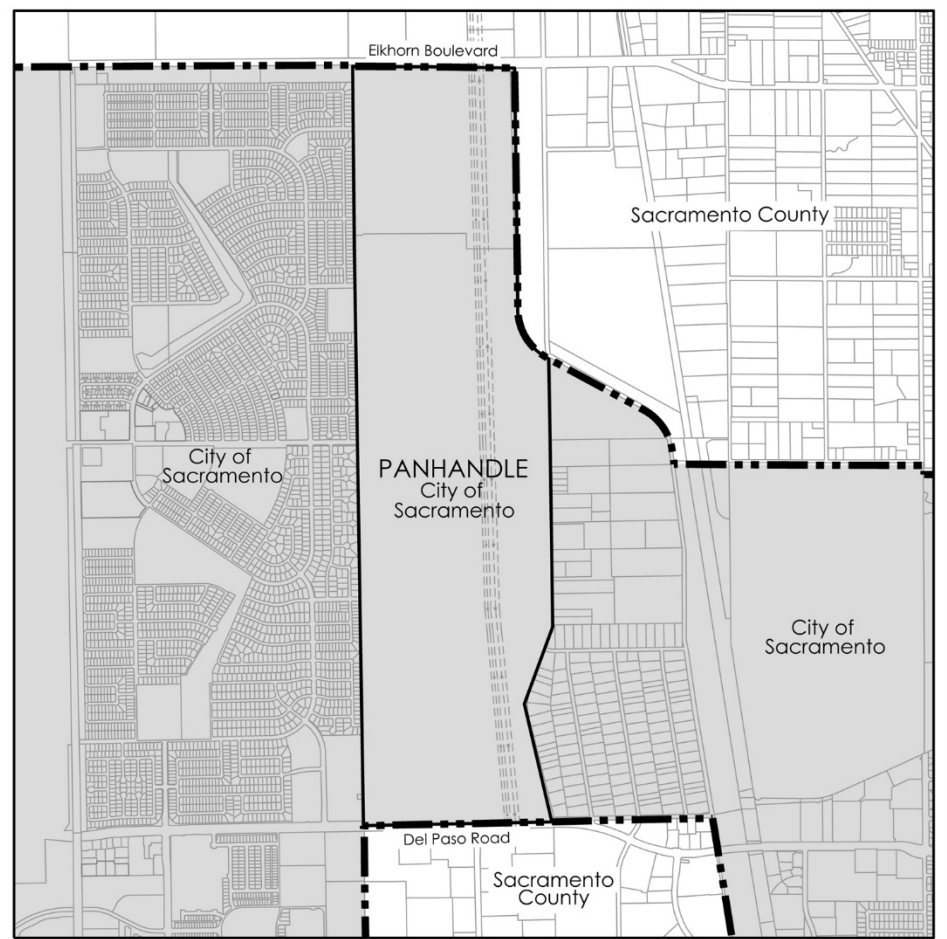
- ▲ Single Unit Dwelling Zone (R-1)
- ▲ Single Unit or Duplex Dwelling Zone (R-1A)
- ▲ Agriculture Zone (A)
- ▲ Agriculture-Open Space Zone (A-OS)
- ▲ Limited Commercial Zone (C-1)

3.5.5 Planned Unit Development

The project would establish the Panhandle PUD as provided for under Chapter 17.452 (Planned Unit Development Regulations) of the City's Planning and Development Code. The proposed Panhandle PUD Schematic Plan and the proposed development guidelines are in Appendix B. The guidelines for the Panhandle PUD establish the development framework and design guidance for the land uses. The guidelines supplement and, where noted, replace existing City zoning and development standards. The guidelines would apply to all future development applications within the project area.



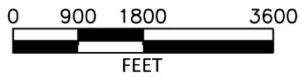
Existing City Limits, City of Sacramento



Proposed City Limits, City of Sacramento



NORTH



Source: MacKay & Soms 2016

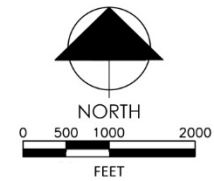
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Existing Sacramento County General Plan

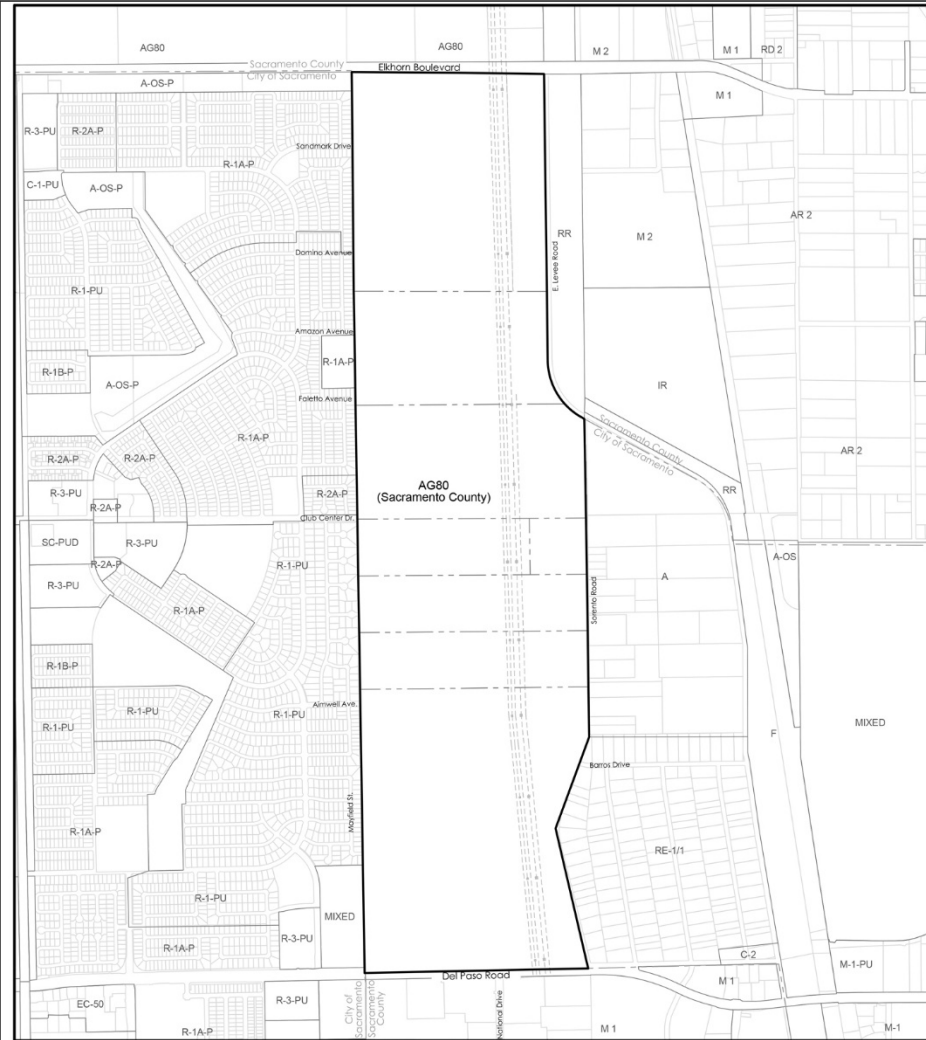
Proposed City of Sacramento General Plan

LAND USE SUMMARY			
General Plan Designation	Existing Acres County	Proposed Acres City	Delta
Agricultural Cropland	589.4±	0	(589.4)
SNLD	0	312.7±	312.7
SNLD (School)	0	77.2±	77.2
SC	0	11.5±	11.5
PR	0	64.1±	64.1
PD	0	123.9±	123.9
TOTAL	589.4±	589.4±	0



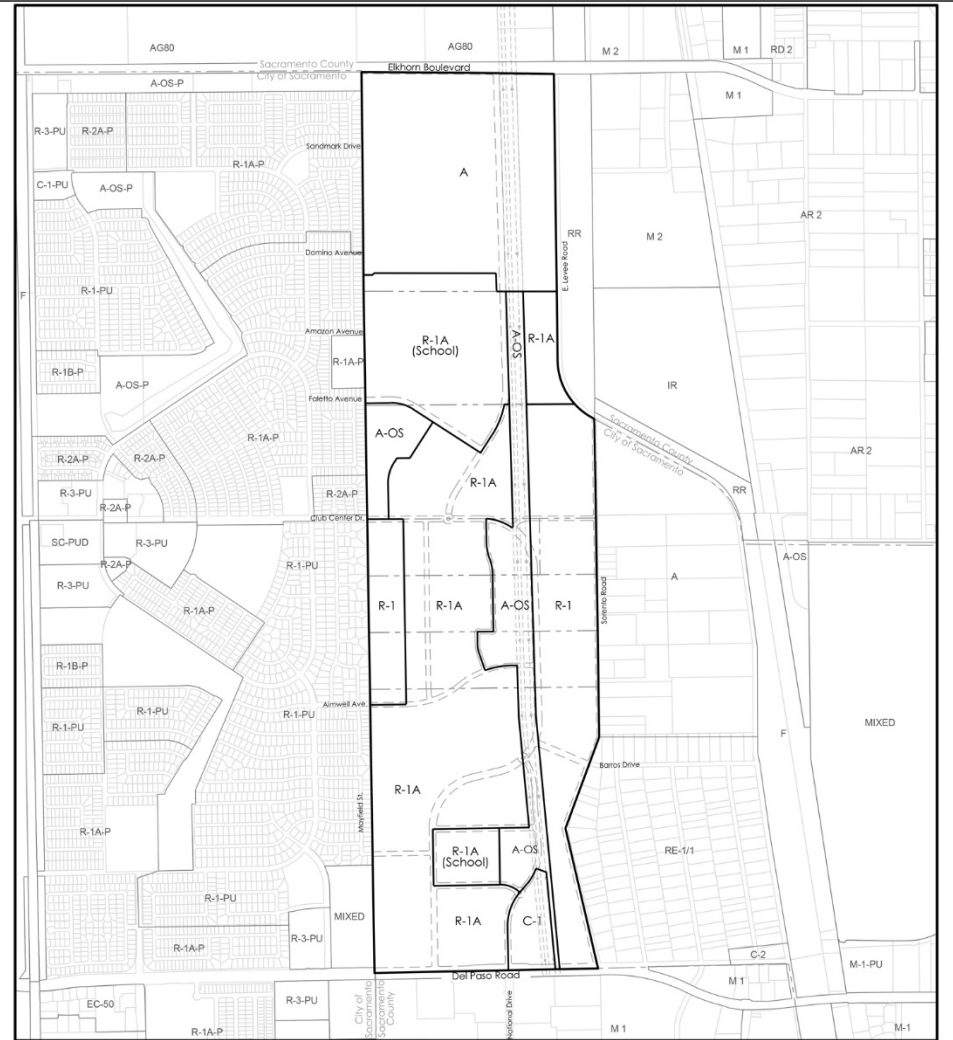
Source: MacKay & Soms 2017

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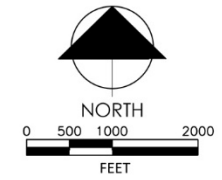


Existing Sacramento County Zoning

LAND USE SUMMARY			
Zoning Designation	Existing Acres County	Proposed Acres City	Delta
AG 80	589.4±	0	(589.4)
A	0	123.9±	123.9
A-OS	0	64.1±	64.1
R1	0	112.0±	112.0
R1-A	0	200.7±	200.7
C-1	0	11.5±	11.5
R1-A (School)	0	77.2±	77.2
TOTAL	589.4±	589.4±	0



Proposed City of Sacramento Zoning



Source: MacKay & Soms 2017

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Exhibit 3-7

Prezone-Rezone



The following is a description of land use and infrastructure improvement details under the PUD.

Residential

The Panhandle PUD includes development of single-family residential units with allowable densities ranging from three to eight dwelling units per net acre (du/na). The mix of lot size and densities would provide a variety of housing types:

- ▲ “Estate” with an average density of 4.5 du/na,
- ▲ “Traditional” lots would have an average density of 6 du/na, and
- ▲ “Compact” lots would have an average density of 7.5 du/na.

Commercial

The Panhandle PUD would include one commercial site (Suburban Center) consisting of 9.7 net acres. The allowable floor area ratio would be 0.15 to 2.0. Possible uses could include coffee shop/deli, restaurants, grocery store, drug store, convenience commercial uses (dry cleaners, salon, etc.), and financial services. While not currently proposed for residential development, the Suburban Center could provide for multi-family residential development ranging from 15 to 36 du/na.

Schools

The Panhandle PUD includes a 10-net acre elementary school site west of National Drive (in the southern part of the PUD) within the Robla School District. As noted above, the existing East Natomas Education Complex (junior and senior high schools in the Twin Rivers Unified School District) would be retained on-site. The completion and operation of the East Natomas Education Complex is not a component of the Panhandle PUD.

Parks and Open Space

The Panhandle PUD project would include 56 net acres of parks and open space uses consisting of park facilities (15.6 net acres), open space parkway (27.5 net acres) and detention areas (13.4 net acres). The Ninos Parkway would be situated in the eastern part of the PUD and would provide active and passive recreation opportunities and a trail system. No specific park amenities have been identified as part of the PUD.

Project Access/Circulation

As shown in Exhibit 3-4, roadway access to the PUD project area is available from Del Paso Road, Sorento Road, Mayfield Street, Aimwell Avenue, Club Center Drive, National Drive, Barros Drive, and Faletto Avenue.

Pedestrian and Bicycle Improvements

Exhibit 3-4 shows proposed sidewalk and bike lane improvements in the project area. As shown in Exhibit 3-8, these improvements would interconnect to regional bikeway facilities in North Natomas.

Public Utilities

Water Supply

The City would provide water supply service to the project area. The project area would connect to existing water pipelines located within Del Paso Road, Mayfield Street, Aimwell Avenue, Club Center Drive, Faletto Avenue, and Sorento Road. No offsite improvements would be required to provide water service to the project. A Water Supply Assessment (WSA) has been prepared and identified adequate water supplies for the project at build-out under normal, single-dry, and multiple dry year conditions. Further discussion and analysis of water supply is provided in Section 5.13, Utilities.

Wastewater

The Sacramento Regional County Sanitation District and Sacramento Area Sewer District provide wastewater treatment and conveyance service to most unincorporated areas of the County, which includes the project area. The project area is located within the Natomas North Trunk Shed area. Based on the project’s Sewer Master Plan, the project would connect to existing wastewater pipelines along the project area’s western

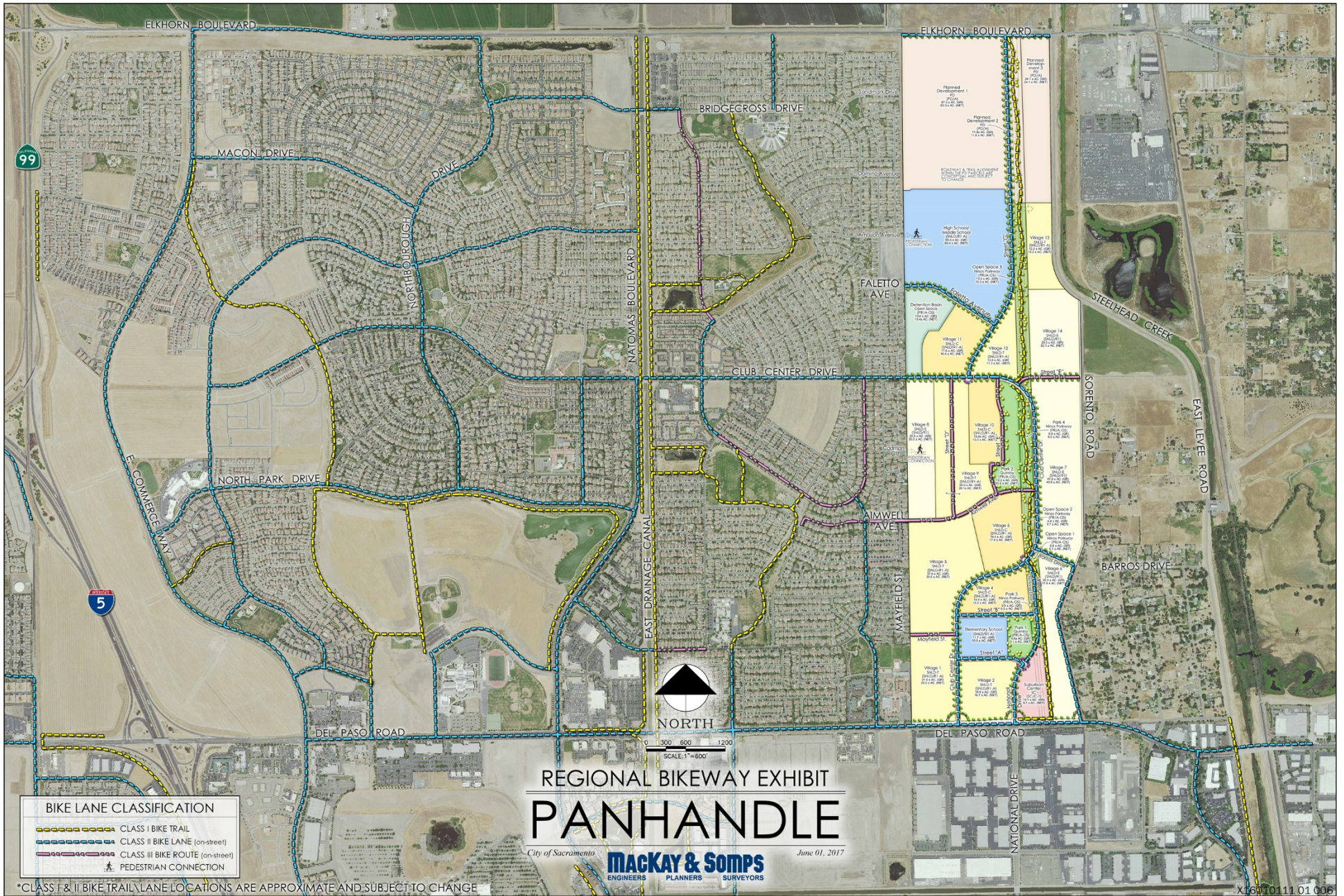


Exhibit 3-8

Regional Bikeway Connections



boundary at Sandmark Way (existing 10-inch diameter pipeline), Domino Avenue (existing 10-inch diameter pipeline), Faletto Avenue (existing 8-inch diameter pipeline), Aimwell Avenue (existing 21-inch diameter pipeline), and at Del Paso Road (existing 15-inch diameter pipeline). No offsite improvements would be required to provide wastewater conveyance service for the project.

Drainage

The primary drainage improvement for the project would consist of a 13.4 net-acre stormwater detention basin on the west side of the project area north of Club Center Drive (see Exhibit 3-4). The detention basin would provide storage to allow outflows to be metered at a reduced rate to discharge to existing twin 60-inch pipes that drain runoff from the site to the canal that runs parallel to Truxel Road, with no offsite improvements required. The detention basin would be sized to contain the 100-year, 10-day runoff volume assuming a maximum pumping rate of 0.10 cubic feet/acre for the project area as well as for the middle school/high school site in the PD area to the north. Water quality control features would also be incorporated in the basin design.

Dry Utilities

Telephone, cellular, internet and digital cable services would be through various providers. These facilities would be extended from existing infrastructure along Del Paso Road, Aimwell Avenue, Club Center Drive, and Sandmark Drive. No offsite utility improvements are anticipated to serve the project area.

Energy

Electric services would be provided by SMUD and natural gas would be provided by the Pacific Gas and Electric Company (PG&E). Electrical and natural gas facilities would be extended from existing infrastructure along Del Paso Road, Aimwell Avenue, Club Center Drive, and Sandmark Drive. No offsite improvements for electrical or natural gas service would be required for the project.

SMUD is proposing improvements to its electric system that would consist of a new double circuit 69-kilovolt aboveground powerline adjacent to the existing 200-foot powerline easement within the project. This new powerline is not a direct component of the project. However, it would provide electrical capacity and reliability to the area.

Tables 3-2, 3-3, and 3-4 provides a summary of anticipated energy use of the project.

Table 3-2 Project Construction Energy Consumption

Year	Diesel (Gallons)	Gasoline (Gallons)
2018	592,590	10,429,017
2019	490,915	14,961,712
2020	486,759	8,947,915
2021	484,434	8,905,781
2022	482,109	8,863,648
2023	482,109	8,863,648
2024	486,759	8,947,915
Total	3,505,615	69,919,636

Notes: Gasoline gallons include on-road gallons from worker trips. Diesel gallons include off-road equipment and on-road gallons from worker and vendor trips.

Source: Calculations by Ascent Environmental in 2017

Table 3-3 Mobile Energy Use: Gasoline and Diesel Consumption at Build-Out

Vehicle Category	Gasoline (gal/year)	Diesel (gal/year)
Passenger Vehicles	566,018	5,925
Trucks	584,746	328,115
Buses	12,994	15,182
Other Vehicles	3,026	598
Total (All Vehicle Types)	1,166,783	349,820

Notes: gal/year = gallons per year.
Source: Calculations by Ascent Environmental in 2017

Table 3-4 Project Operational Energy Consumption at Build-Out

Land Use/Energy Type	Energy Consumption	Units
Single Family Residential		
Electricity	23,522	MWh/year
Natural Gas	63,265	MMBtu/year
Suburban Center		
Electricity	1,184	MWh/year
Natural Gas	528	MMBtu/year
Elementary School		
Electricity	309	MWh/year
Natural Gas	611	MMBtu/year
Middle/High School		
Electricity	2,436	MWh/year
Natural Gas	4,809	MMBtu/year
All Land Uses		
Electricity	27,451	MWh/year
Natural Gas	69,213	MMBtu/year

Notes: MWh/year = megawatt-hours per year; MMBtu/year = million British thermal units per year.
Source: Calculations by Ascent Environmental in 2017

Project Energy Conservation Features

As shown in Exhibit 3-4, the project would include a neighborhood grid design that would provide a majority of the residential uses close access to project park and open space areas (i.e., within 880 feet). The Panhandle PUD would also provide new east-west roadway connections and new bicycle trails and facilities that would interconnect to existing neighborhoods in North Natomas (see Exhibits 3-4 and 3-8). These design features are intended to reduce vehicle miles traveled and associated mobile fuel use by the project.

The Panhandle PUD Guidelines include the following guidelines for sustainable building design that would reduce building energy use:

- ▲ use energy efficient lighting, cooling systems, and windows to promote natural ventilation;

- ▲ promote the use of natural ventilation through building orientation, window placement, architectural shade elements and landscape design;
- ▲ encourage the installation of Energy Star appliances and low-flow water fixtures;
- ▲ properly install drywall, insulation, and sealing to maintain the optimal temperature inside the home;
- ▲ use renewable and recyclable building materials wherever feasible; and
- ▲ implement an on-site construction waste recycling program to the extent feasible.

Section 5.14, “Energy,” provides further details on anticipated energy use associated with project construction, operation, and transportation.

3.5.6 Mixed Income Housing Strategy

The project would be required to pay a housing impact fee on all newly constructed market rate dwelling units pursuant to Section 17.712.050 of the City’s Planning and Development Code as well as prepare a Mixed Income Housing Strategy required under Section 17.712.030B. The Mixed Income Housing Strategy must demonstrate how the project provides housing for a variety of income and family types consistent with the City’s Housing Element.

3.5.7 Panhandle PUD Public Facilities Financing Plan

The Draft Panhandle PUD Public Facilities Financing Plan (PFFP) identifies the project’s fair share of improvements, other presently identified funding sources, such as the North Natomas Financing Plan (NNFP) and states that any remaining amount of the improvements is assumed to be borne by the project applicant.

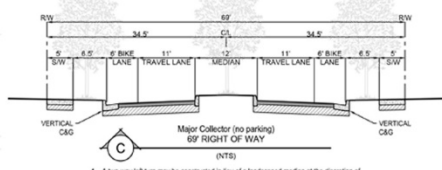
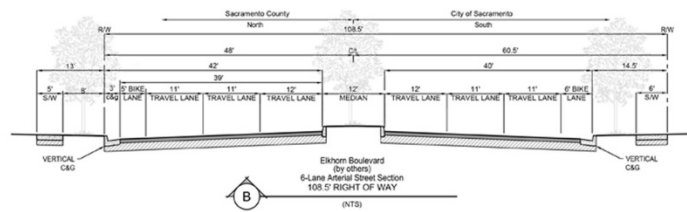
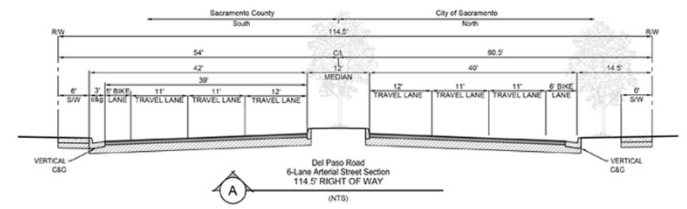
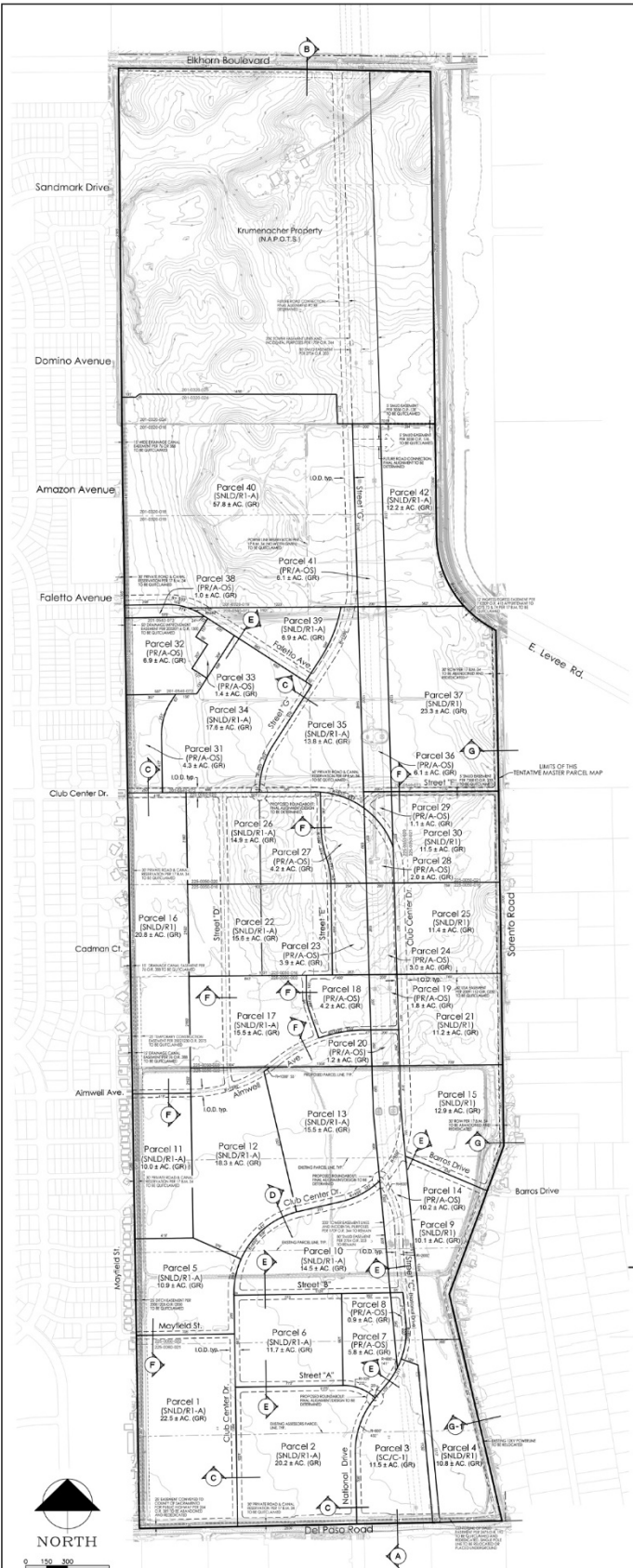
The Draft Panhandle PUD PFFP shows the summary of shared infrastructure items and the project’s allocated cost of each as well as presently-identified sources of funding from other sources of funding from other development projects.

3.5.8 Master Parcel Map

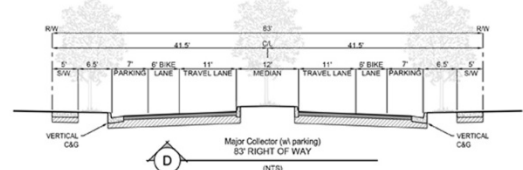
The project would include the approval of a master parcel map that would subdivide 465.5 acres of the project area into 42 large parcels (excluding Krumenacher Ranch) for future sale and subsequent development and tentative maps (see Exhibit 3-9).

3.5.9 Project Construction

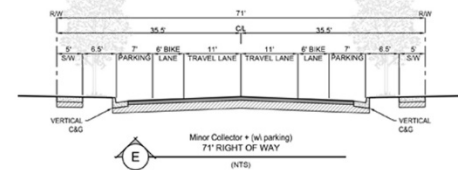
The proposed entitlements for the Panhandle Annexation and PUD do not include any requested actions that would provide for immediate development of the project area. Therefore, it is unknown when construction activities may start and the specific details regarding number of construction workers, grading activities, and construction equipment to be used. Construction equipment that is anticipated to be used may include, but not be limited to, bull-dozers, backhoes, dump trucks, graders, service vehicles, and trenchers. Section 5.2, “Air Quality,” and Section 5.9, “Noise,” describes assumptions for construction activities for purposes of the impact analysis.



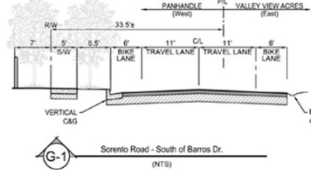
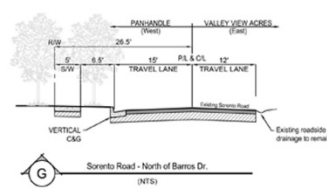
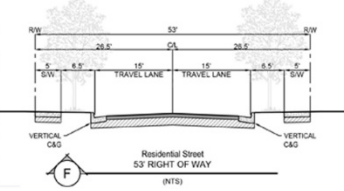
1. A two-way left turn may be constructed in-lieu of a landscaped median at the discretion of the City of Sacramento; to be determined with future Small Lot Tentative Maps.



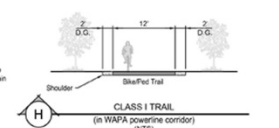
1. Front-accessed lots (residential driveways) are permitted between Mayfield Street & Street "F" depending on traffic A/T: to be determined at the time of Small Lot Tentative Maps.
2. A two-way left turn may be constructed in-lieu of a landscaped median at the discretion of the City of Sacramento; to be determined with future Small Lot Tentative Maps.
3. Parking may be removed (right-of-way may be reduced to 89') where front-accessed lots are not present; to be determined with future Small Lot Tentative Maps.



1. Parking may be removed (right-of-way may be reduced to 57') where front-accessed lots are not present and/or within the power line corridor; at the discretion of the City of Sacramento; to be determined with future Small Lot Tentative Maps(s).



1. 7' Landscape easement (including 6" masonry wall fence) at back of walk on west side of Sorenito Road where adjacent to side-on and/or back on lots.



Source: MacKay & Somp 2017

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Exhibit 3-9

Master Parcel Map



3.6 APPROVALS AND PERMITS

3.6.1 City Actions

City discretionary approvals required to implement the project include:

- ▲ certification of the EIR and adoption of the Mitigation Monitoring Plan,
- ▲ annexation into the City of Sacramento,
- ▲ General Plan Amendment,
- ▲ pre-zone/rezoning,
- ▲ establishment of the Panhandle PUD Guidelines and Schematic Plan,
- ▲ Tax Exchange Agreement,
- ▲ Development Agreement,
- ▲ Mixed Income Housing Strategy,
- ▲ Public Facilities Finance Plan
- ▲ Master Parcel Map,
- ▲ Site Plan and Design Review of the Master Parcel Map.

3.6.2 Sacramento LAFCo Actions

- ▲ Approval of the request for annexation and related reorganizations/detachments associated with service providers for the project area.

3.6.3 Other Responsible and Permitting Agencies

Responsible and permitting agencies are state and local public agencies, other than the lead agency, that have some authority over a project activity. This Draft EIR provides information to the following agencies to assist them in approval and/or permitting actions as they may apply to the project.

- ▲ State Water Resources Control Board: A Notice of Intent would need to be filed to obtain coverage under the General Construction Activity Storm Water Permit before project construction.
- ▲ Central Valley Regional Water Quality Control Board (RWQCB): RWQCB review and/or approval of any activity affecting waters of the United States/waters of the state pursuant to Section 401 of the federal Clean Water Act and the state Porter-Cologne Water Quality Control Act, respectively.
- ▲ USACE: Approval of any Section 404 permits required for the project.
- ▲ The Natomas Basin Conservancy (TNBC): TNBC implements mitigation for endangered species within portions of the Natomas Basin, subject to the requirements of the Natomas Basin Habitat Conservation Plan.
- ▲ California Department of Fish and Wildlife (CDFW): A Stream Alteration Agreement permit from the CDFW may be required under Section 1602 of the Fish and Game Code. Actions and approvals for state-listed species may also be necessary.
- ▲ Sacramento Metropolitan Air Quality Management District (SMAQMD): SMAQMD approval of dust control plans (authority to construct permit), and other permits may be necessary.

4 LAND USE, POPULATION, AND HOUSING

4.1 INTRODUCTION

The “Land Use, Population, and Housing” chapter of the EIR provides the reader with information regarding land use and planning issues that may arise from implementation of the Panhandle Annexation and Planned Unit Development project (project). This chapter identifies current General Plan land use and zoning designations for the project and the surrounding area. Section 15125(d) of the California Environmental Quality Act (CEQA) Guidelines states, “[...] the EIR shall discuss any inconsistencies between the proposed project and applicable general plans and regional plans.” The project is analyzed in this chapter for consistencies and/or potential inconsistencies with the land use policies of the City’s 2035 General Plan, the North Natomas Community Plan (NNCP), and the City’s Planning and Development Code. It is important to note that the final determination of project consistency with the 2035 General Plan is within the authority of the Sacramento City Council. Potential project inconsistencies with General Plan policies associated with significant environmental impacts are addressed in the technical sections of this EIR.

This chapter also identifies existing housing and population conditions and growth trends for the City, and how this project relates to City growth projections.

Pertinent comments received in response to the Notice of Preparation (NOP) (see Appendix A) regarding land use, population, and housing for the project are summarized below:

- ▲ loss of most of the previously designated eastern transmission line and rural estates buffer/nuisance mitigation provided in the 1994 NNCP and Sacramento Council of Government’s (SACOG) Blueprint Map;
- ▲ consistency of the project with the Sacramento Area Council of Governments (SACOG) 2016 Metropolitan Transportation/Sustainable Communities Strategy (MTP/SCS); and
- ▲ neighborhood and community compatibility issues.

These issues are addressed below.

4.2 EXISTING ENVIRONMENTAL SETTING

The following provides information on the existing land uses on the project area, as well as the surrounding land use designations, zoning, and City population and housing.

4.2.1 Existing Land Uses

The Panhandle PUD project area (referred to as “project area” or “Panhandle PUD”) is located within the NNCP planning area and comprises approximately 589.4 acres in the City of Sacramento (City) Sphere of Influence between West Elkhorn Boulevard¹ on the north and Del Paso Road to the south (see Exhibit 3-2 in Chapter 3, “Project Description,” of this Draft EIR).

Most the project’s land area is vacant. Built features on project area include two existing home sites located near West Elkhorn Boulevard, high-voltage power lines consisting of two sets of steel lattice towers supporting double-circuit 230-kilovolt (kV) lines owned by the Western Area Power Administration, a 115-kV

¹ West Elkhorn Boulevard is also referred to as “Elkhorn Boulevard” in some instances in the Draft EIR.

line owned by Sacramento Municipal Utility District within a 200-foot powerline easement, and the partially constructed East Natomas Education Complex (junior and senior high schools in the Twin Rivers Unified School District) that is not being utilized (see Exhibit 3-3 in Chapter 3, “Project Description,” of this Draft EIR). Habitat conditions in the undeveloped areas include annual grasslands, pasture and wetland resources, and a few clusters of mature trees.

The project area is identified by the following Sacramento County Assessor’s Parcel Numbers (APNs): 201-0320-018, -019, -024, and -025; 201-0540-071, -072, and -073; 225-0050-003, -016, -020, -021, and -022; and 225-0060-021.

4.2.2 Project Area Land Use Designations and Zoning

CITY OF SACRAMENTO 2035 GENERAL PLAN LAND USE DESIGNATION

The Sacramento 2035 General Plan designates the project area as Planned Development. This designation is applied to areas with pending projects that are in the development review process. Specific land use and urban form designations outlined in the City’s General Plan would be applied to these areas once planning is complete and the City has approved the development. For areas designated as Planned Development (PD), the City requires that regional and community benefits are achieved as the result of annexations and development approvals and that they are developed consistent with the General Plan’s vision and guiding principles and obtain a General Plan Amendment to designate the area consistent with the appropriate designations contained in the Land Use and Urban Design Element.

CITY OF SACRAMENTO ZONING

The City’s zoning regulations are contained the City’s Planning and Development Code (Title 17 of the City Code) and regulate the use of land, buildings, or other structures for residences, commerce, industry, and other uses required by the community. Additionally, the Planning and Development Code regulates the location, height, and size of buildings or structures, yards, courts, and open spaces, amount of building coverage permitted in each zone, and population density. No City zoning designation is provided for the project area as it is currently located outside of City of Sacramento.

SACRAMENTO COUNTY 2030 GENERAL PLAN LAND USE DESIGNATION

The project area is located within the unincorporated portion of Sacramento County. The Sacramento County General Plan land use designation for the project area is Agricultural Cropland. This designation represents agricultural lands most suitable for intensive agricultural activities, including row crops, tree crops, irrigated grains, and dairies. One single-family dwelling unit per 40 acres is also considered suitable in this area.

SACRAMENTO COUNTY ZONING

The project area is located within unincorporated Sacramento County. The Sacramento County Zoning designations for the project area is Agriculture 80 acres (AG-80). The Agriculture 80 acres’ zone primarily allows for farming operations of no less than 80 acres with no more than one residence per 80 acres.

4.2.3 Adjacent Land Uses

Exhibit 3-3 shows an aerial view of the project area and surrounding land uses.

Current land uses north of West Elkhorn Boulevard consist of grazing land and rice crops. This area is part of the 5,699-acre proposed Natomas North Precinct Master Plan.

Land uses to the east consist of the Natomas East Main Drainage Canal (NEMDC), rock material stockpiling, existing industrial land uses (John Taylor Fertilizer plant, Syar Concrete, and Granite Construction Company), Ueda Parkway, Wolf Ranch Wildlife Sanctuary, vacant land (some of which is currently being utilized for cattle grazing), and rural residential uses associated with Valley View Acres along Sorento Road. Some properties in Valley View Acres include limited animal husbandry activities primarily consisting of raising and breeding livestock and horses. Current land uses south of Del Paso Road consist of light industrial and commercial uses. Land uses west of project area consist of residential neighborhoods and a charter school site.

New proposed or approved large development projects in North Natomas include the following:

- ▲ Greenbriar (proposed modifications to the original approvals): Master planned community consisting of approximately 577 acres to be developed with 2,922 dwelling units, 28.6 net acres of commercial, 32.5 acres of parks and recreational uses, a 9.9-net-acre school site, and approximately 57.9 acres of open space buffers. This project is located northwest of the project area west of State Route 99 and north of Interstate 5.
- ▲ Natomas North Precinct Master Plan (proposed): Mixed-use master plan consisting of approximately 5,699 acres that would include residential (20,477 dwelling units), commercial, and public uses. This project is located directly north of the project area along West Elkhorn Boulevard.
- ▲ Innovate Corporate Center (approved and unbuilt): Expansion of the Arena Corporate Center, Site III that consists of 112.5 acres that would develop 505,695 square feet of office uses, hotel, and a parking garage. The Innovate Corporate Center is west of the project area located at the northeast corner of the intersection of East Commerce Way and Arena Boulevard.
- ▲ Natomas Central Planned Unit Development (approved and under construction): This project consists of approximately 398 acres and would result in the development of 2,533 dwelling units. The Natomas Central Planned Unit Development is located west of the project west of El Centro Road and south of Del Paso Road.
- ▲ Natomas Fountains (approved and unbuilt): Commercial/retail project that consists of the development of 115,960 square feet of uses on 12.54 acres. The Natomas Fountains project is southwest of the project area located north of the Truxel Road/Gateway Park Boulevard intersection.

4.2.4 Adjacent Land Use Designations and Zoning

CITY OF SACRAMENTO GENERAL PLAN LAND USE DESIGNATIONS

The surrounding City of Sacramento General Plan Land Use designations are shown in Exhibit 3-6 and described below.

Parks and Recreation

The Parks and Recreation (PRK) designation provides for passive and active recreational and related uses listed below. Land areas with this designation are located west of the project area within the existing developed area of North Natomas.

- ▲ parks (community and regional parks);
- ▲ greenways and trails;
- ▲ golf courses and commercial recreation facilities with an emphasis on outdoor; and
- ▲ compatible public, quasi-public, and selected special uses

Rural Residential

The Rural Residential (RR) designation is intended to provide “buffers” and serve as a physical transition between suburban neighborhoods and the City’s outer edges that abut open space. Land areas with this designation are located east of the project area and consist of the Valley View Acres community. Allowable uses are listed below.

- ▲ single-family detached residential uses normally associated with urban/rural interface areas that allow for 0.25 to 3.0 dwelling units per acre;
- ▲ accessory second units;
- ▲ limited neighborhood-serving commercial uses; and
- ▲ compatible public, quasi-public, and special uses.

Suburban Neighborhood Low

The Suburban Neighborhood Low (SNDL) designation provides for low intensity residential housing (3.0 to 8.0 dwelling units per acre) and neighborhood support uses listed below. Land areas with this designation are located west of the project area within the existing developed area of North Natomas as well as an undeveloped area located east of the project area.

- ▲ single-family detached dwellings;
- ▲ single-family attached dwellings (e.g., duplexes, triplexes, townhomes);
- ▲ accessory second units;
- ▲ limited neighborhood-serving commercial on lots three acres or less; and
- ▲ compatible public, quasi-public, and special uses.

Suburban Neighborhood Medium

The Suburban Neighborhood Medium (SNMD) designation provides for medium-density residential housing (7.0 to 17.0 dwelling units per acre) and neighborhood-support uses listed below. Land areas with this designation are located west of the project area within the existing developed area of North Natomas.

- ▲ small-lot single-family detached dwellings;
- ▲ small-lot single-family attached dwellings (e.g., duplexes, triplexes, townhomes);
- ▲ accessory second units;
- ▲ multifamily dwellings (e.g., apartments and condominiums);
- ▲ limited neighborhood-serving commercial on lots three acres or less; and
- ▲ compatible public, quasi-public, and special uses.

Public/Quasi-Public

The Public/Quasi-Public (PUB) designation provides for public and quasi-public uses listed below. Land areas with this designation are located west of the project area within the existing developed area of North Natomas.

- ▲ government buildings;
- ▲ public and private schools;
- ▲ schools/Colleges;
- ▲ hospitals;
- ▲ cemeteries;
- ▲ airports;
- ▲ transportation and utility facilities; and
- ▲ other compatible public, quasi-public uses.

CITY OF SACRAMENTO ZONING

The surrounding City of Sacramento Zoning designations are shown on Exhibit 3-7. The following description of zoning is based on the City's Planning and Development Code (Title 17, Division II and IV).

Planned Unit Development

The planned unit development (PUD) designation, associated with many of the zoning designations surrounding the project area, means the property is subject to the requirements of Title 17, Division IV, Chapter 17.452 (Planned Unit Development Regulations) of the City Code and the schematic plan and development guidelines adopted for the planned unit development, in addition to the indicated land use zone (underlying zone). A planned unit development designation constitutes an overlay zone. A planned unit development designation does not establish an underlying zone or expand the uses provided by a zoning classification.

Agricultural—Open Space-Planned Unit Development

The purpose of the Agricultural—Open Space (A-OS) zone is to ensure the long-term preservation of agricultural and open space land. This zone is intended to prevent the premature development of land to urban uses. Permitted uses, with specified limitations, consist primarily of agricultural, residential, commercial, and industrial. Land areas with this zoning consist of the North Natomas Community Plan buffer area along West Elkhorn Boulevard located west of the project area.

Rural Estates and Rural Estates with One Unit/Acre

The purpose of the Rural Estates (RE) zone is to accommodate very low density residential uses. It applies primarily to areas affected by high noise levels; areas within designated approach or clear zones around airports; areas within identified floodway and floodway fringe areas; and other areas where physical or safety considerations necessitate very low density residential use. The Rural Estates with One Unit/Acre (RE-1/1) zone indicates permitted use of one single-unit dwelling per acre. Permitted uses, subject to specified limitations, consist primarily of residential, commercial, and institutional. Land areas with this zoning are located east of the project area and consist of the Valley View Acres community.

Single-Unit or Duplex Dwelling-Planned Unit Development

The purpose of the Single-Unit or Duplex Dwelling (R-1A) zone is to permit single-unit or duplex dwellings on 2,900 square foot minimum lot sizes, whether attached or detached, at a higher density than is permitted in the R-1 zone. Dwellings that have no interior side yards, such as townhouses and rowhouses, are allowed. Permitted uses, with specified limitations, consist primarily of residential, community serving commercial, and institutional. Land areas with this zoning are located west of the project area within the existing developed area of North Natomas.

Single-Unit Dwelling- Planned Unit Development

The purpose of the Single-Unit Dwelling Zone (R-1) is to accommodate low-density residential uses composed of single-unit detached residences and duplex dwellings on corner lots (5,200 to 6,200 square feet lot size range). This zone may also include recreational, religious, and educational facilities as the basic elements of a balanced neighborhood. These areas should be clearly defined and without encroachment by uses not performing a neighborhood function. Permitted uses, with specified limitations, consist primarily of residential, community serving commercial, and institutional. Land areas with this zoning are located west of the project area within the existing developed area of North Natomas.

Multi-Unit Dwelling- Planned Unit Development

The purpose of the Multi-Unit Dwelling (R-2A) zone is to permit garden apartments and cluster housing on 2,500 square foot minimum lot sizes. This zone is regulated to minimize the ground area covered by structures and maximize open space. Permitted uses, with specified limitations, consist primarily of residential, community serving commercial, and institutional. Land areas with this zoning are located west of the project area within the existing developed area of North Natomas.

Limited Commercial – Planned Unit Development

The purpose of the Limited Commercial (C-1) zone is to provide for certain offices, retail stores, and commercial service establishments that are compatible with residential developments. This zone is intended to be applied to small lots that are surrounded by a residential neighborhood.

Agricultural Zone

The purpose of the Agricultural (A) zone is to restrict the use of land primarily to agriculture and farming. It is also considered an open space zone. Property in this zone will be considered for reclassification when proposed for urban development that is consistent with the general plan. Permitted uses, with specified limitations, consist primarily of agricultural, residential, commercial, and industrial. Land areas with this zoning are located east of the project area to the north of the Valley View Acres community.

SACRAMENTO COUNTY GENERAL PLAN LAND USE DESIGNATIONS

The surrounding Sacramento County General Plan Land Use designations include Agricultural Cropland, Natural Preserve, and Intensive Industrial (see Exhibit 3-6).

Agricultural Cropland

This designation represents agricultural lands most suitable for intensive agricultural activities, including row crops, tree crops, irrigated grains, and dairies. A single-family dwelling unit per 40 acres is also considered suitable in this area. Land areas in this designation are located north of the project area along West Elkhorn Boulevard.

Natural Preserve

The purpose of this designation is to identify critical natural habitat for priority resource protection. The designation includes riparian Valley Oak woodland and permanent or seasonal marshes with outstanding wildlife value. This designation shows Natural Preserve on both public and privately owned land. Land areas in this designation are located east of the project area and consist of the natural resources associated with the NEMDC.

Intensive Industrial

This land use designation allows for manufacturing and related activities including research, processing, warehousing, and supporting commercial uses, the intensive nature of which require urban services. Industrial Intensive areas are located within the urban portion of the county and receive an urban level of public infrastructure and services. Land areas in this designation are located east and south of the project area.

SACRAMENTO COUNTY ZONING

The surrounding Sacramento County zoning designations are shown in Exhibit 3-7 and described below.

Agricultural-80 Acres

The Agricultural-80 Acre (AG-80) zoning district permits one single-family residence per 80-acre parcel, all agricultural uses, and accessory dwellings for agricultural employees; most institutional uses are allowed with a use permit. The purpose of the AG zoning district is to promote long-term agricultural use and discourage premature and unnecessary conversion of agricultural land to urban uses. Land areas in this zone district are located north of the project area along West Elkhorn Boulevard.

Recreation Reserve-Flood

The Recreation Reserve (RR) zoning district permits agricultural, single-family residential, some agriculturally-related commercial, and some institutional uses, subject to the issuance of a conditional use permit. The minimum lot area is 20 acres and five acres per accessory dwelling unit. The Flood (F) Combining zoning district is intended to include all land covered by rivers, creeks, and streams and land

subject to flooding with within the unincorporated area of the County. Land areas in this zone district are located east of the project area and consist of the natural resources associated with the NEMDC.

Light Industrial

The Light Industrial (M-1) zoning district requires a minimum lot size of 6,000 square feet (sf) and many of the uses permitted are required to be carried out completely within an enclosed building or behind an enclosed solid wood or fenced area. M-1 zoning district is intended to provide for development of industrial uses which include fabrication, manufacturing, assembly, or processing of materials that for the most part are already in processed form and do not in their maintenance, assembly, manufacture, or plant operation create smoke, gas, odor, dust, sound, or other objectionable influences that might be obnoxious to persons conducting business or residing in this or any other zone. Land areas in this zone district are located east and south of the project area.

Heavy Industrial

The Heavy-Industrial (M-2) zoning district provides for more potentially objectionable industrial uses and requires a minimum lot size of 20,000 square feet. This zoning district provides for development of uses that include fabrication, manufacturing, assembly, or processing of raw materials and that may in their maintenance, assembly, manufacture, or plant operation create smoke, gas, odor, dust, sound, or other objectionable influences that might be obnoxious to persons conducting business or residing in this or any other zoning district. Land areas in this zone district are located east and south of the project area.

Interim-Agricultural Reserve

The Interim-Agricultural Reserve (IR) zoning district reserves agricultural land for industrial use at a future date and permits one single-family residence per 20-acre parcel. Land areas in this zone district are located east of the project area.

4.2.5 Housing and Population

CURRENT POPULATION

Per the California Department of Finance, the population of the City of Sacramento as of January 1, 2016, was estimated to be 485,683. As shown in Table 4-1, the population of the City of Sacramento has increased by over 19,195 residents in the past 6 years.

Table 4-1 City of Sacramento Population from 2010-2016

As of January ¹	Estimated Population
2016	485,683
2015	482,110
2014	477,613
2013	474,710
2012	472,264
2011	469,967
2010 ¹	466,488

¹ As of April 1, 2010

Source: State of California, Department of Finance, E-5 Population and Housing Estimates for Cities, Counties and the State – January 1, 2011- 2016. Sacramento, California, May 2013.

GROWTH RATES AND PROJECTIONS

As noted in the City of Sacramento 2013-2021 Housing Element, the Sacramento Area Council of Governments (SACOG) has made population projections for the City of Sacramento. The horizon for the population projections is to the Year 2035.

Table 4-2 lists the population projections made by SACOG for the City of Sacramento.

	2000	2010	2020	2035
Population	407,018	466,488	528,866	640,381
Growth Rate		1.4%	1.3%	1.3%

Source: SACOG Housing Element Data Profiles, November 2012; SACOG, May 2013; City of Sacramento, 2013; U.S. Census Bureau 1990, 2000, and 2010.

4.2.6 Current Housing

As of January 1, 2016, the City of Sacramento contains an estimated 192,029 housing units, of which 127,272 are single-family units, 61,563 are multi-family units, and 3,194 are mobile home units (State of California, Department of Finance 2016).

4.2.7 Future Housing Projections

The SACOG Regional Housing Needs Allocation (RHNA) for the City of Sacramento from January 2013 to October 2021 is 24,101 dwelling units (SACOG 2012) (see Table 4-3). SACOG's 2016 MTP/SCS estimates that the City will have 264,018 dwelling units by the year 2036 (2016 MTP/SCS Appendix E-3).

Income Group	Number of Units
Very Low	4,944
Low	3,467
Moderate	4,482
Above Moderate	11,208
Total	24,101

Source: SACOG Regional Housing Needs Plan 2013-2021, September 2012.

4.2.8 Household Income

Table 4-4 shows household income distribution in City of Sacramento in 2016. The estimated median household income in City of Sacramento was \$51,757 in 2016 (City of Sacramento 2016).

Table 4-4 City of Sacramento Household Incomes (2016)

Household Income	City of Sacramento Households
Less than \$10,000	14,835
\$10,000 to \$20,000	25,290
\$20,000 to \$30,000	18,821
\$30,000 to \$40,000	16,707
\$40,000 to \$50,000	15,387
\$50,000 to \$60,000	13,946
\$60,000 to \$75,000	18,042
\$75,000 to \$100,000	21,744
\$100,000 or more	41,761

Source: Applied Geographic Solutions 2016

As determined by the U.S. Department of Housing and Urban Development, very-low-income households are defined as earning a gross income of less than 50 percent of the median income (i.e., less than \$25,879 in City of Sacramento). Low-income households are defined as earning a gross income of more than 50 percent and less than 80 percent of the median income (i.e., between \$25,880 and \$41,405 in City of Sacramento). Moderate-income households are defined as earning a gross income of more than 80 percent and less than 121 percent of the median income. Therefore, a moderate-income household in City of Sacramento is one that earns between 41,405 and \$62,626 per year, which would include approximately 16 percent of the households in the City of Sacramento in 2016.

4.2.9 Employment

Between 2010 and 2016, the City and County of Sacramento unemployment rates consistently decreased (see Table 4-5). SACOG's 2016 MTP/SCS estimates that the City will have 360,585 jobs by the year 2036 (2016 MTP/SCS Appendix E-3).

Table 4-5 City and County Labor Force (not seasonally adjusted), 2010-2016

Year (Annual Average)	City of Sacramento			Sacramento County		
	Employment	Unemployment	Rate	Employment	Unemployment	Rate
2010	197,900	30,300	13.3%	597,000	86,100	12.6%
2011	197,900	28,900	12.8%	597,700	82,300	12.1%
2012	189,000	26,700	12.4%	608,400	71,800	10.6%
2013	192,700	22,200	10.3%	620,200	59,800	8.8%
2014	209,500	17,600	7.7%	632,500	50,000	7.3%
2015	213,700	14,500	6.4%	647,600	41,400	6.0%
2016 ¹	220,800	13,400	5.7%	669,200	38,200	5.4%

¹ As of September

Source: California EDD 2016

4.2.10 Jobs-to-Housing Ratio

The jobs-to-housing ratio of an area is a measure of the match between local employment opportunities and the availability of housing. The Sacramento County Housing Element 2013-2021 estimated a 0.89 jobs-to-housing ratio in 2008 that is projected to remain at this approximate level through 2020 and improve to 0.97 by 2035 (Sacramento County 2013: 5-14). Per the City of Sacramento 2035 General Plan Master EIR (2014), the jobs-to-household ratio for the City of Sacramento was 1.56 and the 2035 jobs-to-household ratio is anticipated at 1.48 ($386,215 / 260,669 = 1.48$).

4.3 REGULATORY BACKGROUND

4.3.1 Regional Regulations

SACRAMENTO COUNCIL OF GOVERNMENTS 2016 METROPOLITAN TRANSPORTATION PLAN/SUSTAINABLE COMMUNITIES STRATEGY

SACOG is an association of local governments in the six-county Sacramento Region that includes the City of Sacramento. SACOG provides transportation planning and funding for the region, prepares the region's long-range transportation plan, approves the distribution of affordable housing in the region, and assists in planning for transit, bicycle networks, and airport land uses.

The Blueprint Project was a regional effort by SACOG to build a consensus around a long-term vision for the growth and development of the Sacramento region. The Blueprint was adopted by the SACOG Board of Directors in December 2004 and is a voluntary framework for guiding future growth in the region. The Blueprint is not a policy document and does not regulate land use or approve or prohibit growth in the region. The Blueprint is intended by SACOG to be advisory and to guide the region's transportation planning and funding decisions (such as the development of the MTP/SCS).

The overall intent of the 2016 MTP/SCS is to improve regional transportation. The 2016 MTP/SCS links land use, air quality, and transportation needs. Goals of the MTP/SCS include shortening commute times, reducing traffic congestion, lessening dependence on automobiles, improving air quality, reducing greenhouse gas emissions, reducing vehicle miles traveled in the region, and providing for improved housing choices. While the MTP/SCS is not a land use plan, it does include assumptions for land use and development trends (2016 MTP/SCS Appendix E-3).

The Panhandle PUD is designated as "Blueprint Growth Footprint Not Identified for Development in the MTP/SCS Planning Period." MTP/SCS Appendix E-3 notes that the Panhandle PUD was not identified for growth in the MTP/SCS period because of its unincorporated status, infrastructure need, and potential flood and habitat issues.

4.3.2 Local Regulations

The following are the local government land use, population, and housing goals and policies relevant to CEQA review of the project.

CITY OF SACRAMENTO 2035 GENERAL PLAN

The City of Sacramento 2035 General Plan's Land Use and Urban Design and Housing Elements provide several goals and policies that are relevant to review of the project.

Land Use and Urban Design Element

Growth and Change

- ▲ Policy LU 1.1.8: Annexation Prior to City Services. Prior to the provision of City services to unincorporated areas, the City shall require those unincorporated properties be annexed into the city, or that a conditional service agreement be executed agreeing to annex when deemed appropriate by the City.

Citywide Land Use and Urban Design

- ▲ Policy LU 2.1.2: Protect Established Neighborhoods. The City shall preserve, protect, and enhance established neighborhoods by providing sensitive transitions between these neighborhoods and adjoining areas, and by requiring new development, both private and public, to respect and respond to those existing physical characteristics, buildings, streetscapes, open spaces, and urban form that contribute to the overall character and livability of the neighborhood.
- ▲ Policy LU 2.3.2: Adjacent Development. The City shall require that development adjacent to parks and open spaces complements and benefits from this proximity by:
 - preserving physical and visual access;
 - requiring development to front, rather than back, onto these areas;
 - using single-loaded streets along the edge to define and accommodate public access;
 - providing pedestrian and multi-use trails;
 - augmenting nonaccessible habitat areas with adjoining functional parkland;
 - extending streets perpendicular to parks and open space and not closing off visual and/or physical access with development; and
 - addressing the operations, maintenance, and public safety needs of the Local Maintaining Agencies.
- ▲ Policy LU 2.5.1: Connected Neighborhoods, Corridors, and Centers. The City shall require that new development, both infill and greenfield, maximizes connections and minimizes barriers between neighborhoods corridors, and centers within the city.

Neighborhoods

- ▲ Policy LU 4.1.8: Connections to Open Space. The City shall ensure that new and existing neighborhoods contain a diverse mix of parks and open spaces that are connected by trails, bikeways, and other open space networks and are within easy walking distance of residents.
- ▲ Policy LU 4.1.9: Neighborhood Street Trees. The City shall encourage the strategic selection of street tree species to enhance neighborhood character and identity and preserve the health and diversity of the urban forest.
- ▲ Policy LU 4.1.10: Family-Friendly Neighborhoods. The City shall promote the development of family-friendly neighborhoods throughout the city that provide housing that accommodates families of all sizes and provides safe and convenient access to schools, parks, and other family oriented amenities and services.
- ▲ Policy LU 4.2.1: Enhanced Walking and Biking. The City shall pursue opportunities to promote walking and biking in existing suburban neighborhoods through improvements such as:
 - introducing new pedestrian and bicycle connections;
 - adding bike lanes and designating and signing bike routes;

- narrowing streets where they are overly wide;
 - introducing planting strips and street trees between the curb and sidewalk; and
 - introducing traffic circles, speed humps, traffic tables, and other appropriate traffic-calming improvements.
- ▲ Policy LU 4.5.1: New Growth Neighborhoods. The City shall ensure that new residential growth areas include neighborhoods that maintain a mix of residential types and densities, and that the residential mix will provide appropriate transitional features that integrate the area with adjacent existing neighborhoods and development.

Public/Quasi-Public and Special Uses

- ▲ Policy LU 8.1.3: Adequate Sites. The City shall proactively seek to acquire land throughout the city to provide for adequate parks and public facilities, particularly in infill areas where available land is scarce.
- ▲ Policy LU 8.1.9: Co-location of Community Facilities. The City shall promote the co-location of parks, schools, police and fire facilities, health services, and other community facilities to support community interaction, enhance neighborhood identity, and leverage limited resources.

Open Space, Parks, and Recreation

- ▲ Policy LU 9.1.2: New Parks and Open Spaces. The City shall ensure that sufficient parks, open space, water corridor parkways, and trails are planned throughout the city, to ensure adequate facilities are available to existing and future residents.
- ▲ Policy LU 9.1.3: Connected Open Space System. The City shall ensure that new development does not create barriers to the connections among the various parts of the city's parks and open space systems.

Special Study Areas and Planned Development

- ▲ Policy LU 10.1.3: Regional and Community Benefits. The City shall require that regional and community benefits are achieved as the result of annexations and development approvals in any Special Study Area or Planned Development Area, consistent with the goals and policies outlined in this Plan. Examples include, but are not limited to, the following:
- A mix of land uses that results in a full range of jobs, housing, amenities, services, and open space, resulting in complete neighborhoods and dynamic centers that have strong linkages with the city and region.
 - Transportation systems, including transit and roadways that are substantially improved and expanded, in a manner that provides enhanced mobility for all sectors of the community and benefits regional air quality.
 - Sustainable infrastructure and community facilities, where adequate land is provided for such facilities, and construction and ongoing maintenance are funded by proposed development.
 - Conservation of open space, including important agricultural lands, sensitive habitat areas and wildlife corridors, and other non-urbanized areas that serve as buffers or "greenbelts" for public use.
 - Net fiscal benefits are achieved by both the City and County, with minimal impacts to affected special districts.
- ▲ Policy LU 10.1.4: Planned Development. The City shall require areas designated Planned Development on the Land Use and Urban Form Diagram be developed consistent with the General Plan's Vision and Guiding Principles and obtain a General Plan Amendment to designate the area consistent with the proposed project using the appropriate designations contained in the Land Use and Urban Design Element.

2013-2021 Housing Element

An important part of the Housing Element is the determination of the City's new housing construction need. Under California law (Government Code Section 65584), new housing construction need is determined, at a minimum, through a RHNA process. The City's RHNA is based on SACOG's Regional Housing Needs Plan. Under this plan, Sacramento must accommodate 24,101 new housing units between 2013 and 2021. Of these housing units, 4,944 should be affordable to households earning no more than 50 percent of median income, 3,467 to households earning between 50 percent and 80 percent of median income, 4,482 to households earning between 80 percent and 120 percent of median income, and 11,208 to households earning more than 120 percent of median income (City of Sacramento 2013: H 1-1).

Housing and population goals and policies relevant to CEQA review of the project are listed below.

- ▲ Policy H-1.1.1: Sustainable Housing Practices. The City shall promote sustainable housing practices that incorporate a "whole system" approach to siting, designing and constructing housing that is integrated into the building site, consume less energy, water, and other resources, and are healthier, safer, more comfortable, and durable.
- ▲ Policy H-1.2.2: Compatibility with Single Family Neighborhoods. The City shall encourage a greater variety of housing types and sizes to diversify, yet maintain compatibility with, single-family neighborhoods.
- ▲ Policy H-1.3.4: A Range of Housing Opportunities. The City shall encourage a range of housing opportunities for all segments of the community as part of the community.
- ▲ Policy H-1.3.5: Housing Type Distribution. The City shall promote an equitable distribution of housing types for all income groups throughout the city and promote mixed income neighborhoods rather than creating concentrations of below-market-rate housing in certain areas.
- ▲ Policy H-2.2.1: Quality Infill Development. The City shall promote quality residential infill development by maintaining and implementing flexible development standards.
- ▲ Policy H-2.2.7: Suburban Infill and Secondary Units. The City shall continue to support efforts to provide more varied housing opportunities in existing suburban neighborhoods through infill and intensification on existing available sites, by allowing secondary units on single-family lots, and allowing for additional development on excessively large lots.

4.3.3 North Natomas Community Plan

The project area is located within the northeast portion of the North Natomas Community Plan (NNCP) area and is designated as Planned Development. The updated NNCP was adopted in March 2015 as part of the last General Plan update and provides the framework for development of North Natomas through the plan's vision, guiding policies and implementing policies for land use, circulation, community services and facilities, and implementation programs. The NNCP's land use policies relevant to the project are provided below.

- ▲ Policy NN.LU 1.1: PUD Designation Required. All development in the plan area shall be designated as a Planned Unit Development (PUD) and shall include Schematic Plan and Development Guidelines for the PUD.
- ▲ Policy NN.LU 1.7: Neighborhoods–Open Space. The City shall ensure that at least 80 percent of the dwelling units are within 880 feet of open space (e.g., accessible public and private parks and parkways, drainage corridors, agricultural buffers, golf courses, lakes, and other open space opportunities). The 880-foot access standard is calculated based on actual walking routes rather than radius.

- ▲ Policy NN.LU 1.9: Housing Type Diversity. To provide housing for the wide range of residents in the North Natomas Community, the City shall ensure residential developers provide a variety of housing types in each neighborhood. As a guideline to ensure a variety of housing types, the maximum percentage of any dominant housing type should be 85 percent and the minimum of any minor housing type should be 5 percent. Residential developers are encouraged to be innovative and responsive to the changing lifestyles of future residents and trends toward transit, telecommuting, zero-emission vehicles, and others.
- ▲ Policy NN.LU 1.13: Upscale Housing. The City shall encourage residential developers to provide upscale housing through lower densities and additional amenities. Upscale housing is intended to attract move-up home buyers who wish to move to or remain in the Natomas area. Homes with custom-style features would help create a more diverse and interesting neighborhood. Custom-style features could include high-quality exterior building materials, larger lot sizes, and varied setbacks. Large lots would include those that are 6,500 square feet or larger. Other features included in upscale housing are architectural variations, quality landscaping, extra vehicle storage, homeowners associations, and other attractive marketing features.
- ▲ Policy NN.ERC 1.10: Agricultural Buffers. The City shall maintain an agricultural buffer along the north and west boundaries of the plan area as a method to avoid land use conflicts between urban uses and agricultural operations. The north buffer along Elkhorn Boulevard includes a 250-foot-wide strip of land along the south side of Elkhorn Boulevard, the 136-foot-wide public right-of-way of Elkhorn Boulevard, and any maintenance road or irrigation canal on the north side of Elkhorn Boulevard. The uses allowed in the buffer include pedestrian trails and bikeways, linear parks and open space, drainage canals or detention basins, irrigation canals, public roads, and maintenance roads. The buffer along the west side of the plan area is 200 feet wide and allows the same uses as the northern buffer. The area devoted to the agricultural buffer is 195.9 acres. As an alternative to agricultural buffers, other methods to reduce land use conflicts between urban and agricultural zoned lands include (1) provide separation among uses through the placement of roadways and landscape corridors, (2) through design (i.e., orientation and heights of buildings), (3) provide disclosure of potential agricultural operations nearby, and/or (4) provide temporary buffers that could be extinguished if agriculturally zoned property is rezoned to urban uses.
- ▲ Policy NN.ERC 1.12: Other Open Space. The City shall allow for Open Space to include an open space parkway (Ninos Parkway) from Del Paso Road to Elkhorn Boulevard that includes the Western Area Power Administration lines (46.6 acres); an open space buffer along the eastern boundary of the plan area that includes the existing Natomas East Main Drainage Canal and the Union Pacific Railroad right-of-way (123 acres); a proposed lake in the Northborough project (24 acres); and the Witter Ranch Historic Farm located near the northeast corner of El Centro Road and San Juan Road (26.2 acres). The area of land devoted to “Other Open Space” is 219.8 gross acres.

4.3.4 City of Sacramento Mixed-Income Housing Ordinance

On September 1, 2015, the City Council adopted a new, citywide Mixed Income Housing Ordinance. Chapter 17.712 of the City of Sacramento Zoning Code (“Mixed Income Housing”) is intended to require residential projects to contribute to the construction of affordable housing and to implement the policies of the Housing Element of the City’s General Plan. The Housing Impact Fee is a citywide fee on all new residential units, as established in the Mixed Income Housing Ordinance. Funds collected are transferred to the Housing Trust Fund, which is administered by the Sacramento Housing and Redevelopment Agency. The agency uses the fund to assist in the development of affordable workforce housing. Projects over 100 acres are required to develop a “mixed income housing strategy” that identifies how the project would address Housing Element policies related to providing a range of income housing.

4.3.5 Sacramento LAFCo

Applicable Sacramento Local Agency Formation Commission (LAFCo) goals, policies, and standards from the Policy, Standards and Procedures Manual are discussed in Chapter 6, Reorganization, of this Draft EIR.

4.4 LAND USE EVALUATION

The analysis provided in this section evaluates project compatibility with existing and planned adjacent land uses and for consistency with adopted plans, policies, and zoning designations. Significant environmental impacts resulting from the project are discussed in the applicable environmental resource sections in this EIR. This section differs from impact discussions in that only compatibility and consistency issues are discussed, as opposed to environmental impacts and mitigation measures consistent with the requirements of CEQA Guidelines 15125(d).

4.4.1 Annexation

The project would include annexation of the project area (589.4 acres) from Sacramento County into the City of Sacramento (see Exhibit 3-5 in Chapter 3, Project Description, of this EIR). Approval by Sacramento LAFCo, a responsible agency under CEQA, would be required for annexation of the project area to City territory. Potential environmental and policy issues associated with the proposed annexation and creation of an unincorporated island (land area between Del Paso Road and Interstate 80 would remain in the sphere of influence) are addressed in Chapter 6.0, Reorganization, of this EIR.

4.4.2 Proposed General Plan Land Use Designations

In Chapter 3, Project Description, of this EIR, Exhibit 3-6 and Table 3-1 show the proposed City General Plan land use designations, which would designate the project area as Planned Development (PD), Suburban Neighborhood Low Density (SNLD), Suburban Center (SC), Parks and Recreation (PRK), and Open Space (OS). The project area is currently designated as Planned Development (PD) under the adopted City of Sacramento 2035 General Plan and NNCP.

General Plan Policy 10.1.4 provides that areas designated as Planned Development are to establish land uses consistent with the General Plan's Vision and Guiding Principles as well as consistent with the appropriate land use designation categories established in the General Plan Land Use and Urban Design Element. The Panhandle PUD land use designations and pattern would complement the existing development conditions of the surrounding area by providing similar residential densities and transitional densities to the designated Rural Residential Valley View Acres community to the east. The Panhandle PUD land use pattern would also provide east-west neighborhood connectivity through the project area as well as provide park, open space, and neighborhood support uses.

As further described in the General Plan consistency analysis below, the project design would meet the General Plan Vision and Guiding Principles by providing 14 neighborhood villages that consist of walkable streets, bike facilities, varied housing densities, open space, and park facilities that meet the needs of families and a growing population (see General Plan policies LU 10.1.3 and LU 10.1.4).

4.4.3 Proposed Zoning

The project area is zoned as General Agriculture –80 Acres (AG-80) under the Sacramento County Zoning Code. If LAFCo approves annexation of the project area to the City, the project application requests the City to establish zoning of the project area with a PUD overlay as Single Unit Dwelling Zone (R-1); Single Unit or Duplex Dwelling Zone (R-1A); Agriculture Zone (A); Agriculture-Open Space Zone (A-OS); and Limited Commercial Zone (C-1). A description of these zoning designation is provided in above in Section 4.1.4, Adjacent Land Uses Designations and Zoning.

Consistent with the requirements of Chapter 17.452 (Planned Unit Development Regulations) of the City Municipal Code, the project includes the Panhandle PUD Guidelines that provide a comprehensive set of design criteria and development standards that are intended to establish the desired physical form of the Panhandle PUD in addition to the requirements of the City Planning and Development Code. The Panhandle PUD Guidelines address land use, site design, circulation and roadway design, and landscaping. These Guidelines and the PUD Schematic Plan direct the establishment of the project's variety of residential densities includes neighborhoods (14 villages) organized per a gridded street system with short block lengths, pedestrian-friendly streets, and landscaped areas to promote walkability. Exhibit 3-7 shows the proposed zoning of the project area consistent with the Panhandle PUD Schematic Plan.

The proposed zoning would provide residential lot sizes comparable to the existing residential development to the west, while providing larger residential lot sizing along the eastern portion of the project area adjacent to the Rural Estates zoning associated with Valley View Acres community.

4.4.4 Consistency Analysis

CONSISTENCY WITH THE SACOG 2016 MTP/SCS

The Panhandle PUD is designated as “Blueprint Growth Footprint Not Identified for Development in the MTP/SCS Planning Period.” MTP/SCS Appendix E-3 notes that the Panhandle PUD was not identified for growth in the MTP/SCS period because of its unincorporated status, infrastructure need, and potential flood and habitat issues. The project area was designated under the Blueprint for development of residential, commercial, and open space uses. Specifically, the Blueprint identifies an open space corridor along the eastern boundary of the project area. The Panhandle PUD retains a portion of this open space corridor as the Nino Parkway, but designates the remaining area for residential development. The Blueprint is not a policy document and does not regulate land use or approve or prohibit growth in the region.

CONSISTENCY WITH THE SACRAMENTO 2035 GENERAL PLAN

As noted above, the project includes annexation of the entire project area from Sacramento County to the City of Sacramento. Consistent with Policy LU 1.1.8, upon annexation, services would be provided by the City. The provision of services is discussed in Sections 5.9, Public Services, 5.11, Utilities, and Chapter 6, Reorganization.

Under the City's General Plan, the project area is located within the City's Sphere of Influence and is designated Planned Development. With implementation of the project, 119 net acres located in the northern portion of the project area would remain under the land use designation of Planned Development. The project would include a General Plan Amendment to redesignate the remaining acres of the project area as Suburban Neighborhood Low Density (SNLD), Suburban Center (SC), Parks and Recreation (PR), and Open Space (OS). These changes are shown in Exhibit 3-6, Chapter 3 of this EIR. The establishment of this land use mix to implement the project area's PD land use designation is consistent with Goal LU 1.1 and associated policies that support growth through orderly and well-planned development. While the project

would consist of annexation to the City, the project is surrounded on three sides with development and is considered infill development.

Consistent with General Plan goals 2.1, 2.3, 2.4, 2.5, 2.7, and their implementing policies, the Panhandle PUD Schematic Plan would establish a variety of residential densities and includes neighborhoods (14 villages) organized per a gridded street system, pedestrian-friendly streets, and landscaped areas to promote walkability. The Panhandle PUD proposes “Traditional” lot densities primarily along the western project boundary consistent with residential uses and densities in the adjacent North Natomas neighborhoods. Lower density “Estate” lots are proposed primarily in the eastern portion of the PUD that transition project residential densities to complement the rural residential character of the Valley View Acres community to the east of the project. The denser “Compact” residential lots would be centrally located adjacent to key project features (parks, elementary school, and the Ninos Parkway). This neighborhood design would also meet policy provisions under goals 4.1 and 4.5 by providing a mix of residential types, while transitioning densities to match existing development to the west and east of the project area.

The Panhandle PUD Schematic Plan also establishes the Nino Parkway that integrates with the project’s two park sites into the design of the project, consistent with Goal 2.3 and its implementing policies as well as policies LU 4.1.8, LU 8.1.3, LU 8.1.9, LU 9.1.2, and LU 9.1.3.

The project would provide a variety of housing types and lot densities with the establishment of the 14 neighborhood villages that would contain the “Traditional,” “Estate,” and “Compact” residential types consistent with Housing Element policies H-1.2.2, H-1.3.4, and H-2.2.7. The Panhandle PUD Guidelines would ensure quality in the housing design (consistent with Housing Element Policy H-2.2.1), and provide sustainable building design provisions consistent with Housing Element Policy H-1.1.1. Implementation of the project’s mixed income housing strategy would address Housing Element policies H-1.3.4 and H-1.3.5 for the provision of housing opportunities for all income groups and segments of the community.

CONSISTENCY WITH THE NORTH NATOMAS COMMUNITY PLAN

As previously noted above, the current NNCP was adopted in March 2015 as part of the last General Plan update. The project implements Policy NN.LU 1.1 through the proposed establishment of the Panhandle PUD Schematic Plan and Development Guidelines.

The Panhandle PUD Schematic Plan designates over 80 percent of its residential uses within 880 feet of existing or project-proposed open space areas (e.g., parks, parkways, drainage facilities, and other open space opportunities) consistent with Policy NN.LU 1.7. The Panhandle PUD Schematic Plan also establishes the Nino Parkway that is part of the open space buffering for the NNCP eastern boundary as identified in Policy NN.ERC 1.12. The Krumenacher Ranch portion of the project area would be required to comply with the agricultural buffer requirements of Policy NN.ERC 1.10 once development is proposed in this area.

The Panhandle PUD Schematic Plan would establish variety of residential densities consistent Policy NN.LU 1.9 that consists of “Traditional” lot densities (45 percent of the total residential units) along the western and a portion of the eastern project boundary, the lower density “Estate” lots (28 percent of the total residential units) in the western and eastern portion of the PUD, and the denser “Compact” residential lots (27 percent of the total residential units) that are centrally located adjacent to key project features (parks, elementary school, and the Ninos Parkway). This would also provide opportunities for larger lot housing at lower densities to accommodate North Natomas residents who are move-up home buyers wishing to remain in the area consistent with Policy NN.LU 1.13.

CONSISTENCY WITH THE CITY OF SACRAMENTO ZONING ORDINANCE

If LAFCo approves annexation of the project area to the City, the project application requests the City to establish zoning of the project area. Exhibit 3-7 and Table 3-1 in Chapter 3, Project Description, of this EIR show proposed zoning of the project area. As noted above, the PUD overlay requires the development of a Schematic Plan and PUD Guidelines to regulate the land uses and urban design of the project area.

As required by the City of Sacramento Zoning Ordinance for Planned Unit Developments, projects within the Panhandle PUD would be subject to Plan Review by the City's Planning Director, pursuant to Section 17.180.020 of the Municipal Code. Should the City Council approve the requested rezone, the project would be consistent with the zoning.

4.4.5 Compatibility with Existing Adjacent Land Uses

The determination of compatibility of land uses typically relies on a general discussion of the types of adjacent land uses to a proposed project and whether any sensitive receptors exist on the adjacent properties or are associated with the proposed project. Incompatibilities typically exist when uses such as residences, parks, churches, and schools are located adjacent to more disruptive uses such as heavy industrial, major transportation corridors, and regional commercial centers where traffic levels and attendant noise may be high. The identification of incompatible uses occurs if one land use is anticipated to be disruptive of the existing or planned use of an adjacent property.

Approval of the Panhandle PUD would establish a new infill mixed use development between the existing residential neighborhoods to the west and the rural residential Valley Acres community to the east. The project would not divide an established community as it would provide new east-west connectivity between neighborhoods in North Natomas and Valley View Acres (see Exhibit 3-4). New roadway connections are designed as meandering routes (e.g., curved roadways with one to three turns at intersections to traverse the site) rather than direct connections to discourage "cut-through" vehicle traffic that could utilize these connections as short cuts to other destinations in the area.

The following analysis addresses the compatibility of each proposed land use type to areas adjacent to the project.

COMMERCIAL

The proposed Suburban Center site is located at the southeast corner of the Panhandle PUD on the corner of Del Paso Road and Sorento Road. Future development of this site is anticipated to consist of 101,277 square feet of neighborhood supporting retail and office uses. The Panhandle PUD Guidelines and Schematic Plan identify that this site would be designed to provide convenient and attractive pedestrian connections from the adjoining residential areas, while providing a wall and 35-foot landscaping setback from the Sorento Road and the Valley View Acres to protect its rural character. This site would also be subject to City outdoor spill-over lighting standards (Section 17.608 of the City Planning and Development Code), parking lot trees (Section 17.612 of the City Planning and Development Code), and wall design (Section 17.620 of the City Planning and Development Code).

SINGLE-FAMILY RESIDENCES

As noted above, the Panhandle PUD proposes "Traditional" lot densities primarily along the western project boundary are consistent with residential uses and densities in the adjacent North Natomas neighborhoods. Lower density "Estate" lots are proposed primarily in the eastern portion of the PUD that transition project residential densities to complement the rural residential character of the Valley View Acres community to the east of the project, while the denser "Compact" residential lots would be centrally located adjacent to key

project features (parks, elementary school, and the Ninos Parkway). This neighborhood design would transition densities to match existing development to the west and east of the project area.

In addition to the transition of residential densities, the Panhandle PUD Guidelines also include the following design provisions for the rural residential interface with Sorento Road to further protect the character of the Valley View Acres community:

- ▲ landscaped wall and 18.5-foot landscaping setback from the west side of Sorento Road, and
- ▲ new roadway access to Sorento Road would be limited to two access points, and

4.4.6 Population, Housing, and Employment Changes

Table 4-6 summarizes residential and employment estimates for the Panhandle PUD.

Dwelling Units	Population	Employment
2,660	7,182	272

Population estimate was based on using the City-wide persons per household factor of 2.70 from the California Department of Finance E-5 Population and Housing Estimates for Cities, County, and the State, January 2011-2016, with 2010 Benchmark

Employment estimate was based on SACOG Placetype model data for “Community/Neighborhood Commercial” (28 employees per acre)

NOTE: This estimate includes development assumptions for the Krumenacher Ranch as identified in Chapter 3, Project Description.

The project would not displace a substantial amount of existing housing or residents as the project area only includes two residences on the Krumenacher Ranch site, which is not proposed for development under the Panhandle PUD. Population and employment increases are not, in and of themselves, considered physical environmental effects. Potential significant environmental impacts because of the population and employment growth of the Panhandle PUD are addressed in the technical sections of this EIR.

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5 ENVIRONMENTAL SETTING, IMPACTS, AND MITIGATION MEASURES

INTRODUCTION

This Draft EIR evaluates and discloses the environmental impacts associated with the Panhandle Annexation and Planned Unit Development project (referred to herein as “project” or “Panhandle PUD”), in accordance with the California Environmental Quality Act (CEQA) (Public Resources Code [PRC] Section 21000, et seq.) and the State CEQA Guidelines (California Code of Regulation, Title 14, Chapter 3, Section 1500, et seq.). The potentially significant environmental effects of all phases of the project, including construction and operation, are evaluated in Sections 5.1 through 5.14 (consistent with State CEQA Guidelines Section 15126.2). A significant impact is defined in CEQA as a substantial or potentially substantial adverse change to the physical environment resulting from implementation of the project. Where significant environmental impacts are identified, potentially feasible mitigation measures are described. Mitigation measures may avoid, minimize, or compensate for significant adverse impacts and need to be fully enforceable through permit conditions, agreements, or other legally binding means (State CEQA Guidelines Section 15126.4[a]). Mitigation measures are not required for effects that are found to be less than significant. In addition, Chapter 7, “Project Alternatives,” presents a reasonable range of alternatives that may reduce the project’s potentially significant or significant impacts on the environment.

CONTENTS OF THE RESOURCE CHAPTERS

Sections 5.1 through 5.14 of this Draft EIR disclose the potential environmental impacts of the Panhandle PUD, including cumulative impacts, and are organized in the following subsections:

Environmental Setting: This section describes the environmental setting, which is the existing environmental conditions in the project area and vicinity at the time of publication of the Notice of Preparation of the EIR. The geographic extent of the environmental setting area differs among resources. For example, Section 5.3, Biological Resources, includes a detailed description of project area and vegetation and habitat conditions as well as regional habitat conditions associated with the Natomas Basin in describing the extent of open water aquatic habitat, emergent marsh, riparian forest, riparian scrub-shrub, grassland, vernal pools, and agriculture.

Regulatory Setting: This section presents federal, state, and local regulatory requirements and planning context for the specific resource topic.

Impacts and Mitigation Measures:

Significance Criteria: This section provides the criteria used to define the level at which an impact would be considered significant, based on the environmental checklist in Appendix G of the State CEQA Guidelines, best available data, and regulatory standards of federal, state, and local agencies.

Methods and Assumptions: This section describes the methods, process, procedures, and assumptions used to conduct the impact analysis.

Issues Dismissed from Further Consideration: Where relevant, this section summarizes those significance criteria for which the project would not result in an impact.

Impacts and Mitigation Measures: The potential impacts of the Panhandle PUD are determined by comparing the construction and operation of the project to the baseline condition, as described in the environmental setting. Project impacts are numbered sequentially in each chapter (Impact 5.1-2, Impact 5.1-2, Impact 5.1-3, etc.). A summary impact statement precedes a more detailed discussion of the environmental impact. The discussion includes the analysis and rationale upon which conclusions are

drawn. The determination of level of significance of the impact is defined in bold text. A “less-than-significant” impact is one that would not result in a substantial adverse change in the physical environment. A “potentially significant” impact or “significant” impact is one that could result in a substantial adverse change in the physical environment; both are treated the same under CEQA in terms of procedural requirements and the need to identify feasible mitigation. As feasible, mitigation measures are identified to avoid, minimize, rectify, reduce, or compensate for significant or potentially significant impacts, in accordance with the State CEQA Guidelines Section 15126.4.

Where an existing law, regulation, or permit specifies mandatory and prescriptive actions about how to fulfill the regulatory requirement as part of the project definition, leaving little discretion in its implementation, and would avoid an impact or maintain it at a less-than-significant level, the environmental protection afforded by the regulation is considered before determining impact significance. Where existing laws or regulations specify a mandatory permit process for future projects, performance standards without prescriptive actions to accomplish them, or other requirements that allow substantial discretion in how they are accomplished, or have a substantial compensatory component, the level of significance is determined before applying the influence of the regulatory requirements. In this circumstance, the impact would be potentially significant or significant, and the regulatory requirements would be included as a mitigation measure.

Cumulative Impacts: Cumulative impacts, considered in the context of other existing and projects, are addressed within each resource chapter. The existing cumulative condition is described; the effect of past, present, and future projects are considered in conjunction with the project to determine if a significant cumulative impact would result, and the project contribution to that cumulative condition is assessed. If the project contribution is cumulatively considerable, mitigation to lessen the project contribution is described if available.

The cumulative analysis methodology, including the cumulative setting for each resource topic and a list of cumulative projects considered, is described below.

CUMULATIVE IMPACT ANALYSIS METHODOLOGY

Section 15130(a) of the State CEQA Guidelines requires a discussion of the cumulative impacts of a project when the project’s incremental effect is cumulatively considerable. Where a project’s incremental effect is not cumulatively considerable, the effect need not be considered significant, but the basis for concluding the incremental effect is not cumulatively considerable must be briefly described. Cumulatively considerable, as defined in State CEQA Guidelines Section 15065(a)(3), means that the “incremental effects of an individual project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.” State CEQA Guidelines Section 15355 defines a cumulative impact as two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time. Cumulative impacts are discussed in each resource chapter, following discussions of the project-specific impacts.

Cumulative Impact Approach

State CEQA Guidelines Section 15130 identifies two basic methods for establishing the cumulative environment in which a project is considered: the use of a list of past, present, and probable future projects; or the use of adopted projections from a general plan, other regional planning document, or a certified EIR for such a planning document. The cumulative analyses in this EIR primarily uses the “list” approach, although some use the “plan” approach to identify the cumulative setting and provide relevant information for the cumulative impact analysis associated with anticipated buildout of the City of Sacramento under the 2035 General Plan and the Sacramento Council of Government’s 2016 Metropolitan Transportation Plan/Sustainable Communities Strategy. The effects of past and present projects on the environment are

reflected by the existing conditions in the project area. A list of probable future projects is provided below in Table 5-2. Probable future projects are those in the project vicinity that have the possibility of interacting with the project to generate a cumulative impact (based on proximity and construction schedule) and either:

- ▲ are partially occupied or under construction,
- ▲ have received final discretionary approvals,
- ▲ have applications accepted as complete by local agencies and are currently undergoing environmental review, or
- ▲ are projects that have been discussed publicly by an applicant or that otherwise become known to a local agency and have provided sufficient information about the project to allow at least a general analysis of environmental impacts.

The cumulative list considers related projects likely to be partially or fully constructed over the assumed 20-year build-out of the Panhandle PUD (year 2036). This time period was selected because it coincides with the timing of the introduction of project impacts (i.e., project impacts would be introduced by construction and operational activities) and it is consistent with the timing requirements for water supply assessments.

Cumulative Setting

GEOGRAPHIC SCOPE

The geographic area that could be affected by the project varies depending on the environmental resource topic. When the effects of the project are considered in combination with those other past, present, and probable future projects to identify cumulative impacts, the specific projects considered may also vary depending on the type of environmental effects being assessed. Table 5-1 presents the general geographic areas associated with the different resource topics addressed in this analysis.

Table 5-1 Geographic Scope of Cumulative Impacts

Resource Topic	Geographic Area
Agricultural Resources	State/Sacramento County
Air Quality	Sacramento Valley Air Basin
Biological Resources	Sacramento Valley/Natomas Basin
Archaeological, Historic, and Tribal Cultural Resources	Sacramento Valley/North Natomas Community Plan area
Geology and Soils	Sacramento Valley
Greenhouse Gases and Climate Change	Global/state-wide
Hazards and Hazardous Materials	North Natomas Community Plan Area
Hydrology and Water Quality	Watersheds located in the Natomas Basin
Noise	Immediate project vicinity where project-generated noise could be heard concurrently with noise from other sources
Public Services	City of Sacramento/North Natomas Community
Transportation and Circulation	Regional and local roadways and freeways where the Panhandle PUD could contribute traffic that could alter traffic conditions
Urban Design and Visual Resources	Sacramento metropolitan area
Utilities	Sacramento County and City of Sacramento
Energy	Sacramento Municipal Utility District and Pacific Gas and Electric Company service areas

Source: Compiled by Ascent Environmental in 2017

PROJECT LIST

Probable future projects considered in the cumulative analysis meet the criteria described above: they are in the project vicinity and have the possibility of interacting with the project to generate a cumulative impact (Table 5-2). This list of projects was considered in the development and analysis of the cumulative settings and impacts for most resource topics within the geographic scope of each resource topic (as listed in Table 5-1). Past and present projects in the vicinity were also considered as part of the cumulative setting, as they contribute to the existing conditions upon which the Panhandle PUD and probable future projects' environmental effects are compared.

Table 5-2 Cumulative Projects List

Project Name	Location	Description	Residential Units and/or Non-Residential Area	Project Status
Greenbriar	City of Sacramento. West of State Route SR 99 and north of Interstate 5. Adjacent to the Metro Air Park	Master planned community consisting of approximately 577 acres.	2,922 dwelling units, 28.6 net acres of commercial, 32.5 acres of parks and recreational uses, a 9.9 net-acre school site	Original master plan approved. Proposed modifications to the master plan are under review
Metro Air Park	Sacramento County. North of Interstate 5 adjacent to the Sacramento International Airport.	Master planned office and industrial development consisting of 1,886 acres.	518 acres of distribution and light manufacturing, 274 acres of airport-related commerce, 600 acres of office space, 161 acres of research, development, and high-tech operations, and 25 acres designated for hotel uses	Approved and under construction
Natomas North Precinct Master Plan ¹	Sacramento County. North of West Elkhorn Boulevard and east of State Route 99.	Proposed mixed-use master plan community consisting of approximately 5,699 acres.	Amend the Sacramento County General Plan Land Use Diagram to change the land use designations from Agricultural Cropland Low Density Residential (2,560.6 acres), Medium Density Residential (265.7 acres), Commercial & Office (703.3 acres), Public/Quasi-Public (241.9 acres), and Recreation (1,927.9 acres). These designations would allow the development of 20,477 dwelling units.	Proposed
Natomas Central Planned Unit Development	City of Sacramento. West of El Centro Road and south of Del Paso Road	This project consists of a residential development on approximately 398 acres.	2,533 dwelling units	Approved and under construction
Innovate Corporate Center	City of Sacramento. Northeast corner of the intersection of East Commerce Way and Arena Boulevard.	Expansion of the Arena Corporate Center, Site III that consists of 112.5 acres.	505,695 square feet of office uses, hotel, and a parking garage	Approved and unbuilt
Natomas Fountains	City of Sacramento. North of the Truxel Road/Gateway Park Boulevard intersection	Commercial/retail project on 12.54 acres	115,960 square feet of commercial/retail uses	Approved and unbuilt
Sutter Pointe ¹	Sutter County. North of Sacramento County/Sutter County boundary along both sides of State Route 99	Mixed use specific plan consisting of 7,528 acres.	2,897.7 acres of residential uses, 3,626.5 acres of employment uses, and 1,004.0 acres of community facilities). These designations would allow the development of 17,500 dwelling units.	Approved and unbuilt
Placer Vineyards ¹	Placer County. Southwest corner of Placer County south of Baseline Road.	Mixed use specific plan consisting of 5,230 acres.	14,132 dwelling units, 108 acres of office uses, 166 acres of retail uses, and 842.8 acres of parks and open space	Approved and unbuilt
Regional University ¹	Placer County. North of Baseline Road and west of the future extension of Watt Avenue	Mixed use specific plan consisting of 1,157.5 acres.	600-acre university consisting of 6,000 students and 800 staff; 557.5-acre community consisting of 3,157 dwelling units, 22.2 acres commercial, and 219.8 acres of parks and open space uses	Approved and unbuilt
Sierra Vista ¹	City of Roseville. North of Baseline Road and west of Fiddymont Road	Mixed use specific plan consisting of 2,075.7 acres.	8,424 dwelling units, 240.6 acres of office/commercial uses, and 534.5 acres of public/open space uses	Approved and unbuilt

Source: Compiled by Ascent Environmental 2017

¹ These projects are expected to result in development beyond the year 2036. Section 5.11, "Transportation and Circulation," include a post-2036 traffic analysis.

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5.1 AGRICULTURAL RESOURCES

This section describes existing agricultural resources within the project area and addresses potential issues associated with the loss of important farmland, Williamson Act land, timberland, and other forestry resources. The analysis is based on available data, including the City of Sacramento 2035 General Plan Master EIR and California Department of Conservation (DOC) Important Farmlands data.

The following comments were received in response to the Notice of Preparation (see Appendix A) that are addressed in this section:

- ▲ loss of agricultural lands to development, and
- ▲ conflicts and nuisance complaints from future project residents regarding adjoining agricultural activities.

5.1.1 Environmental Setting

As shown in Exhibit 3-3, the project area is currently utilized for row crops (hay) and grazing land. The East Natomas Education Complex site is currently not in operation and does not support any agricultural operations. Adjacent agricultural uses include rice crops, grazing, and limited rural residential animal husbandry activities primarily consisting of raising and breeding livestock and horses north and east of the project area. There are no large-scale agricultural operations (e.g., dairies, processing facilities, pens with large concentration of animals, and agricultural equipment and material storage sites) adjacent to the project. The closest large-scale agricultural facility is approximately 8,000 feet (over 1.5 miles) to the west of the project area on the north side of West Elkhorn Boulevard¹ that consists of agricultural equipment storage.

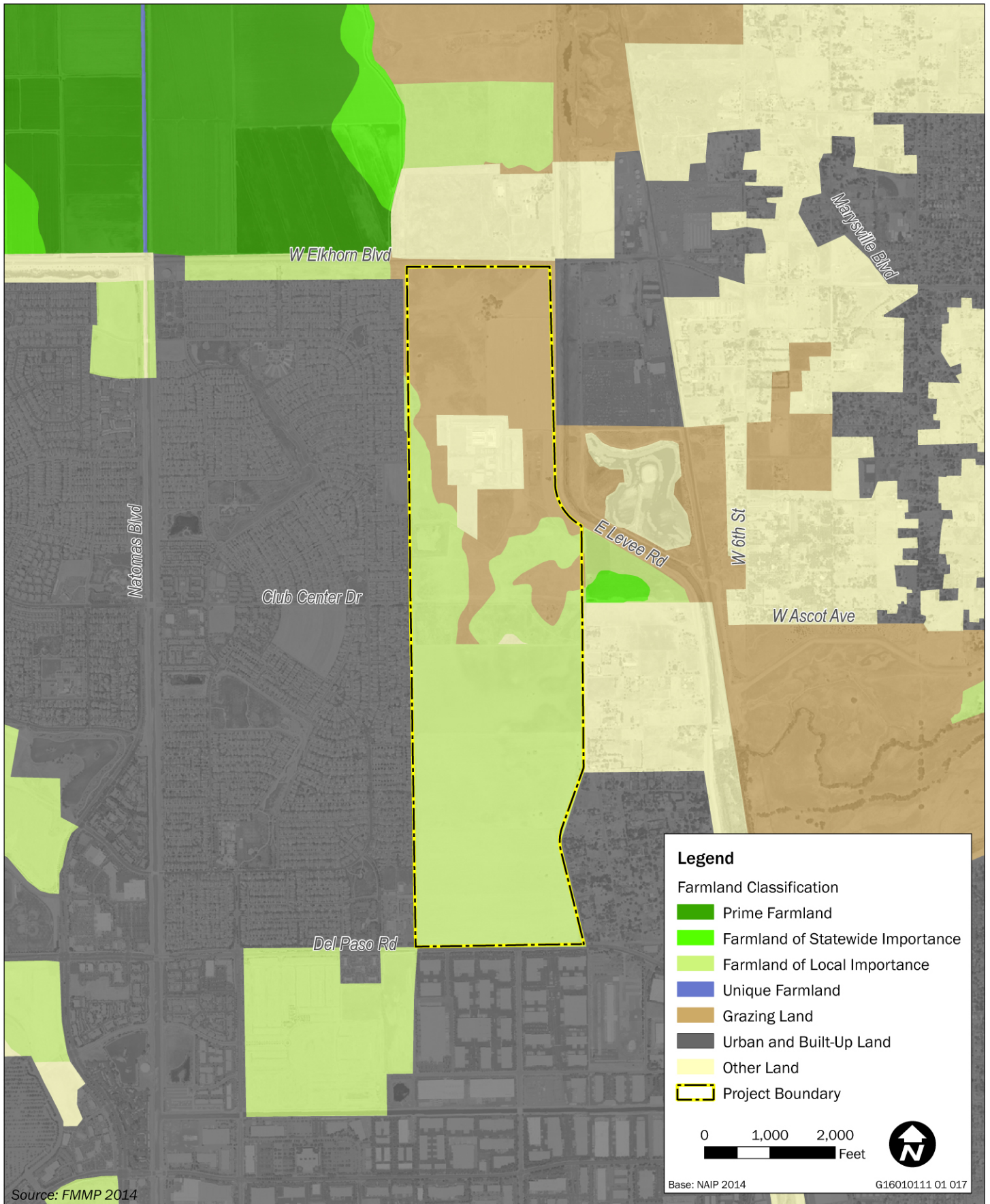
Per the Farmland Mapping and Monitoring Program (FMMP) data, approximately 354 acres of the project area are considered Farmland of Local Importance and Grazing Land (Table 5.1-1). Exhibit 5.1-1 shows the Important Farmlands in the project area and vicinity.

Table 5.1-1 Farmland within the Project Area (2014)

Land Use Type	Sacramento County (acres)	Project Area (acres)
Prime Farmland	91,568	0.0
Farmland of Statewide Importance	43,105	0.0
Unique Farmland	15,125	0.0
Farmland of Local Importance	58,852	354.1
Grazing Land	153,452	184.9
Total Farmland	362,102	539.0

Source: Compiled by Ascent Environmental in 2016 based on 2014 FMMP data

¹ West Elkhorn Boulevard is also referred to as “Elkhorn Boulevard” in some instances in the Draft EIR.



Source: FMMP 2014

Exhibit 5.1-1

Important Farmland



WILLIAMSON ACT LANDS

As shown in Exhibit 5.1-2, none of the land in the project area is currently under Williamson Act contract. The closest property under Williamson Act is to the north of the project and is in nonrenewal. A “notice of nonrenewal” starts the 9-year nonrenewal period. During the nonrenewal process, the annual tax assessment continually increases each year until it is equivalent to current tax rates at the end of the nonrenewal period. The contract is then terminated.

5.1.2 Regulatory Setting

FEDERAL

Farmland Protection Policy Act

The Natural Resources Conservation Service (NRCS), a federal agency within the U.S. Department of Agriculture, is the agency primarily responsible for the implementation of the Farmland Protection Policy Act (FPPA). The purpose of the FPPA is to minimize federal programs’ contribution to the conversion of farmland to nonagricultural uses by ensuring that federal programs are administered in a manner that is compatible with state, local and private programs designed to protect farmland. NRCS provides technical assistance to federal agencies, state, and local governments; tribes or non-profit organizations that desire to develop farmland protection programs and policies.

The FPPA also established the Farmland Protection Program (FPP) and the Land Evaluation and Site Assessment (LESA). The LESA system ranks lands for suitability and inclusion in the FPP. LESA evaluates several factors, including soil potential for agricultural uses, location, market access, and adjacent land uses. The LESA system has spawned many variations, including the California LESA model, which is used in California’s Farmland Mapping and Monitoring Program, described below.

STATE

California Department of Conservation

DOC administers and supports several programs, including the Williamson Act, the California Farmland Conservancy Program, the Williamson Act Easement Exchange Program and the Farmland Mapping and Monitoring Program. These programs are designed to preserve agricultural land and provide data on conversion of agricultural land to urban use. Key DOC tools available for land conservation planning are conservation easement grants, tax incentives to keep land in agriculture or open space, and farmland mapping and monitoring.

Farmland Mapping and Monitoring Program

The FMMP develops mapping tools and statistical data that tracks and assesses land use changes to farmland. The FMMP designates portions of the state landscape as “prime farmland,” “unique farmland,” “farmland of statewide importance,” “farmland of local importance,” “grazing land,” urban and built up land,” or “other land” as described in Table 5.1-2.

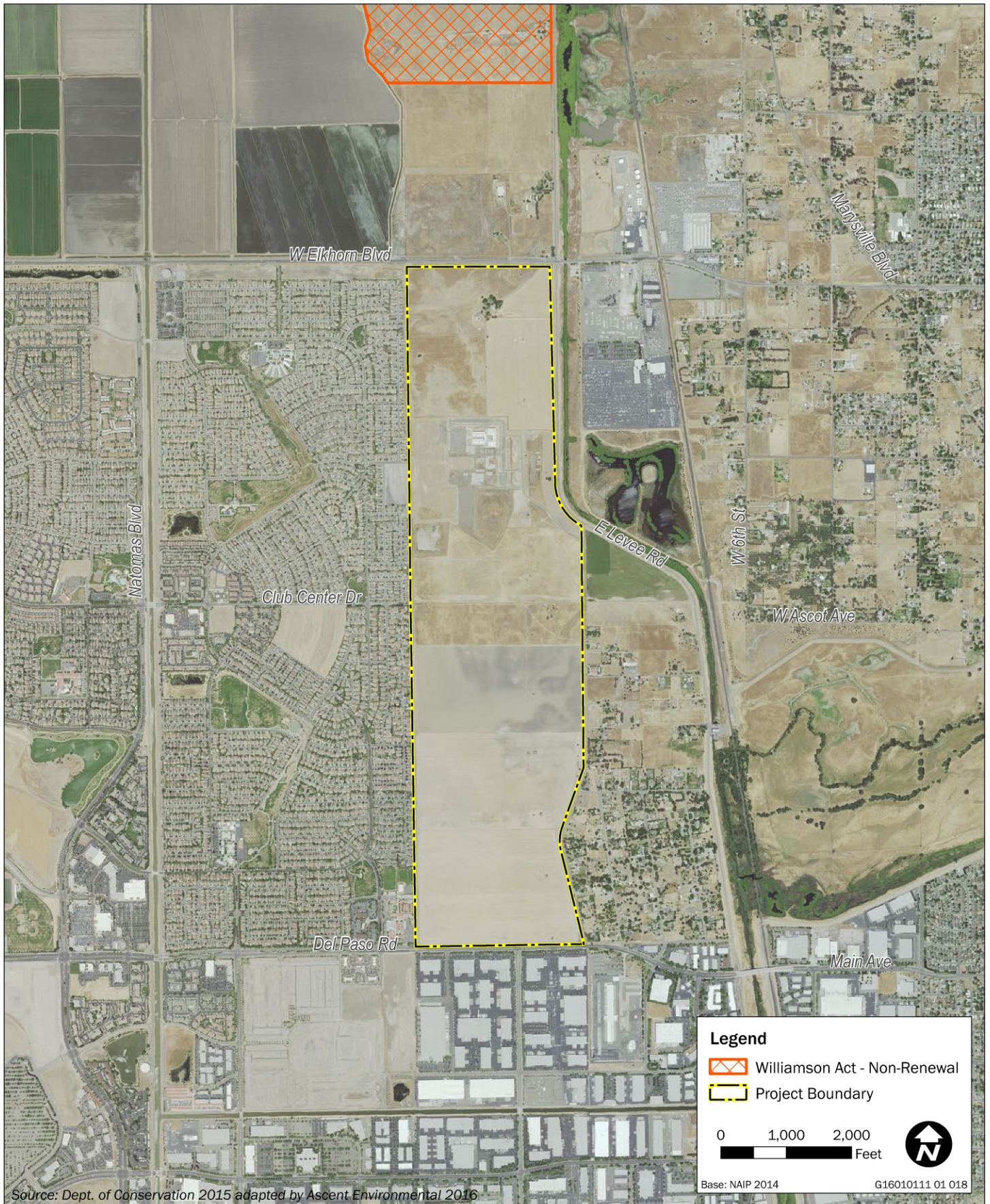


Exhibit 5.1-2

Williamson Act



Table 5.1-2 FMMP Mapping Categories

Category	Considered Important Farmland under CEQA ¹	Definition
Prime Farmland (P)	Yes	Farmland with the best combination of physical and chemical features able to sustain long-term agricultural production. This land has the soil quality, growing season, and moisture supply needed to produce sustained high yields. Land must have been used for irrigated agricultural production at some time during the 4 years before the mapping date.
Farmland of Statewide Importance (S)	Yes	Farmland similar to Prime Farmland but with minor shortcomings, such as greater slopes or less ability to store soil moisture. Land must have been used for irrigated agricultural production at some time during the 4 years before the mapping date.
Unique Farmland (U)	Yes	Farmland of lesser quality soils used for the production of the state's leading agricultural crops. This land is usually irrigated, but may include non-irrigated orchards or vineyards as found in some climatic zones in California. Land must have been cropped at some time during the four years before the mapping date.
Farmland of Local Importance (L)	No	Land of importance to the local agricultural economy as determined by each county's board of supervisors and a local advisory committee.
Grazing Land (G)	No	Land on which the existing vegetation is suited to the grazing of livestock.
Urban and Built-Up Land (D)	No	Land occupied by structures with a building density of at least one unit to 1.5 acres, or approximately six structures to a 10-acre parcel. This land is used for residential, industrial, commercial, construction, institutional, public administration, railroad and other transportation yards, cemeteries, airports, golf courses, sanitary landfills, sewage treatment, water control structures, and other developed purposes.
Other Land (X)	No	Land not included in any other mapping category. Common examples include low density rural developments; brush, timber, wetland, and riparian areas not suitable for livestock grazing; confined livestock, poultry or aquaculture facilities; strip mines, borrow pits; and water bodies smaller than 40 acres. Vacant and non-agricultural land surrounded on all sides by urban development and greater than 40 acres is mapped as Other Land.
Water (W)	No	Perennial water bodies with an extent of at least 40 acres.

¹ Important farmland is defined by CEQA under Public Resources Code Section 21060.01 and CEQA Guidelines Appendix G.

Williamson Act

The California Land Conservation Act, also known as the Williamson Act, was adopted in 1965 to encourage the preservation of the state's agricultural lands and to prevent their premature conversion to urban uses. To preserve these uses, the Act established an agricultural preserve contract procedure by which any county or city within the state taxes landowners at a lower rate, using a scale based on the actual use of the land for agricultural purposes, as opposed to its unrestricted market value. In return, the owners guarantee that these properties remain under agricultural production for a ten-year period. The contract is renewed automatically unless the owner files a notice of non-renewal. In this manner, each agricultural preserve contract (at any given date) is always operable at least nine years into the future.

Landowners receive substantially reduced property tax assessments in return for enrollment under Williamson Act contract. Property tax assessments of Williamson Act contracted land are based upon generated income as opposed to potential market value of the property.

Public Resources Code

Public Resources Code Section 21060.1 defines "agricultural land" as:

prime farmland, farmland of statewide importance or unique farmland, as defined by the United States Department of Agriculture land inventory and monitoring criteria, as modified for California.

This EIR uses this definition for evaluating impacts associated with the loss of agricultural lands resulting from implementing the project.

LOCAL

City of Sacramento 2035 General Plan

The Environmental Resources Element of the City of Sacramento 2035 General Plan provide goals and policies aimed at protecting agricultural land. The following policy is applicable to the project:

- ▲ **Policy ER 4.2.4:** Development Adjacent to Agriculture. The City shall require open space or other appropriate buffers for new development abutting productive agricultural areas to protect the viability of active agricultural operations outside of the city and ensure compatibility of uses with residents in adjacent areas.

North Natomas Community Plan

The North Natomas Community Plan identifies the Panhandle Area as one of the new growth areas for the city (City of Sacramento 2015). It is designed to guide future public and private development with the North Natomas area.

The following agricultural policy applies to the proposed project:

- ▲ **NN.ERC 1.10:** Agricultural Buffers. The City shall maintain an agricultural buffer along the north and west boundaries of the plan area as a method to avoid land use conflicts between urban uses and agricultural operations. The north buffer along Elkhorn Boulevard includes a 250-foot-wide strip of land along the south side of Elkhorn Boulevard, the 136-foot-wide public right-of-way of Elkhorn Boulevard, and any maintenance road or irrigation canal on the north side of Elkhorn Boulevard. The uses allowed in the buffer include pedestrian trails and bikeways, linear parks and open space, drainage canals or detention basins, irrigation canals, public roads, and maintenance roads.

The buffer along the west side of the plan area is 200 feet wide and allows the same uses as the northern buffer. The area devoted to the agricultural buffer is 195.9 acres. As an alternative to agricultural buffers, other methods to reduce land use conflicts between urban and agricultural zoned lands include (1) provide separation among uses through the placement of roadways and landscape corridors, (2) through design (i.e., orientation and heights of buildings), (3) provide disclosure of potential agricultural operations nearby, and/or (4) provide temporary buffers that could be extinguished if agriculturally zoned property is rezoned to urban uses.

5.1.3 Impacts and Mitigation Measures

SIGNIFICANCE CRITERIA

For the purposes of this Draft EIR, agricultural impacts of the project would be considered significant if it would result in any of the following (based on CEQA Guidelines Appendix G):

- ▲ convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use;
- ▲ conflict with existing zoning for agricultural use or a Williamson Act contract; or
- ▲ involve other changes in the existing environment, which, because of their location or nature, could result in conversion of Farmland to non-agricultural use.

METHODS AND ASSUMPTIONS

Evaluation of potential agricultural impacts of the project was based on review of the project description and a review of documents pertaining to the project area, including the City of Sacramento 2035 General Plan and its Master EIR and FMMP Important Farmlands data. In determining the level of significance, this analysis assumes that the project would comply with relevant state and local ordinances and regulations, as well as the adopted policies presented above.

While no development is proposed for the Krumenacher Ranch portion of the project area, the analysis assumes that the Krumenacher Ranch site would be developed, as described in the Chapter 3, "Project Description," at some point after its annexation to the City.

ISSUES DISMISSED FROM FURTHER CONSIDERATION

The project site is not subject to a Williamson Act contract. The project would not conflict with the zoning of the property for agricultural use as changes to the zoning would be approved if the project is approved. Therefore, there would be no impact relative to conflicts with Williamson Act contracts or with agricultural zoning, and these issues will not be discussed further in this DEIR.

The site is not used or zoned for timber harvest or forest land. Therefore, there would be no impact, and these issues are not discussed further in this EIR.

PROJECT IMPACTS AND MITIGATION MEASURES

Impact 5.1-1: Conversion of farmland to non-agricultural use.

Implementation of the project would result in the conversion of 354.1 acres of Farmland of Local Importance and 184.9 acres of Grazing Land from use as row crops and grazing to urban development. This conversion would not result in the loss of important farmland as defined in Public Resources Code Section 21060.1 and Appendix G of the CEQA Guidelines. Thus, this impact would be **less than significant**.

As identified in Table 5.1-1, the proposed annexation and subsequent development of the project area would result in the conversion of Farmland of Local Importance and Grazing Land under the FMMP. Farmlands of concern under CEQA (Prime Farmland, Unique Farmland, and Farmland of Statewide Importance) would not be directly affected by the development of the project. The City of Sacramento General Plan Master EIR evaluated the potential loss of farmland in Impact 4.1-1 Conversion of Important Farmland to a non-agricultural use and found that:

"Although the city still contains agricultural land or land designated as Important Farmland, much of this land within the Policy Area has been designated and zoned for development and in many instances has been entitled for future development, in part to limit the conversion of agricultural lands outside of the Policy Area...Because planned growth would be focused within the Policy Area and not on surrounding, regional agricultural areas outside the city and the remaining agricultural land within the Policy Area is not considered viable or suitable for large-scale agricultural operations, the proposed General Plan's impact on agricultural resources associated with Important Farmland would be less than significant" (City of Sacramento 2015: pp 4.1-3, 4).

The Panhandle was a "Planned Development" area within the City's General Plan and analyzed accordingly. The project is consistent with the City's General Plan and no circumstances have changed that would result in a change of significance. While implementation of the project would result in the conversion of Farmland of Local Importance and Grazing Land, this conversion would not result in the loss of important farmland as defined in Public Resources Code Section 21060.1 and Appendix G of the CEQA Guidelines. Therefore, the project would result in a **less-than-significant** impact.

Mitigation Measures

No mitigation is required.

Impact 5.1-2: Compatibility with adjacent agricultural uses

The project would not result in new urban land uses in an area adjacent to other active agricultural land that may impair adjacent agricultural activities. The impact would be **less than significant**.

The project would involve the annexation of the entire project area and the establishment of the Panhandle PUD on 470.5 acres. The northern 119 acres (Krumenacher Ranch) is not part of the Panhandle PUD and would retain the current General Plan “Planned Development” designation and would be zoned “Agriculture.”

As noted above, adjacent agricultural uses include rice crops, grazing, and limited rural residential animal husbandry activities north and east of the project area. There are no large-scale agricultural operations (e.g., dairies, processing facilities, pens with large concentration of animals, and agricultural equipment and material storage sites) adjacent to the project (the nearest operation is approximately 8,000 feet [over 1.5 miles] from the project area).

Panhandle PUD

The Panhandle PUD includes lower density “Estate” lots primarily in the eastern portion of the PUD that transition project residential densities to complement the rural residential character of the Valley View Acres community to the east of the project. In addition to the transition of residential densities, the Panhandle PUD Guidelines also include the following design provisions for the rural residential interface with Sorento Road to further protect the rural and agricultural character of the Valley View Acres community:

- ▲ landscaped wall and 18.5-foot landscaping setback from the west side of Sorento Road, and
- ▲ new roadway access to Sorento Road would be limited to two access points.

These proposed buffering provisions of the Panhandle PUD would avoid or substantially lessen potential conflicts with the rural residential/agricultural uses.

Krumenacher Ranch

As noted above, the 119-acre Krumenacher Ranch site portion of the project area is not included in the Panhandle PUD and does not include any proposed land use entitlements. There are active rice crop operations approximately 400 feet northwest of the site. Future urban development of this portion of the project area could result in conflicts to agricultural operations to the north. Agricultural operations may create risks and nuisances for urban residences and businesses. Conversely, urban land uses and the associated population create operational difficulties for agriculture. Health risks and nuisances potentially created by agricultural operations in the project area include, but are not limited to, the following:

- ▲ exposure to pesticide and herbicide applications,
- ▲ exposure to smoke (from burning) and dust (from soil preparation),
- ▲ exposure to noise (from machinery and trucks),
- ▲ hazards to children (irrigation channels and ditches), and
- ▲ exposure to mosquitoes breeding in flooded fields.

These potential nuisances and other aspects of urban land uses, including rising land values, can affect agriculture negatively. Negative effects of urban uses on agriculture would include, but are not limited to, the following:

- ▲ interference with agricultural operations (e.g. limitations on pesticide/herbicide applications, burning, operational hours, etc.);
- ▲ trespassing, vandalism, and theft because of the proximity of urban uses to agricultural areas; and

- ▲ land value impacts because of the proximity to urban areas which tends to increase land values in anticipation of future urban development. This increase reduces the probability that farmers would take long-term investments to maintain the productive potential of the land.

Conflicts between agriculture and urban uses mainly would affect the agricultural areas that would remain adjacent to the Krumenacher Ranch site. The efforts of future urban residents to reduce potential risks and nuisances emanating from surrounding agricultural areas could become a major constraint on agricultural operations. These constraints could result in increasing operational costs, phasing out of crops, moving operations which create nuisances for adjacent urban areas, and, ultimately, removing lands from production. Currently, land areas direct north of West Elkhorn Boulevard are out of production with no major agricultural activities occurring. In addition, the land area north of West Elkhorn Boulevard is part of the proposed Natomas North Precinct Master Plan that would consist of 5,699 acres that would include residential (20,477 dwelling units), commercial, and public uses. This project is located directly north of the project area along West Elkhorn Boulevard. If the Natomas North Precinct Master Plan is urbanized north of Krumenacher Ranch site, the need for a buffer would become unnecessary. The design of future development on the Krumenacher Ranch would be subject to City agricultural buffering policies, such as North Natomas Community Plan Policy NN.ERC 1.10 which requires an agricultural buffer consisting of a 250-foot-wide strip of land along the south side of West Elkhorn Boulevard. As described in the City of Sacramento General Plan Master EIR, the General Plan policies were found to adequately “ensure that land uses within the Policy Area would not adversely affect agricultural productivity on surrounding, nearby agricultural operations” and this impact was considered less than significant (City of Sacramento 2015: pp 4.1-5).

Mitigation Measures

No mitigation measure is required.

5.1.4 Cumulative Setting, Impacts, and Mitigation

CUMULATIVE SETTING

The agricultural resources cumulative setting consists of Sacramento County and the state. The existing and projected future urban development throughout the state is expected to further contribute to the loss of important farmlands. The cumulative impact analysis takes into account planned and proposed development anticipated in Sacramento County (see Section 5.0 for a further description of cumulative growth conditions); however, it is acknowledged that cumulative important farmland conversion contributions by the project are of a statewide concern.

CUMULATIVE IMPACTS AND MITIGATION MEASURES

Impact 5.1-3: Cumulative Loss of Agricultural Lands

Implementation of the project in combination with potential development in the region would not contribute to the loss of Important Farmland as defined in Public Resources Code Section 21060.1 and Appendix G of the CEQA Guidelines. This contribution would be **less than cumulatively considerable**.

Between 20123 to 2014, Sacramento County lost 3,276 acres of Important Farmland (Prime Farmland, Unique Farmland, or Farmland of Statewide Importance) (DOC 2014). This loss of important farmland is also occurring state-wide and is significant cumulative impact. As described above, the project area is within an area planned for development by the City under its General Plan. In addition, the agricultural land that would be lost through development of the project is not “Important Farmland” as defined by Public Resources Code Section 21060.1 and Appendix G of the CEQA Guidelines and would not contribute to the cumulative loss of important farmland.

Future development of Krumenacher Ranch compatibility with adjacent agricultural uses is a site-specific issue (Impact 5.1-2) and would be mitigated to a less-than-significant impact through compliance with buffering requirements of North Natomas Community Plan Policy NN.ERC 1.10 which requires an agricultural buffer consisting of a 250-foot-wide strip of land along the south side of West Elkhorn Boulevard. Thus, the project **would not have a considerable contribution** to significant cumulative impacts on the loss of important farmlands or conflicts with agricultural operations.

Mitigation Measures

No mitigation is required.

5.2 AIR QUALITY

This section includes a discussion of existing air quality conditions, a summary of applicable regulations, and an analysis of potential construction and operational air quality impacts caused by proposed development of the Panhandle Annexation and Planned Unit Development (PUD) project area (referred to as “project”). Mitigation measures are recommended as necessary to reduce significant air quality impacts to the extent feasible.

The following comments were received in response to the Notice of Preparation (see Appendix A) that are addressed in this section:

- ▲ Potential for nuisance impacts (odors) associated with adjacent agricultural operations

5.2.1 Environmental Setting

The project area is located within the North Natomas Community Plan (NNCP) planning area, within Sacramento County, California, which is within the Sacramento Valley Air Basin (SVAB). The SVAB also includes all of Butte, Colusa, Glenn, Sacramento, Shasta, Sutter, Tehama, Yolo, and Yuba Counties; the western portion of Placer County; and the eastern portion of Solano County. The ambient concentrations of air pollutant emissions are determined by the amount of emissions released by the sources of air pollutants and the atmosphere’s ability to transport and dilute such emissions. Natural factors that affect transport and dilution include terrain, wind, atmospheric stability, and sunlight. Therefore, existing air quality conditions in the area are determined by such natural factors as topography, meteorology, and climate, in addition to the amount of emissions released by existing air pollutant sources, as discussed separately below.

CLIMATE, METEOROLOGY, AND TOPOGRAPHY

The SVAB is a relatively flat area bordered by the north Coast Ranges to the west and the northern Sierra Nevada to the east. Air flows into the SVAB through the Carquinez Strait, the only breach in the western mountain barrier, and moves across the Sacramento River–San Joaquin River Delta (Delta) from the San Francisco Bay area.

The Mediterranean climate type of the SVAB is characterized by hot, dry summers and cool, rainy winters. During the summer, daily temperatures range from 50 degrees Fahrenheit (°F) to more than 100°F. The inland location and surrounding mountains shelter the area from much of the ocean breezes that keep the coastal regions moderate in temperature. Most precipitation in the area results from air masses that move in from the Pacific Ocean, usually from the west or northwest, during the winter months. More than half the total annual precipitation falls during the winter rainy season (November through February); the average winter temperature is a moderate 49°F. Also, characteristic of SVAB winters are periods of dense and persistent low-level fog, which are most prevalent between storms. The prevailing winds are moderate in speed and vary from moisture-laden breezes from the south to dry land flows from the north.

The mountains surrounding the SVAB create a barrier to airflow, which leads to the entrapment of air pollutants when meteorological conditions are unfavorable for transport and dilution. The highest frequency of poor air movement occurs in the fall and winter when high-pressure cells are present over the SVAB. The lack of surface wind during these periods, combined with the reduced vertical flow caused by a decline in surface heating, reduces the influx of air and leads to the concentration of air pollutants under stable meteorological conditions. Surface concentrations of air pollutant emissions are highest when these conditions occur in combination with agricultural burning activities or with temperature inversions, which hamper dispersion by creating a ceiling over the area and trapping air pollutants near the ground.

May through October is ozone season in the SVAB. This period is characterized by poor air movement in the mornings with the arrival of the Delta sea breeze from the southwest in the afternoons. In addition, longer daylight hours provide a plentiful amount of sunlight to fuel photochemical reactions between reactive organic gases (ROG) and nitrogen oxides (NO_x), which result in ozone formation. Typically, the Delta breeze transports air pollutants northward out of the SVAB; however, a phenomenon known as the Schultz Eddy prevents this from occurring during approximately half of the time from July to September. The Schultz Eddy phenomenon causes the wind to shift southward and blow air pollutants back into the SVAB. This phenomenon exacerbates the concentration of air pollutant emissions in the area and contributes to the area violating the ambient-air quality standards.

The local meteorology of the project area and surrounding area is represented by measurements recorded at the Western Regional Climate Center (WRCC) Sacramento 5 ESE station. The normal annual precipitation is approximately 18 inches. January temperatures range from a normal minimum of 40 °F to a normal maximum of 53.5 °F. July temperatures range from a normal minimum of 59.2 °F to a normal maximum of 92 °F (WRCC 2015). The predominant wind direction is from the south (WRCC 2017).

CRITERIA AIR POLLUTANTS

Concentrations of emissions from criteria air pollutants are used to indicate the quality of the ambient air. A brief description of key criteria air pollutants in the SVAB and their health effects is provided below. Criteria air pollutants include ozone, carbon monoxide (CO), nitrogen dioxide (NO₂), sulfur dioxide (SO₂) particulate matter (PM₁₀ and PM_{2.5}), and lead. However, for the purposes of this analysis, criteria air pollutants of primary concern due to their nonattainment status include ozone (and ozone precursors) and particulate matter. Sacramento County's attainment status for the California ambient air quality standards (CAAQS) and the national ambient air quality standards (NAAQS) are shown in Table 5.2-1. Monitoring data applicable to the project area is provided in Table 5.2-2.

Ozone

Ozone is a photochemical oxidant (a substance whose oxygen combines chemically with another substance in the presence of sunlight) and the primary component of smog. Ozone is not directly emitted into the air but is formed through complex chemical reactions between precursor emissions of ROG and NO_x in the presence of sunlight. ROG are volatile organic compounds that are photochemically reactive. ROG emissions result primarily from incomplete combustion and the evaporation of chemical solvents and fuels. NO_x are a group of gaseous compounds of nitrogen and oxygen that result from the combustion of fuels. Emissions of the ozone precursors ROG and NO_x have decreased over the past several years because of more stringent motor vehicle standards and cleaner burning fuels. Emissions of ROG and NO_x decreased from 2000 to 2010 and are projected to continue decreasing from 2010 to 2035 (ARB 2013).

Acute health effects of ozone exposure include increased respiratory and pulmonary resistance, cough, pain, shortness of breath, and lung inflammation. Chronic health effects include permeability of respiratory epithelia and possibility of permanent lung impairment (EPA 2016).

Nitrogen Dioxide

NO₂ is a brownish, highly reactive gas that is present in all urban environments. The major human-made sources of NO₂ are combustion devices, such as boilers, gas turbines, and mobile and stationary reciprocating internal combustion engines. Combustion devices emit primarily nitric oxide (NO), which reacts through oxidation in the atmosphere to form NO₂. The combined emissions of NO and NO₂ are referred to as NO_x and are reported as equivalent NO₂. Because NO₂ is formed and depleted by reactions associated with photochemical smog (ozone), the NO₂ concentration in a particular geographical area may not be representative of the local sources of NO_x emissions (EPA 2012).

Acute health effects of exposure to NO_x includes coughing, difficulty breathing, vomiting, headache, eye irritation, chemical pneumonitis, or pulmonary edema, breathing abnormalities, cough, cyanosis, chest pain, rapid heartbeat, and death. Chronic health effects include chronic bronchitis and decreased lung function (EPA 2016).

Particulate Matter

Respirable particulate matter with an aerodynamic diameter of 10 micrometers or less is referred to as PM₁₀. PM₁₀ consists of particulate matter emitted directly into the air, such as fugitive dust, soot, and smoke from mobile and stationary sources, construction operations, fires and natural windblown dust, and particulate matter formed in the atmosphere by reaction of gaseous precursors (ARB 2013). Fine particulate matter (PM_{2.5}) includes a subgroup of smaller particles that have an aerodynamic diameter of 2.5 micrometers or less. PM₁₀ emissions in the SVAB are dominated by emissions from area sources, primarily fugitive dust from vehicle travel on unpaved and paved roads, farming operations, construction and demolition, and particles from residential fuel combustion. Direct emissions of PM₁₀ are projected to remain relatively constant through 2035. Direct emissions of PM_{2.5} have steadily declined in the SVAB between 2000 and 2010 and then are projected to increase very slightly through 2035. Emissions of PM_{2.5} in the SVAB are dominated by the same sources as emissions of PM₁₀ (ARB 2013).

Acute health effects of PM₁₀ exposure include breathing and respiratory symptoms, aggravation of existing respiratory and cardiovascular diseases, and premature death. Chronic health effects include alterations to the immune system and carcinogenesis (EPA 2016).

Table 5.2-1 Attainment Status Designations for Sacramento County

Pollutant	Federal Standard	State Standard
Ozone	Attainment (1-hour) ¹	Nonattainment (1-hour) Classification=Serious ²
	Nonattainment (8-hour) ³ Classification=Severe	Nonattainment (8-hour)
	Nonattainment (8-hour) ⁴ Classification=Severe	
Respirable particulate matter (PM ₁₀)	Attainment (24-hour)	Nonattainment (24-hour)
		Nonattainment (Annual)
Fine particulate matter (PM _{2.5})	Nonattainment (24-hour)	(No State Standard for 24-Hour)
	Attainment (Annual)	Attainment (Annual)
Carbon monoxide (CO)	Attainment (1-hour)	Attainment (1-hour)
	Attainment (8-hour)	Attainment (8-hour)
Nitrogen dioxide (NO ₂)	Unclassified/Attainment (1-hour)	Attainment (1-hour)
	Unclassified/Attainment (Annual)	Attainment (Annual)
Sulfur dioxide (SO ₂) ⁵	(Attainment Pending) (1-Hour)	Attainment (1-hour)
		Attainment (24-hour)
Lead (Particulate)	Attainment (3-month rolling avg.)	Attainment (30-day average)
Hydrogen Sulfide	No Federal Standard	Unclassified (1-hour)
Sulfates		Attainment (24-hour)
Visibly Reducing Particles		Unclassified (8-hour)
Vinyl Chloride		Unclassified (24-hour)

Notes:

¹ Air Quality meets federal 1-hour Ozone standard (77 FR 64036). EPA revoked this standard, but some associated requirements still apply. SMAQMD attained the standard in 2009. SMAQMD has requested EPA recognize attainment to fulfill the requirements.

² Per Health and Safety Code (HSC) § 40921.5(c), the classification is based on 1989 - 1991 data, and therefore does not change.

³ 1997 Standard.

⁴ 2008 Standard.

⁵ 2010 Standard.

Source: SMAQMD 2016

MONITORING STATION DATA AND ATTAINMENT DESIGNATIONS

Criteria air pollutant concentrations are measured at several monitoring stations in the SVAB. The Sacramento-Goldenland Court station is the closest station to the project area with recent data for ozone and PM₁₀. There was no data available for PM_{2.5} in the 2013 or 2014 at the Sacramento-Goldenland Court station, so data from the next closest station (Sacramento-Del Paso Manor) was used. 2015 data was available for PM_{2.5} at Sacramento-Goldenland Court station. Table 5.2-2 summarizes the air quality data from the last three years (2013-2015).

Both ARB and EPA use this type of monitoring data to designate areas according to their attainment status for criteria air pollutants (attainment designations are summarized above in Table 5.2-1).

Table 5.2-2 Summary of Annual Data on Ambient Air Quality (2013-2015)¹

	2013	2014	2015
Ozone			
Maximum concentration (1-hr/8-hr avg, ppm)	0.090/0.073	0.088/0.077	0.086/0.079
Number of days state standard exceeded (1-hr/8-hr)	0/2	0/4	0/6
Number of days national standard exceeded (8-hr)	0	1	1
Fine Particulate Matter (PM_{2.5})			
Maximum concentration (24-hour µg/m ³)	59.5 ²	39.5 ²	38.8
Number of days national standard exceeded (24-hour measured ²)	13.0 ²	0 ²	3.5 ²
Respirable Particulate Matter (PM₁₀)			
Maximum concentration (µg/m ³)	51.0	35.0	54.0
Number of days state standard exceeded	6.0	0	6.1
Number of days national standard exceeded	N/A ³	0	0
Notes: µg/m ³ = micrograms per cubic meter; ppm = parts per million			
¹ Measurements from the Sacramento-Goldenland Court station for ozone, respirable particulate matter (PM ₁₀), and fine particulate matter (PM _{2.5}).			
² Data was unavailable for Sacramento-Goldenland Court station, thus next closest station data was used (Sacramento-Del Paso Manor station).			
³ There was no data available to determine the value.			
Source: ARB 2016b			

TOXIC AIR CONTAMINANTS

According to the *California Almanac of Emissions and Air Quality* (ARB 2013), the majority of the estimated health risks from TACs can be attributed to relatively few compounds, the most important being diesel PM. Diesel PM differs from other TACs in that it is not a single substance, but rather a complex mixture of hundreds of substances. Although diesel PM is emitted by diesel-fueled internal combustion engines, the composition of the emissions varies depending on engine type, operating conditions, fuel composition, lubricating oil, and whether an emissions control system is being used. Unlike the other TACs, no ambient monitoring data are available for diesel PM because no routine measurement method currently exists. However, ARB has made preliminary concentration estimates based on a PM exposure method. This method uses the ARB emissions inventory's PM₁₀ database, ambient PM₁₀ monitoring data, and the results from several studies to estimate concentrations of diesel PM. In addition to diesel PM, the TACs for which data are available that pose the greatest existing ambient risk in California are benzene, 1,3-butadiene, acetaldehyde, carbon tetrachloride, hexavalent chromium, para-dichlorobenzene, formaldehyde, methylene chloride, and perchloroethylene.

Diesel PM poses the greatest health risk among these 10 TACs mentioned. Based on receptor modeling techniques, ARB estimated its health risk to be 360 excess cancer cases per million people in the SVAB in the year 2000. Since 1990, the health risk associated with diesel PM has been reduced by 52 percent. Overall, levels of most TACs, except para-dichlorobenzene and formaldehyde, have decreased since 1990 (ARB 2013).

ODORS

Odors are generally regarded as an annoyance rather than a health hazard. However, manifestations of a person's reaction to foul odors can range from psychological (e.g., irritation, anger, or anxiety) to physiological (e.g., circulatory and respiratory effects, nausea, vomiting, and headache). The ability to detect odors varies considerably among the population and overall is quite subjective. Some individuals can smell very minute quantities of specific substances; others may not have the same sensitivity but may have sensitivities to odors of other substances. In addition, people may have different reactions to the same odor; an odor that is offensive to one person may be perfectly acceptable to another (e.g., fast food restaurant). It is important to also note that an unfamiliar odor is more easily detected and is more likely to cause complaints than a familiar one. This is because of the phenomenon known as odor fatigue, in which a person can become desensitized to almost any odor and recognition only occurs with an alteration in the intensity.

Existing odor sources in the project vicinity include Syar Concrete, LLC located at 830 West Elkhorn Boulevard, Rio Linda CA 95673, approximately 400 feet to the east of the project area and John Taylor Fertilizer located at 841 West Elkhorn Boulevard, Rio Linda CA 95673, approximately 1,200 feet to the northeast of the project area.

SENSITIVE LAND USES

Sensitive receptors are generally considered to include those land uses where exposure to pollutants could result in health-related risks to sensitive individuals, such as children or the elderly. Residential dwellings, schools, hospitals, playgrounds, and similar facilities are of primary concern because of the presence of individuals particularly sensitive to pollutants and/or the potential for increased and prolonged exposure of individuals to pollutants.

New residences would be constructed as part of the project and located throughout the project area. An elementary school and retail center is proposed. The closest nearby existing sensitive receptors consist primarily of residential land uses located along the northern, western, and southeastern boundaries of the project area. Natomas Charter School is located adjacent to the southwestern boundary of the project area, along Del Paso Road.

5.2.2 Regulatory Setting

Air quality within the project area is regulated through the efforts of various federal, State, regional, and local government agencies. These agencies work jointly, as well as individually, to improve air quality through legislation, planning, policy-making, education, and a variety of other programs. The agencies responsible for improving the air quality within the air basins are discussed below.

FEDERAL

U.S. ENVIRONMENTAL PROTECTION AGENCY

The EPA has been charged with implementing national air quality programs. EPA's air quality mandates are drawn primarily from the federal Clean Air Act (CAA), which was enacted in 1970. The most recent major amendments made by Congress were in 1990.

Criteria Air Pollutants

The CAA required EPA to establish national ambient air quality standards (NAAQS). As shown in Table 5.2-3, EPA has established primary and secondary NAAQS for the following criteria air pollutants: ozone, carbon monoxide (CO), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), respirable and fine particulate matter (PM₁₀ and PM_{2.5}), and lead. The primary standards protect the public health and the secondary standards protect public welfare. The CAA also required each state to prepare a State implementation plan (SIP) for attaining and maintaining the NAAQS. The federal Clean Air Act Amendments of 1990 (CAAA) added requirements for states with nonattainment areas to revise their SIPs to incorporate additional control measures to reduce air pollution. The SIP is modified periodically to reflect the latest emissions inventories, planning documents, and rules and regulations of the air basins as reported by their jurisdictional agencies. EPA is responsible for reviewing all SIPs to determine whether they conform to the mandates of the CAA and its amendments, and whether implementation will achieve air quality goals. If EPA determines a SIP to be inadequate, a federal implementation plan that imposes additional control measures may be prepared for the nonattainment area. If an approvable SIP is not submitted or implemented within the mandated time frame, sanctions may be applied to transportation funding and stationary air pollution sources in the air basin.

Table 5.2-3 Ambient Air Quality Standards

Pollutant	Averaging Time	California ^{a,b}	National ^c	
			Primary ^{b,d}	Secondary ^{b,e}
Ozone	1-hour	0.09 ppm (180 µg/m ³)	– ^e	Same as primary standard
	8-hour	0.070 ppm (137 µg/m ³)	0.070 ppm (147 µg/m ³)	
Carbon monoxide (CO)	1-hour	20 ppm (23 mg/m ³)	35 ppm (40 mg/m ³)	Same as primary standard
	8-hour	9 ppm ^f (10 mg/m ³)	9 ppm (10 mg/m ³)	
Nitrogen dioxide (NO ₂)	Annual arithmetic mean	0.030 ppm (57 µg/m ³)	53 ppb (100 µg/m ³)	Same as primary standard
	1-hour	0.18 ppm (339 µg/m ³)	100 ppb (188 µg/m ³)	–
Sulfur dioxide (SO ₂)	24-hour	0.04 ppm (105 µg/m ³)	–	–
	3-hour	–	–	0.5 ppm (1300 µg/m ³)
	1-hour	0.25 ppm (655 µg/m ³)	75 ppb (196 µg/m ³)	–
Respirable particulate matter (PM ₁₀)	Annual arithmetic mean	20 µg/m ³	–	Same as primary standard
	24-hour	50 µg/m ³	150 µg/m ³	
Fine particulate matter (PM _{2.5})	Annual arithmetic mean	12 µg/m ³	12.0 µg/m ³	15.0 µg/m ³
	24-hour	–	35 µg/m ³	Same as primary standard
Lead ^f	Calendar quarter	–	1.5 µg/m ³	Same as primary standard
	30-Day average	1.5 µg/m ³	–	–
	Rolling 3-Month Average	–	0.15 µg/m ³	Same as primary standard
Hydrogen sulfide	1-hour	0.03 ppm (42 µg/m ³)	No national standards	
Sulfates	24-hour	25 µg/m ³		
Vinyl chloride ^f	24-hour	0.01 ppm (26 µg/m ³)		
Visibility-reducing particulate matter	8-hour	Extinction of 0.23 per km		

Notes: µg/m³ = micrograms per cubic meter; km = kilometers; ppb = parts per billion; ppm = parts per million.

^a California standards for ozone, carbon monoxide, SO₂ (1- and 24-hour), NO₂, particulate matter, 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.

Table 5.2-3 Ambient Air Quality Standards

Pollutant	Averaging Time	California ^{a,b}	National ^c	
			Primary ^{b,d}	Secondary ^{b,e}
<p>^b Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based on a reference temperature of 25 degrees Celsius (°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.</p> <p>^c National standards (other than ozone, particulate matter, and those based on annual averages or annual arithmetic means) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration in a year, averaged over three years, is equal to or less than the standard. The PM₁₀ 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. The PM_{2.5} 24-hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact the U.S. Environmental Protection Agency for further clarification and current federal policies.</p> <p>^d National primary standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.</p> <p>^e National secondary standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.</p> <p>^f The California Air Resources Board has identified lead and vinyl chloride as toxic air contaminants with no threshold 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.</p> <p>Source: ARB 2016a</p>				

Hazardous Air Pollutants and Toxic Air Contaminants

Toxic air contaminants (TACs), or in federal parlance, hazardous air pollutants (HAPs) are a defined set of airborne pollutants that may pose a present or potential hazard to human health. A TAC is defined as an air pollutant that may cause or contribute to an increase in mortality or in serious illness, or that may pose a hazard to human health. TACs are usually present in minute quantities in the ambient air; however, their high toxicity or health risk may pose a threat to public health even at low concentrations.

A wide range of sources, from industrial plants to motor vehicles, emit TACs. The health effects associated with TACs are quite diverse and generally are assessed locally, rather than regionally. TACs can cause long-term health effects such as cancer, birth defects, neurological damage, asthma, bronchitis, or genetic damage; or short-term acute effects such as eye watering, respiratory irritation (a cough), running nose, throat pain, and headaches.

For evaluation purposes, TACs are separated into carcinogens and non-carcinogens based on the nature of the physiological effects associated with exposure to the pollutant. Carcinogens are assumed to have no safe threshold below which health impacts would not occur. This contrasts with CAPs for which acceptable levels of exposure can be determined and for which the ambient standards have been established (Table 5.2-3). Cancer risk from TACs is expressed as excess cancer cases per one million exposed individuals, typically over a lifetime of exposure.

EPA and, in California, the Air Resources Board (ARB) regulate HAPs and TACs, respectively, through statutes and regulations that generally require the use of the maximum available control technology or best available control technology for toxics to limit emissions.

STATE

Air Resources Board (ARB) is the agency responsible for coordination and oversight of State and local air pollution control programs in California and for implementing the California Clean Air Act (CCAA). The CCAA, which was adopted in 1988, required ARB to establish California ambient air quality standards (CAAQS) (Table 5.2-3).

Criteria Air Pollutants

ARB has established CAAQS for sulfates, hydrogen sulfide, vinyl chloride, visibility-reducing particulate matter, and the above-mentioned criteria air pollutants. In most cases the CAAQS are more stringent than the NAAQS. Differences in the standards are generally explained by the health effects studies considered

during the standard-setting process and the interpretation of the studies. In addition, the CAAQS incorporate a margin of safety to protect sensitive individuals.

The CCAA requires that all local air districts in the state endeavor to attain and maintain the CAAQS by the earliest date practical. The CCAA specifies that local air districts should focus particular attention on reducing the emissions from transportation and area-wide emission sources, and provides air districts with the authority to regulate indirect sources.

Toxic Air Contaminants

TACs in California are regulated primarily through the Tanner Air Toxics Act (Assembly Bill [AB] 1807, Chapter 1047, Statutes of 1983) and the Air Toxics Hot Spots Information and Assessment Act of 1987 (AB 2588, Chapter 1252, Statutes of 1987). AB 1807 sets forth a formal procedure for ARB to designate substances as TACs. Research, public participation, and scientific peer review are required before ARB can designate a substance as a TAC. To date, ARB has identified more than 21 TACs and adopted EPA's list of HAPs as TACs. Most recently, particulate matter (PM) exhaust from diesel engines (diesel PM) was added to ARB's list of TACs.

After a TAC is identified, ARB then adopts an airborne toxics control measure for sources that emit that particular TAC. If a safe threshold exists for a substance at which there is no toxic effect, the control measure must reduce exposure below that threshold. If no safe threshold exists, the measure must incorporate best available control technology for toxics to minimize emissions.

The Hot Spots Act requires that existing facilities that emit toxic substances above a specified level prepare an inventory of toxic emissions, prepare a risk assessment if emissions are significant, notify the public of significant risk levels, and prepare and implement risk reduction measures.

ARB has adopted diesel exhaust control measures and more stringent emissions standards for various transportation-related mobile sources of emissions, including transit buses, and off-road diesel equipment (e.g., tractors, generators). Over time, the replacement of older vehicles will result in a vehicle fleet that produces substantially lower levels of TACs than under current conditions. Mobile-source emissions of TACs (e.g., benzene, 1-3-butadiene, diesel PM) have been reduced significantly over the last decade and will be reduced further in California through a progression of regulatory measures (e.g., Low Emission Vehicle/Clean Fuels and Phase II reformulated gasoline regulations) and control technologies. With implementation of ARB's Risk Reduction Plan, it is expected that diesel PM concentrations will be 85 percent less in 2020 in comparison to year 2000 (ARB 2000). Adopted regulations are also expected to continue to reduce formaldehyde emissions emitted by cars and light-duty trucks. As emissions are reduced, it is expected that risks associated with exposure to the emissions will also be reduced.

LOCAL

Sacramento Metropolitan Air Quality Management District

Criteria Air Pollutants

Sacramento Metropolitan Air Quality Management District (SMAQMD) is the primary agency responsible for planning to meet NAAQS and CAAQS in Sacramento County. SMAQMD works with other local air districts in the Sacramento region to maintain the region's portion of the SIP for ozone. The SIP is a compilation of plans and regulations that govern how the region and State will comply with the federal Clean Air Act requirements to attain and maintain the NAAQS for ozone. The Sacramento Region has been designated as a "severe" 8-hour ozone nonattainment area with an extended attainment deadline of June 15, 2019.

SMAQMD has developed a set of guidelines for use by lead agencies when preparing environmental documents. The guidelines contain thresholds of significance for criteria pollutants and TACs, and also make recommendations for conducting air quality analyses. After SMAQMD guidelines have been consulted and

the air quality impacts of a project have been assessed, the lead agency's analysis undergoes a review by SMAQMD. SMAQMD submits comments and suggestions to the lead agency for incorporation into the environmental document.

All projects are subject to adopted 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 be required to obtain 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 greater than 50 horsepower must have a SMAQMD permit or ARB portable equipment registration.
- ▲ **Rule 202:** New Source Review. The purpose of this rule is to provide for the issuance of authorities to construct and permits to operate at new and modified stationary air pollution sources and to provide mechanisms, including emission offsets, by which authorities to construct such sources may be granted without interfering with the attainment or maintenance of ambient air quality standards.
- ▲ **Rule 402:** Nuisance. A person shall not discharge from any source whatsoever such quantities of air contaminants or other materials which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or the public, or which endanger the comfort, repose, health, or safety of any such persons or the public, or which cause or have natural tendency to cause injury or damage to business or property.
- ▲ **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 area.
- ▲ **Rule 902:** Asbestos. The developer or contractor is required to notify SMAQMD of any regulated renovation or demolition activity. Rule 902 contains specific requirements for surveying, notification, removal, and disposal of material containing asbestos.

In addition, if modeled construction-generated emissions for a project are not reduced to less than SMAQMD's mass emission threshold (85 pounds per day [lb/day]) after the standard construction mitigation is applied, then SMAQMD recommends using an off-site construction mitigation fee. 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.

Toxic Air Contaminants

At the local level, air districts may adopt and enforce ARB control measures. Under SMAQMD Rule 201 ("General Permit Requirements"), Rule 202 ("New Source Review"), and Rule 207 ("Federal Operating Permit"), all sources that possess the potential to emit TACs are required to obtain permits from SMAQMD. Permits may be granted to these operations if they are constructed and operated in accordance with applicable regulations, including New Source Review standards and air toxics control measures. SMAQMD limits emissions and public exposure to TACs through a number of programs. SMAQMD prioritizes TAC-emitting stationary sources based on the quantity and toxicity of the TAC emissions and the proximity of the facilities to sensitive receptors. Sensitive receptors are people, or facilities that generally house people (e.g., schools, hospitals, residences), that may experience adverse effects from unhealthy concentrations of air pollutants.

Odors

Although offensive odors rarely cause any physical harm, they can be very unpleasant, leading to considerable stress among the public and often generating citizen complaints to local governments and SMAQMD. SMAQMD's Rule 402 (Nuisance) regulates odorous emissions.

City of Sacramento

City of Sacramento General Plan

The project area lies in an unincorporated area of Sacramento County; however, the site is planned to be annexed by the City of Sacramento. Therefore, the City's policies with respect to air quality would be applicable. Relevant policies and standards related to air quality are described below.

- ▲ Policy ER 6.1.1. The City shall work with the California Air Resources Board and the Sacramento Metropolitan Air Quality Management District (SMQAMD) to meet State and Federal ambient air quality standards in order to protect residents, regardless of age, culture, ethnicity, gender, race, socioeconomic status, or geographic location, from the health effects of air pollution.
- ▲ Policy ER 6.1.2. The City shall review proposed development projects to ensure projects incorporate feasible measures that reduce construction and operational emissions for reactive organic gases, nitrogen oxides, and particulate matter (PM₁₀ and PM_{2.5}) through project design.
- ▲ Policy ER 6.1.3. The City shall require development projects that exceed SMAQMD ROG and NO_x operational thresholds to incorporate design or operational features that reduce emissions equal to 15 percent from the level that would be produced by an unmitigated project.

City of Sacramento Climate Action Plan

The Sacramento Climate Action Plan (CAP) was adopted on February 14, 2012 by the Sacramento City Council and was incorporated into the 2035 General Plan. The CAP includes air quality goals, strategies, and implementation measures developed to help the city reach its goals. The City also developed a CAP Consistency Review Checklist to provide a streamlined review process for proposed new development projects which are subject to CEQA.

5.2.3 Impacts and Mitigation Measures

SIGNIFICANCE CRITERIA

Per Appendix G of the CEQA Guidelines and SMAQMD recommendations, air quality impacts are considered significant if the project would result in any of the following:

- ▲ cause construction-generated criteria air pollutant or precursor emissions to exceed the SMAQMD-recommended thresholds of 85 lb/day for NO_x, 80 lb/day and 14.6 tons/year for PM₁₀, and 82 lb/day and 15 tons/year for PM_{2.5} and uncontrolled construction-related dust emissions;
- ▲ result in a net increase in long-term operational criteria air pollutant or precursor emissions that exceed the SMAQMD-recommended thresholds of 65 lb/day for ROG and NO_x, 80 lb/day and 14.6 tons/year for PM₁₀, and 82 lb/day and 15 tons/year for PM_{2.5};
- ▲ result in long-term operational local mobile-source CO emissions that would violate or contribute substantially to concentrations that exceed the 1-hour CAAQS of 20 ppm or the 8-hour CAAQS of 9 ppm;
- ▲ expose sensitive receptors to a substantial incremental increase TAC emission-associated health risks that exceed 10 in 1 million for carcinogenic risk (i.e., the risk of contracting cancer) and/or a noncarcinogenic hazard index of 1.0 or greater; or

- ▲ create objectionable odors affecting a substantial number of people.

METHODS AND ASSUMPTIONS

The project area consists of approximately 590 acres that would be annexed to the City. The project involves development of 2,660 single-family units (including the assumed development of the Krumenacher Ranch site which is not currently proposed for development), a retail center of 101,277 square feet, an elementary school serving 500 students, and 56 acres of parkland and open space areas. The land use summary table can be found in Chapter 3, "Project Description." The East Natomas Education Complex (junior and senior high schools in the Twin Rivers Unified School District) located in the project area is not a component of the project and thus was not included in the air quality modeling and assessment.

Regional and local criteria air pollutant emissions and associated impacts, as well as impacts from TACs, CO concentrations, and odors were assessed in accordance with the City of Sacramento and SMAQMD-recommended methodologies.

Criteria Air Pollutants and Ozone Precursors

Construction-related emissions of criteria air pollutants and precursors were calculated using the California Emissions Estimator Model (CalEEMod) Version 2016.3.1 computer program, as recommended by the City of Sacramento and SMAQMD. Modeling was based on project-specific information (e.g., size, number of units being built, area to be graded, area to be paved, energy information), where available; reasonable assumptions based on typical construction activities; and default values in CalEEMod that are based on the project's location and land use type.

Construction of the project was assumed to begin in 2018. Although the actual construction schedule is unknown at this time, the earliest possible date that construction could occur was chosen. This assumption would be considered conservative as construction equipment fleet emissions are expected to decrease in the future with increased emission controls and standards. Project construction is anticipated to occur for a period of approximately seven years. The proposed park area and single-family housing is estimated to be constructed at a constant rate over the seven years of construction, with the retail center and elementary school construction occurring simultaneously in the first year of construction, representing the most intense construction year. For a detailed description of model input and output parameters and assumptions, refer to Appendix C.

To evaluate long-term operational impacts for land use development projects, such as the project, SMAQMD recommends that projects show consistency with the Sacramento Regional Ozone Attainment Plan (OAP) and the Sacramento Area Council of Governments (SACOG's) Metropolitan Transportation Plan/Sustainable Communities Strategy (MTP/SCS). SMAQMD has developed operational thresholds of significance for which projects with emissions that do not exceed these levels would be consistent with the air quality plans and thus not interfere with the regions' ability to meet air quality attainment targets.

The City of Sacramento General Plan Policy ER 6.1.3 requires that projects exceeding the SMAQMD ROG or NO_x threshold incorporate design or operational features that reduce emissions by at least 15 percent as compared to without project design features. In addition, SMAQMD recommends that an Air Quality Mitigation Plan (AQMP) be prepared for all projects that exceed the operational threshold of 65 pounds per day for ROG or NO_x to clearly demonstrate that emissions are reduced to the extent feasible. For projects that are included in the current SIP, SMAQMD recommends a 15 percent reduction of ozone precursor from mobile source emissions. For projects not considered in the SIP, SMAQMD recommends a 35 percent reduction of ozone precursors. The project was not included in the most recent 2016 MTP/SCS and or SIP and, therefore; consistent with SMAQMD guidance would need to achieve a 35 percent reduction in operational emissions to show consistency with regional air quality plans. In compliance with both the 2030 General Plan policies and SMAQMD guidance, the project has prepared an AQMP to define the processes by which emissions of ROG and NO_x would be reduced by 35 percent. The full text of the AQMP is included as Appendix D of this Draft EIR.

Operational emissions of criteria air pollutants and precursors were evaluated in accordance with SMAQMD Recommended Guidance for Land Use Emission Reduction Version 3.3 for Operational Emissions [(AQMP Guidance,) September 26, 2016]. Emission modeling was conducted using CalEEMod Version 2016.3.1. Emissions estimates included long-term operational emissions of ozone precursors (i.e., NO_x, ROG) associated with mobile-sources (i.e., trip generation) and stationary sources (e.g., area wide and energy consumption). Operational modeling was based on project-specific traffic information. For detailed modeling inputs and results refer to Appendix C.

To estimate mobile source emissions, CalEEMod was used in combination with project-specific traffic data included in the study conducted for the project (DKS 2017). The project-specific traffic study was used to obtain trip data, specifically daily vehicle miles traveled (VMT) associated with the existing conditions, existing plus project conditions, and the cumulative plus project conditions in 2036. In accordance with SMAQMD guidance for projects where a traffic study has been conducted, CalEEMod was used to estimate the project's emissions without any incorporated emission-reducing measures (i.e., unmitigated emissions scenario) and the project's emissions with project-specific traffic data and emission-reducing measures (i.e., mitigated emissions scenario). Emissions estimates from the two scenarios were compared to each other to achieve the 35 percent NO_x emission reduction target required for this project. See AQMP included in Appendix D for details regarding establishment of the 35 percent reduction target and incorporated emission reduction measures.

For the unmitigated emissions scenario, the proposed land uses and acreages were input into CalEEMod and all model defaults were left unchanged. The results from this run represent the unmitigated emissions of the project without accounting for any reduction measures included in the design of the project (e.g., density and mix of land uses, regional VMT benefits, project pedestrian and bicycle facilities). Project-related emissions (mitigated emissions scenario) were estimated using the project-specific VMT as provided by the traffic study for the project (DKS 2017: see Appendix H) and adjusted CalEEMod defaults to estimate emissions from mobile sources. The VMT attributed to the project was processed to include project-generated VMT that would occur in the City of Sacramento and Sacramento County. The project is assumed to be completely built out by 2036. However, CalEEMod operational years go in five-year increments after 2030, thus 2035 was used as the operational year for both emissions scenarios. See Appendix C for details regarding assumptions, inputs, and outputs for both the unmitigated and mitigated emissions scenarios.

Emissions from mobile sources, natural gas, and area-sources for both summer and winter were estimated using the applicable modules in CalEEMod. Emissions from consumer products and landscape maintenance activities were estimated as well. Operational emissions from all sources were estimated for the closest CalEEMod option to full build out (i.e., 2035). Maximum daily emissions were estimated for both the peak summer day and peak winter day.

Mobile CO Impacts, Health Risk, and Odors

The potential for project-generated traffic to result in concentrations of CO that exceed NAAQS and CAAQS for this pollutant was evaluated using SMAQMD-recommended screening criteria. The potential for CO hot-spots was further evaluated using a quantitative screening method recommended by SMAQMD, as described in Impact 5.2-3 below.

Health risk from project-generated construction- and operational-related emissions of TACs were assessed qualitatively. This assessment is based on the location from which construction- or operational-related TAC emissions would be generated by land uses developed under the project relative to on-site sensitive receptors as construction occurs, as well as the duration during which TAC exposure would occur.

Similarly, the assessment of odor-related impacts is based on the types of odor sources associated with the land uses that would be developed and their location relative to on-site receptors as the project is constructed.

PROJECT IMPACTS AND MITIGATION MEASURES

Impact 5.2-1: Construction emissions of criteria air pollutants and ozone precursors

Construction-related activities would result in project-generated emissions of ROG, NO_x, PM₁₀ and PM_{2.5} from site preparation (e.g., excavation, clearing), off-road equipment, material and equipment delivery trips, and worker commute trips, and other miscellaneous activities (e.g., building construction, asphalt paving, application of architectural coatings). Construction activities would result in mass emissions of NO_x that exceed SMAQMD's thresholds of 85 lb/day. Therefore, construction-generated emissions of NO_x could contribute to the existing nonattainment status of the SVAB for ozone. This impact would be **significant**.

Project construction-related activities would result in emissions of ROG, NO_x, PM₁₀, and PM_{2.5} (a subset of PM₁₀) from site preparation (e.g., excavation, clearing), off-road equipment, material delivery, worker commute trips, and other miscellaneous activities (e.g., building construction, asphalt paving, application of architectural coatings). Fugitive dust emissions of PM₁₀ and PM_{2.5} are associated primarily with site preparation and vary as a function of soil silt content, soil moisture, wind speed, acreage of disturbance, and vehicle miles traveled on and off the site. Emissions of ozone precursors, ROG and NO_x, are associated primarily with construction equipment and on-road mobile exhaust. Paving and the application of architectural coatings result in off-gas emissions of ROG. PM₁₀ and PM_{2.5} are also contained in vehicle exhaust.

Typical construction activities would require all-terrain forks, fork lifts, cranes, pick-up and fuel trucks, compressors, loaders, backhoes, excavators, dozers, scrapers, pavement compactors, welders, concrete pumps, concrete trucks, and off-road haul trucks, as well as other diesel-fueled equipment as necessary.

Construction activities could begin as early as 2018 and conservatively assumed to be complete in seven years. Ultimately, construction phasing and activities would be driven by prevailing market conditions in any given year. Conservative assumptions were used and individual phases were overlapped (i.e., site preparation, grading, building construction, and architectural coating) to account for construction activities occurring simultaneously. As such, reported emissions represent a conservative estimate of maximum daily emissions. It is also important to note that as construction continues in the future, equipment exhaust emission rates would decrease as newer, more emission-efficient construction equipment replaces older, less efficient equipment. For specific assumptions and modeling inputs, refer to Appendix C.

Table 5.2-4 summarizes the modeled maximum daily emissions from the construction activities by year over the estimated 7-year build out period (ending in 2024). Annual emissions for PM₁₀ and PM_{2.5} for each modeled year of construction were also estimated. Note that although the development projections suggest a 7-year buildout period, it is assumed that the project would be completed and operational by 2036. This is to account for any potential delays or construction schedule changes.

As shown in Table 5.2-4, maximum daily emissions of NO_x could potentially exceed applicable thresholds throughout the estimated 7-year buildout period. Daily emissions of ROG, PM₁₀, and PM_{2.5} and annual emissions of PM₁₀ and PM_{2.5} would not exceed the respective thresholds. However, due to the nonattainment status of the SVAB for PM, construction activities that result in fugitive dust emissions may result in adverse air quality impacts to existing surrounding land uses and may contribute to the existing adverse air quality condition in the SVAB. Further, as actual construction phasing is not known, it is possible that emissions may exceed or be below modeled emissions shown in Table 5.2-4. Nonetheless, based on conservative modeling, it is likely that emissions would exceed NO_x thresholds at some point during the construction phases. Therefore, construction emissions could contribute to the existing nonattainment condition in the SVAB with respect to the CAAQS and NAAQS for ozone and PM. This would be a **significant** impact.

Table 5.2-4 Summary of Maximum Daily Emissions of Criteria Air Pollutants and Precursors Associated with Project Construction

Construction Year	Emissions					
	ROG lb/day	NO _x lb/day	PM ₁₀ , lb/day (fugitive/exhaust/total)	PM ₁₀ , tons/year (fugitive/exhaust/total)	PM _{2.5} (fugitive/exhaust/total)	PM _{2.5} tons/year (fugitive/exhaust/total)
2018	79	184	39/8/47	<1	18/8/24	<1
2019	67	155	37/7/44	<1	18/7/24	<1
2020	66	143	37/6/43	<1	18/6/24	<1
2021	65	134	37/6/43	<1	18/5/23	<1
2022	63	113	37/5/42	<1	18/4/22	<1
2023	62	98	37/4/41	<1	18/4/22	<1
2024	62	94	37/4/41	<1	18/3/21	<1
SMAQMD Threshold of Significance	NONE	85	-/-/80	14.6	-/-/82	15
Exceed Significance Threshold?	N/A	Yes	No	No	No	No

Notes: CO = carbon monoxide; lb/day = pounds per day; N/A= not applicable; NO_x = oxides of nitrogen; PM₁₀ = respirable particulate matter; PM_{2.5} = fine particulate matter; ROG = reactive organic gases.

Bold values indicate emissions that would exceed local significance criteria. Total values may not add correctly due to rounding. See Appendix C for detailed input parameters and modeling results.

Source: Modeling performed by Ascent Environmental 2017.

Mitigation Measure 5.2-1: Construction exhaust and fugitive dust emissions controls

All individual public and private subsequent projects within the project area shall implement SMAQMD's Basic Construction Emission Control Practices and SMAQMD's Enhanced Exhaust Control Practices during any construction or ground disturbance activities to reduce construction-related fugitive dust emissions, diesel PM, and NO_x emissions. These measures are included below.

Basic Construction Fugitive Dust Emissions Control Practices

- ▲ Water all exposed surfaces two times daily. Exposed surfaces include, but are not limited to soil piles, graded areas, unpaved parking areas, staging areas, and access roads.
- ▲ Cover or maintain at least two feet of free board space on haul trucks transporting soil, sand, or other loose material on the site. Any haul trucks that would be traveling along freeways or major roadways should be covered.
- ▲ Use wet power vacuum street sweepers to remove any visible trackout mud or dirt onto adjacent public roads at least once a day. Use of dry power sweeping is prohibited.
- ▲ Limit vehicle speeds on unpaved roads to 15 miles per hour (mph).
- ▲ All roadways, driveways, sidewalks, parking lots to be paved should be completed as soon as possible. In addition, building pads should be laid as soon as possible after grading unless seeding or soil binders are used.
- ▲ Minimize idling time either by shutting equipment off when not in use or reducing the time of idling to 5 minutes [required by California Code of Regulations, Title 13, sections 2449(d)(3) and 2485]. Provide clear signage that posts this requirement for workers at the entrances to the site.

- ▲ Maintain all construction equipment in proper working condition according to manufacturer's specifications. The equipment must be checked by a certified mechanic and determined to be running in proper condition before it is operated.

Enhanced Exhaust Control Practices

- ▲ The project developer shall submit to the City and SMAQMD a comprehensive inventory of all off-road construction equipment, equal to or greater than 50 horsepower, that will be used an aggregate of 40 or more hours during any portion of the construction project prior to any grading activities. The inventory shall include the horsepower rating, engine model year, and projected hours of use for each piece of equipment. The project developer shall provide the anticipated construction timeline including start date, and name and phone number of the project manager and on-site foreman. The information shall be submitted at least 4 business days prior to the use of subject heavy-duty off-road equipment. The inventory shall be updated and submitted monthly throughout the duration of the project, except that an inventory shall not be required for any 30-day period in which no construction activity occurs.
- ▲ Prior to any grading activities, the project developer shall provide a plan for approval by the City and SMAQMD demonstrating that the heavy-duty off-road vehicles (50 horsepower or more) to be used in the construction project, including owned, leased, and subcontractor vehicles, will achieve a project wide fleet-average 20-90 percent NO_x reduction (depending on available technology and engine Tier) and 45 percent particulate reduction compared to the most recent ARB fleet average. This plan shall be submitted in conjunction with the equipment inventory. Acceptable options for reducing emissions may include use of late model engines, low-emission diesel products, alternative fuels, engine retrofit technology, after-treatment products, and/or other options as they become available.
- ▲ The project developer shall ensure that emissions from all off-road diesel powered equipment used on the project area do not exceed 40 percent opacity for more than three minutes in any one hour. Any equipment found to exceed 40 percent opacity (or Ringelmann 2.0) shall be repaired immediately. Non-compliant equipment will be documented and a summary provided to the lead agency and SMAQMD monthly. A visual survey of all in-operation equipment shall be made at least weekly. A monthly summary of the visual survey shall not be required for any 30-day period in which no construction activity occurs. The monthly summary shall include the quantity and type of vehicles surveyed as well as the dates of each survey.
- ▲ If modeled construction-generated emissions of NO_x are not reduced to a level below SMAQMD's thresholds of significance by the application of Enhanced Exhaust Control Practices, then the project developer must pay a mitigation fee into SMAQMD's off-site mitigation program. By paying the appropriate off-site mitigation fee, construction-generated emissions of NO_x are reduced to a less-than-significant level. The fee calculation to offset daily NO_x emissions is based on the SMAQMD-determined cost to reduce one ton of NO_x (currently \$18,260 per ton but subject to change in future years).
 - The fee calculation shall be based on the sum of emissions associated with all individual construction activities or phases occurring within the project area boundary at any one time during the buildout period. Payment schedules shall be negotiated between SMAQMD and the developer and based on finalized construction parameters prior to the issuance of any grading permit or groundbreaking activities. If, for instance, the construction contractor of one builder is constructing one village while the construction contractor of another builder is constructing another village the developer is responsible for determining the proportion of necessary combined offset fees that each builder must contribute. Once initial construction activities are finalized by the developer, quantification of construction-related emissions shall be verified. As each individual construction phase is finalized throughout the duration of the project buildout, the mitigation fee shall be calculated based on current information, available construction equipment, and proposed construction activities. As construction activities occur over the buildout period, the developer shall work with SMAQMD to continually update mitigation fees based on actual on-the-ground emissions. The final mitigation fees shall be based on contractor equipment inventories provided by the developer to SMAQMD and shall reconcile any fee discrepancies due to schedule adjustments, and increased or decreased equipment inventories. Equipment inventories and NO_x emission estimates

for subsequent construction phases shall be coordinated with SMAQMD, and the off-site mitigation fee measure shall be assessed to any construction phase that would result in an exceedance of SMAQMD's mass emission threshold for NO_x.

Significance after Mitigation

Proposed dust control measures in Mitigation Measure 5.2-1 would result in a maximum of 75 percent reduction of fugitive PM₁₀ dust. Given that the PM₁₀ emissions are currently under the recommended threshold, it is not anticipated that with the implementation of the dust control measures the fugitive PM₁₀ emissions would exceed the 80 lb/day threshold, regardless of simultaneous construction phases occurring. Further, inclusion of SMAQMD's dust control measures provided in the above mitigation measure would minimize dust emissions such that the project would not contribute substantially to the nonattainment status of the SVAB.

Implementation of exhaust control measures in Mitigation Measure 5.2-1 would reduce NO_x emissions from off-road equipment by 20 percent (or higher depending on available technology); however, assuming a 20 percent reduction in NO_x, maximum daily emissions for construction occurring in years 2018 through 2022 would still exceed SMAQMD's recommended threshold. Thus, the required mitigated fee would be assessed and used to offset these emissions by providing funding for SMAQMD to implement emission reduction projects in the SVAB, such as installing newer engines on off-road equipment or installing EPA-certified woodstoves in the place of non-certified woodstoves in residential units. Thus, construction-generated NO_x levels would be reduced to a **less-than-significant** level.

Impact 5.2-2: Long-term operational emissions of air pollutants

Implementation of the project would result in long-term operational emissions of ROG, NO_x, and PM₁₀ that exceed SMAQMD's thresholds of significance (65 lb/day for ROG, 65 lb/day for NO_x, 80 lb/day and 14.6 tons/year for PM₁₀). Therefore, operation-generated emissions could conflict with the air quality planning efforts and contribute substantially to the nonattainment status of Sacramento County with respect to ozone and PM₁₀. This impact would be **significant**.

Project operations would result in the generation of long-term operational emissions of ROG, NO_x, and particulate matter (e.g., PM₁₀ and PM_{2.5}) as a result of mobile, stationary, and area-wide sources. Mobile-source emissions of criteria air pollutants and precursors would result from vehicle trips generated by residents, users of the parks, students at the elementary school, as well as by employee commute trips, and other associated vehicle trips (e.g., delivery of supplies, maintenance vehicles for commercial land uses). Stationary and area-wide sources would include the combustion of natural gas for space and water heating (i.e., energy use), the use of landscaping equipment and other small equipment, the periodic application of architectural coatings, and generation of ROG from the use of consumer products.

Table 5.2-5 summarizes the maximum daily operation-related emissions of criteria air pollutants during the winter and summer seasons, as well as annual emissions of PM₁₀ and PM_{2.5}, at full buildout. Table 5.2-6 shows the annual operation-related emissions of criteria air pollutants at full buildout. This is consistent with the AQMP prepared for the project, which calculates emission reductions from mitigation in tons per year (tons/year). Emissions were calculated based on proposed land uses and default trip rates in CalEEMod. As shown in Table 5.2-5, operation-related activities would result in project-generated daily emissions of NO_x, and PM₁₀ that exceed the SMAQMD-recommended thresholds of significance. As discussed above, projects that exceed operational thresholds of significance must prepare an AQMP and implement all feasible mitigation to show consistency with adopted air quality plans. The project was not included in the most recent MTP/SCS, which is used to develop mobile-source emissions inventories for the region, and therefore; to show consistency with adopted air quality plans and not conflict with the ozone attainment status of the region, SMAQMD has identified that the project would need to demonstrate a 35 percent reduction in operational emissions over unmitigated project emissions. Thus, NO_x and PM₁₀ emissions generated under full buildout of the project could conflict with long-term ozone planning efforts and/or contribute substantially to a net increase in concentrations of ozone for which Sacramento County is in nonattainment. This would be a **significant** impact. An Air Quality Mitigation Plan has been prepared to reduce project operational emissions and is provided in Appendix D.

Table 5.2-5 Summary of Maximum (Unmitigated) Operational Emissions of Criteria Air Pollutants and Precursors at Full Buildout (2036)

Source Type	Maximum Daily Emissions (lb/day)			
	ROG	NO _x	PM ₁₀	PM _{2.5}
SUMMER				
Area ¹	137	3	1	1
Energy ²	3	23	1	2
Mobile	38	151	125	34
Total Summer Daily Emissions	178	176	128	36
WINTER				
Area ¹	137	3	1	1
Energy ²	3	23	1	2
Mobile	27	156	125	34
Total Winter Daily Emissions	167	182	128	36
Annual Emissions			19.8 tons/year	5.7 tons/year
SMAQMD Threshold of Significance ³	65	65	80 lb/day and 14.6 tons/year	82 lb/day and 15 tons/year
Exceed Significance Threshold?	Yes	Yes	Yes	No

Notes: Notes: lb/day = pounds per day; NO_x = oxides of nitrogen; PM₁₀ = respirable particulate matter; PM_{2.5} = fine particulate matter; ROG = reactive organic gases; tons/year = tons per year.

¹ Area-source emissions include emissions from landscaping, application of architectural coatings, and consumer products, and are estimated based on default model settings. It was assumed that none of the residential units would be equipped with a fireplace.

² Energy emissions include off-site emissions associated with natural gas consumption for space heating/cooling, and appliance use.

³ Mass emission significance criteria apply to the sum of area, energy, and mobile sources.

Bold values indicate emissions that would exceed local significance criteria. Total values may not add correctly due to rounding. See Appendix C for detailed input parameters and modeling results.

Source: Modeling performed by Ascent Environmental 2017.

Table 5.2-6 Summary of Annual (Unmitigated) Operational Emissions of Criteria Air Pollutants and Precursors at Full Buildout (2036)

Source Type	Annual Emissions (tons/year)			
	ROG	NO _x	PM ₁₀	PM _{2.5}
Area ¹	24.6	0.3	0.2	0.2
Energy ²	0.5	4.2	0.3	0.3
Mobile	4.8	24.8	29.6	8.0
Total Annual Emissions	29.9	29.4	30.1	8.5
SMAQMD Threshold of Significance ^{3,4}	NA	NA	14.6	15
Exceed Significance Threshold?	NA	NA	Yes	No

Notes: Notes: tons/year = tons per year; NO_x = oxides of nitrogen; PM₁₀ = respirable particulate matter; PM_{2.5} = fine particulate matter; ROG = reactive organic gases; NA = not applicable.

¹ Area-source emissions include emissions from landscaping, application of architectural coatings, and consumer products, and are estimated based on default model settings. It was assumed that none of the residential units would be equipped with a fireplace.

² Energy emissions include off-site emissions associated with natural gas consumption for space heating/cooling, and appliance use.

³ Mass emission significance criteria apply to the sum of area, energy, and mobile sources.

⁴ SMAQMD has adopted tons/year operational thresholds for only PM₁₀ and PM_{2.5}.

Bold values indicate emissions that would exceed local significance criteria. Total values may not add correctly due to rounding. See Appendix C for detailed input parameters and modeling results.

Source: Modeling performed by Ascent Environmental 2017.

Mitigation Measure 5.2-2: Implement provisions of the Air Quality Mitigation Plan to reduce operational emissions

Implementation of the following measure requires compliance with the project's AQMP, which would reduce the project's operational ozone precursors by 35 percent in comparison to the unmitigated project.

The final Panhandle PUD master parcel map shall include the following reduction measures, which are detailed within the AQMP (Appendix D of the Draft EIR), as conditions of approval:

- ▲ Incorporate traffic calming measures
 - Design project roads to reduce motor vehicle speed through the use of on street parking, planter strips, rumble strips, and other available methods.
 - Reduce speeds at project intersections by including marked intersections, count-down signal timers, median islands, curb extensions, traffic circles, and other available methods
- ▲ Incorporate pedestrian network through
 - Removal of pedestrian barriers
 - Inclusion of sidewalks, a minimum of 5 feet wide, on all internal streets (with the exception of alleys if applicable)
 - Inclusion of designated pedestrian routes to existing external pedestrian facilities and streets
- ▲ Incorporate walkable design elements by:
 - providing connections to all roadways, bicycle paths, and pedestrian facilities touching the project boundaries
 - providing at least 36 intersections per square mile
- ▲ Participate in permanent trip reduction program through membership in a transportation management association
- ▲ Participate in SMAQMD's operational offset program for the purpose of reducing ROG, NO_x, and PM emissions that would involve the funding of the replacement of existing wood-burning devices in the region.

In addition to the conditions of approval required by this mitigation measure, the following text shall also be included in the Panhandle PUD:

"All amendments to the Panhandle PUD Guidelines with the potential to result in a change in ozone precursor emissions shall include an analysis which quantifies, to the extent practicable, the effect of the proposed Panhandle PUD Guidelines on ozone precursor emissions. The amendment shall not increase total ozone precursor emissions above what was considered in the AQMP for the entire project area and shall achieve the original 35 percent reduction in total overall project emissions. If the amendment would require a change in the AQMP to meet that requirement, then the proponent of the Panhandle PUD shall consult with SMAQMD on the revised analysis and shall prepare a revised AQMP for approval by the City, in consultation with SMAQMD."

Significance after Mitigation

Implementation of Mitigation Measure 5.2-2 requires the project to comply with all provisions included in the AQMP. This mitigation would be consistent with the 15 percent reduction provisions of General Plan Policy ER 6.1.3. Achievement of the 35 percent reduction in ozone precursors relies on the project's participation in an operational offset program that would involve the funding of the replacement of existing wood-burning devices in the region that would be managed by SMAQMD. This offset program would need to provide verifiable, quantifiable, and permanent emissions reductions equal to the mass emissions generated by the

project to satisfy CEQA mitigation requirements. A one-time fee shall be paid to SMAQMD that is equivalent to the amount of ozone precursors (ROG and NO_x) that exceed the 35 percent reduction target for the project. The fee would be established by SMAQMD and based on the current price per ton to offset emissions plus any administrative fees.

For purposes of this analysis, mitigated emissions are shown in tons/year of each pollutant, as recommended by SMAQMD. Considering all other on-site mitigation measures, the project would achieve up to a 15.9 percent reduction in operational NO_x and 2.8 percent ROG emissions over the unmitigated project. A summary of the mitigated emissions is included below in Table 5.2-7.

Table 5.2-7 Annual (Mitigated) Operational Emissions of Criteria Air Pollutants and Precursors at Full Buildout (2036)

Source-Type	tons/year			
	ROG	NO _x	PM ₁₀	PM _{2.5}
Area Source ¹	24.6	0.3	0.2	0.2
Energy	0.4	3.3	0.3	0.3
Mobile Source ²	4.0	21.2	17.8	4.8
Total Annual Emissions	29.0	24.8	18.2	5.2
On-site Reduction	-0.9	-4.6	-11.9	-0.4
ROG and NO _x Offsite Mitigation Reduction	-0.8	-4.1	-22.0	-22.0
Total Reductions	-1.7	-8.7	-33.9	-22.4
Total Mitigated Annual Emissions	28.2	20.7	-3.9	-13.9
SMAQMD Threshold of Significance ³	NA	NA	14.6	15
Exceed Significance Criteria?	NA	NA	No	No

Notes: NO_x = oxides of nitrogen; PM₁₀ = respirable particulate matter; PM_{2.5} = fine particulate matter; ROG = reactive organic gases; tons/year = tons per year; NA = not applicable.

¹ Area-source emissions include emissions from landscaping, application of architectural coatings, and consumer products, and are estimated based on default model settings. It was assumed that none of the single-family residential units would be equipped with fireplaces.

² Mobile-source emissions were estimated based on VMT data provided by DKS (2017).

³ SMAQMD has adopted annual operational thresholds only for PM₁₀ and PM_{2.5}.

Bold values indicate emissions that would exceed local significance criteria. Total values may not add correctly due to rounding. See Appendix C for detailed input parameters and modeling results.

Source: Modeling conducted by Ascent Environmental, Inc. 2017

With the incorporation of all measures included in Mitigation Measures 5.2-2, and thus the AQMP, the project would achieve an overall reduction in emissions when compared to the unmitigated emissions scenario (Table 5.2-5) of 35 percent. Further, the implementation of the ROG and NO_x offsite mitigation measure would result in a net reduction of PM₁₀ and PM_{2.5} emissions. Incorporation of all mitigation included in the AQMP would represent all available and feasible mitigation that the project could implement. Because SMAQMD-adopted operational thresholds for ROG and NO_x are daily mass emission thresholds, the tons/year emission reductions from the AQMP have been converted into lb/day in Table 5.2-8 below to compare emissions to the adopted thresholds. The tons/year emissions were converted by multiplying by 2,000 pounds per ton and then dividing by 365 days per year. However, even with a total project reduction of 35 percent, operational emissions of ROG and NO_x would continue to exceed SMAQMD thresholds of significance, as shown below in Table 5.2-8.

Table 5.2-8 Summary of Maximum Daily (Mitigated) Operational Emissions of Criteria Air Pollutants and Precursors at Full Buildout (2036)

Source Type	Maximum Daily Emissions (lb/day)			
	ROG	NO _x	PM ₁₀	PM _{2.5}
Total Annual Emissions	154.5	113.3	-21.4	-46.6
SMAQMD Threshold of Significance ³	65	65	80	82
Exceed Significance Threshold?	Yes	Yes	No	No

Notes: Notes: lb/year = pounds per year; NO_x = oxides of nitrogen; PM₁₀ = respirable particulate matter; PM_{2.5} = fine particulate matter; ROG = reactive organic gases; NA = not applicable.

¹ Area-source emissions include emissions from landscaping, application of architectural coatings, and consumer products, and are estimated based on default model settings. It was assumed that none of the residential units would be equipped with a fireplace.

² Energy emissions include off-site emissions associated with natural gas consumption for space heating/cooling, and appliance use.

³ Mass emission significance criteria apply to the sum of area, energy, and mobile sources.

Bold values indicate emissions that would exceed local significance criteria. Total values may not add correctly due to rounding. See Appendix C for detailed input parameters and modeling results.

Source: Modeling performed by Ascent Environmental 2017.

Thus, although the project may reduce operational emissions to the extent feasible, long-term emission reductions cannot be quantified or verified, and the possibility remains that emissions may not be reduced to a less than significant level into perpetuity. Project operations may contribute to the nonattainment status of the region and may conflict with the CAAQS and NAAQS. This would be a **significant and unavoidable impact**.

Impact 5.2-3: Mobile-source CO concentrations

Long-term operation-related local mobile-source emissions of CO generated by the development in the project area would not violate a standard or contribute substantially to an existing or projected air quality violation or expose sensitive receptors to substantial pollutant concentrations. As a result, this impact would be **less than significant**.

Local mobile-source CO emissions near roadway intersections are a direct function of traffic volume, speed, and delay. Transport of CO is extremely limited because it disperses rapidly with distance from the source under normal meteorological conditions. However, under certain meteorological conditions, CO concentrations near roadways and/or intersections may reach unhealthy levels at nearby sensitive land uses, such as residential units, hospitals, schools, and childcare facilities. As a result, it is recommended that CO not be analyzed at the regional level, but at the local level.

Construction would occur over at least 7 years and therefore traffic related to construction activities would also be spread over the duration of construction activities. As such, construction-generated traffic is not anticipated to result in large peaks at any one time over the course of construction. This analysis focuses on operational-related traffic.

Project-generated traffic would be associated primarily with the operational phase. At complete buildout, the project would generate up to 27,627 daily trips, including up to 2,006 trips during the a.m. peak hour and up to 2,080 during the p.m. peak hour (DKS 2017).

SMAQMD provides a screening methodology to determine whether CO emissions generated by traffic at congested intersections have the potential to exceed, or contribute to an exceedance of, the 8-hour CAAQS of 9.0 µg/m³ or the 1-hour CAAQS of 20.0 µg/m³. The screening methodology has two tiers of screening criteria. If the first set is not met, then the second tier may be applied. It states that the following criteria must be met:

First-Tier

A project will result in a less-than-significant impact to air quality for local CO if:

- ▲ Traffic generated by the project will not result in deterioration of intersection level of service (LOS) to LOS E or F; and
- ▲ The project will not contribute additional traffic to an intersection that already operates at LOS E or F.

Second-Tier

If all the following criteria are met, a project will result in a less-than-significant impact to air quality for local CO.

- ▲ The project will not result in an affected intersection experiencing more than 31,600 vehicles per hour;
- ▲ The project will not contribute traffic to a tunnel, parking garage, bridge underpass, urban street canyon, or below-grade roadway; or other locations where horizontal or vertical mixing of air will be substantially limited; and
- ▲ The mix of vehicle types at the intersection is not anticipated to be substantially different from the County average (as identified by CalEEMod model).

Based on the traffic study conducted (DKS 2017: Appendix H), the project would result in the deterioration of LOS to area intersections. This would include the following intersections: East Levee Road/Elkhorn Boulevard (Southbound); Sorento Road/Del Paso Road; and Kenmar Road/Del Paso Road (Northbound). Further, some intersections in the project vicinity (Sorento Road/Del Paso Road [Southbound], and Kenmar Road/Del Paso Road [Southbound]) already experience a LOS of E or F and would experience added traffic volume as a result of the project. Therefore, both conditions of the first tier of screening would occur so project traffic conditions are evaluated against SMAQMD's second tier of screening.

As described in the traffic study conducted for the project (Appendix H: Table 4.10-12), the project would generate a maximum of 2,006 trips during the a.m. peak hour and up to 2,080 during the p.m. peak hour. Therefore, none of the intersections would be anticipated to accommodate traffic volumes that would exceed 31,600 vehicles per hour, even assuming all trips occurred at the same intersection. The total trip generation of the project is 27,627, which is below the criteria for a single intersection. Also, due to stricter vehicle emissions standards in newer cars, new technology, and increased fuel economy, CO emissions are expected to be substantially lower in future years than under existing conditions. Furthermore, the project would not contribute traffic to a tunnel, parking garage, bridge underpass, urban street canyon, below-grade roadway, or other location in which horizontal or vertical mixing of mobile-source CO emissions would be substantially limited. Thus, project-generated local mobile-source CO emissions would not result in or substantially contribute to concentrations that exceed the 1-hour or 8-hour ambient air quality standards for CO. As a result, this impact would be **less than significant**.

Mitigation Measures

None required.

Impact 5.2-4: Exposure of sensitive receptors to TACs

Construction-related emissions of TACs associated with land uses developed under the project would not result in an incremental increase in cancer risk greater than 10 in one million or a hazard index greater than 1.0 at existing or future sensitive receptors. However, new TAC sources associated with commercial development may expose existing or new receptors to TAC emissions. This impact would be **significant**.

Exposure of sensitive receptors for TAC emissions from project-generated construction and operational sources is discussed separately below. The TAC that is the focus of this analysis is diesel PM because it is known that diesel PM would be emitted during project construction and operation. Although other TACs exist

(e.g., benzene, 1,3-butadiene, hexavalent chromium, formaldehyde, methylene chloride), they are primarily associated with industrial operations and the project would not include any industrial sources of other TACs.

Construction

Construction-related activities would result in temporary, intermittent emissions of diesel PM from the exhaust of off-road, heavy-duty diesel equipment for site preparation (e.g., demolition, clearing, grading); paving; application of architectural coatings; on-road truck travel; and other miscellaneous activities. For construction activity, diesel PM is the primary TAC of concern. On-road diesel-powered haul trucks traveling to and from the construction area to deliver materials and equipment are less of a concern because they would not stay on the site for long durations.

Particulate exhaust emissions from diesel fueled engines (i.e., diesel PM) was identified as a TAC by ARB in 1998. The potential cancer risk from the inhalation of diesel PM, as discussed below, outweighs the potential for all other health impacts (i.e., non-cancer chronic risk, short-term acute risk) and health impacts from other TACs (ARB 2003). With regards to exposure of diesel PM, the dose to which receptors are exposed is the primary factor used to determine health risk. Dose is a function of the concentration of a substance or substances in the environment and the duration of exposure to the substance. Dose is positively correlated with time, meaning that a longer exposure period would result in a higher level of health risk for any exposed receptor. Thus, the risks estimated for an exposed individual are higher if a fixed exposure occurs over a longer period of time. According to the Office of Environmental Health Hazard Assessment, Health Risk Assessments, which determine the exposure of sensitive receptors to TAC emissions, should be based on a 70- or 30-year exposure period; however, such assessments should be limited to the period/duration of activities associated with the project (OEHHA 2012:11-3).

Based on the emissions modeling conducted and presented in Table 5.2-4, above, maximum daily emissions of diesel exhaust PM₁₀, considered a surrogate for diesel PM, would not exceed approximately 8 lb/day during construction activity. Furthermore, even during the most intense year of construction (2018), emissions of diesel PM would be generated from different locations in the plan area rather than a single location as construction of various components are located throughout the project area. Consequently, it is important to consider that the use of off-road heavy-duty diesel equipment would be limited to the construction phase of up to seven years. However, each individual construction activity within this 7-year period would be much shorter. As construction progresses, activity intensity and duration would vary throughout the site. As such, no single existing or future receptor (i.e., as a part of the project) would be exposed to construction-related emissions of diesel PM for extended periods of time.

Regarding existing off-site receptors, residences are located approximately 100 feet to the east and west of the project area. Studies show that diesel PM is highly dispersive, and receptors must be in close proximity to emission sources to result in the possibility of exposure to concentrations of concern and must be in close proximity for a long duration of time. The prevailing wind direction is from the south, with no existing sensitive receptors located north of the project. Therefore, any TAC emissions that could occur during construction would likely not affect existing sensitive receptors. Given the temporary and intermittent nature of construction activities within specific locations in the project area (i.e., construction does not occur in any one part of the plan area during the 7-year buildout period) and that the prevailing wind direction is from the south, the dose of any exposure to diesel PM of any one receptor would be very limited (WRCC 2017).

Considering the relatively low mass of diesel PM emissions that would be generated by construction, the relatively short duration of diesel PM-emitting construction activity at any one location of the plan area, the distance to the nearest off-site sensitive receptors, the prevailing wind direction, and the highly dispersive properties of diesel PM, construction-related TAC emissions would not expose sensitive receptors to an incremental increase in cancer risk greater than 10 in 1 million or a hazard index greater than 1.0.

Long-Term Operation

Operation of the project would result in new sources of TACs associated with new vehicular trips on existing and new roadways as well as new sources of diesel PM associated with commercial delivery trucks occurring within the retail center. New TAC sources could expose existing surrounding land uses and new receptors to

TAC emissions. The project would also locate new sensitive land uses in close proximity to existing TAC sources associated with surrounding land uses and roadways.

In accordance with available guidance from SMAQMD and ARB, freeways or urban roadways experiencing 100,000 or more vehicles per day could expose sensitive receptors to adverse health risks. Based on the traffic study conducted, the project would result in a maximum of 27,627 daily trips (i.e., new TAC sources), traveling through 23 different intersections and multiple roadways (See Table 5.11-12 in Section 5.11, "Transportation and Circulation").

Further, existing traffic volumes along nearby roadways range from approximately 340 to 36,000 vehicles per day (DKS 2017). Project-generated traffic would add to the existing traffic volumes of these roads. The largest increase in traffic volume would occur on Del Paso Road, from Gateway Park Boulevard to Black Rock Drive, with an increase of 6,100 to a total traffic volume of 28,500 vehicles per day. The largest traffic volume would occur on Northgate Boulevard, from North Market Boulevard to Interstate 80 (I-80), with 39,700 vehicles per day. These traffic volumes do not exceed SMAQMD's or ARB's guidance of 100,000 vehicles per day, thus new and existing sensitive receptors would not be exposed to increased health risk.

In addition to new mobile-sources on local roadways, the project would include the development of 9.7 acres of retail and commercial land uses. Commercial and retail land uses may include loading docks for delivery trucks, resulting in diesel PM exhaust emissions from idling trucks that could expose existing or new sensitive receptors to TACs, depending on the location of the new commercial uses and proximity to off-site or new receptors.

With regards to the placement of new sensitive receptors near sources of TACs, the project would locate new residences near existing industrial uses such as Wilber-Ellis Co., a fertilizer and agricultural product manufacture located approximately 1,280 feet to the north east of the project area, and Syar Concrete, a ready mix concrete producer located approximately 365 feet to the east of the project area. Emission sources from fertilizer production facilities include fugitive particulate matter associated with rock unloading, handling, mixing, storage, and transfer and exhaust particulate matter emissions from the operation of dyers, coolers, and scrubbers. The facility may also emit hydrogen fluoride, which is identified as a TAC in the CAAA. Concrete manufacturing generates fugitive particulate matter emissions through the transfer of sand, truck loading, mixer loading, vehicle movement, and wind erosion at stockpiles.

Based on a public record search, these facilities currently hold a permit to operate from SMAQMD, which requires bag filters to control particulate matter from equipment operations, limits mass emissions of air pollutants and toxics, and requires operating conditions to prevent any off-site nuisance (i.e., dust or odor emissions). Further, prevailing wind in the project vicinity is from the south and therefore, any emissions that could occur would likely not affect the project area.

In addition to existing industrial land uses, the project area is located approximately 1 mile to the north of I-80. Traffic on I-80 is a primary source of TACs in the project vicinity, with traffic volumes of approximately 135,000 vehicles per day (Caltrans 2014). Guidance from SMAQMD's Recommended Protocol for Evaluating the Location of Sensitive Land Uses Adjacent to Major Roadways and ARB's Air Quality and Land Use Handbook recommends that new sensitive receptors should not be placed within 500 feet of freeways or urban streets with traffic volumes that exceed 100,000 vehicles per day (ARB 2005). Although the traffic volumes of I-80 exceed 100,000, the project area is not within 500 feet of I-80, thus new sensitive receptors as a result of the project would not be exposed to excessive health risk from I-80. No other roadways in the project vicinity experience volumes that exceed 100,000 vehicles per day (SMAQMD 2016).

In summary, the project-related construction activities would not expose nearby sensitive receptors to incremental increases in cancer, chronic, and acute risk that exceed applicable thresholds. However, the placement of new sources of diesel PM associated with commercial delivery trucks could expose new or existing sensitive receptors to increased TAC emissions. This impact would be **significant**.

Mitigation Measure 5.2-4: Incorporation of design features for retail center to address TACs.

To reduce exposure of existing or future receptors to diesel PM exhaust emissions at commercial loading dock, the following design measures shall be incorporated into the Panhandle Planned Unit Development Guidelines.

- ▲ Proposed commercial land uses that have the potential to emit TACs or host TAC-generating activity (e.g., loading docks) shall be located as far away from existing and proposed on-site sensitive receptors as possible such that they do not expose sensitive receptors to TAC emissions that exceed an incremental increase of 10 in 1 million for the cancer risk and/or a noncarcinogenic Hazard Index of 1.0.
- ▲ Loading dock design may incorporate the use of buildings or walls to shield commercial activity from nearby residences or other sensitive land uses.
- ▲ Signs shall be posted at all loading docks and truck loading areas which indicate that diesel powered delivery trucks must be shut off when not in use for longer than 5 minutes on the premises to reduce idling emissions.
- ▲ Sensitive receptors, such as residential units and daycare centers, shall not be located in the same building as dry-cleaning operations that use perchloroethylene. Dry-cleaning operations that use perchloroethylene shall not be located within 300 feet of any sensitive receptor. A setback of 500 feet shall be provided for operations with two or more machines.

Significance after Mitigation

Implementation of Mitigation Measure 5.2-4 would ensure that any new sources of TACs associated with the proposed commercial land uses would not expose existing or new sensitive land uses to excessive TAC levels. Thus, the project-generated TAC sources would not result in an increased health risk to existing levels in the project area and this impact would be reduced to **less than significant**.

Impact 5.2-5: Exposure of sensitive receptors to odors

The project would introduce new odor sources into the area (e.g., temporary diesel exhaust emissions during construction and delivery trucks associated with commercial land uses). However, these odor sources would be temporary, intermittent, and dissipate rapidly from the source. Further, the project would not locate land uses near any existing odor sources. Receptors located near the proposed retail center may be exposed to odorous emissions depending upon the land uses developed. As a result, potential exposure of sensitive receptors to odors would be considered a **significant impact**.

The occurrence and severity of odor impacts depends on numerous factors, including: the nature, frequency, and intensity of the source; wind speed and direction; and the sensitivity of the affected receptors. While offensive odors rarely cause any physical harm, they still can be very unpleasant, leading to considerable distress among the public and often generate citizen complaints to local governments and regulatory agencies. Projects with the potential to frequently expose a substantial number of people to objectionable odors would be deemed to have a significant impact.

Construction

Minor odors from the use of heavy-duty diesel equipment, and the laying of asphalt during project related construction activities would be intermittent and temporary, and would dissipate rapidly from the source with an increase in distance. While construction would occur intermittently over a 7-year buildout period, these types of odor-generating activities would not occur at any single location, or within proximity to off-site receptors, for an extended period of time. Existing off-site receptors include residences located approximately 100 feet to the east and west of the project area. Given the temporary and intermittent nature of construction activities within specific locations in the project area (i.e., construction does not occur in any one part of the plan area during the 7-year buildout period) and that the prevailing wind direction is from the south which would likely keep odor emissions away from adjacent existing land uses, project construction is not anticipated to result in an odor-related impact during the construction phase of the project.

Long-Term Operation

Operation of the project would include new commercial land uses which would likely result in diesel-fueled delivery trucks visiting loading docks at these areas; however, these types of sources are not different from those that currently deliver materials to existing land uses in developed urban areas and would be relatively short and infrequent. Facilities developed under the project would be subject to SMAQMD Rule 402 (Nuisance) regarding the control of nuisances, including odors. Receptors located in the general vicinity of such sources may be exposed to odorous emissions. These receptors could include the new residences built around the commercial development, as well as existing residences located adjacent to the project area, within 100 feet.

The project is not anticipated to result in the installation of any major odor emission sources that would result in a potentially significant impact to the occupants of the proposed on-site land uses. However, although specific retail uses have not yet been identified, uses considered to be minor sources of odors may be developed. Such sources typically include dry cleaning establishments, restaurants, and gasoline stations.

No major existing sources of odors have been identified in the project vicinity. A couple industrial land uses are located in the project vicinity that may result in intermittent emissions of odors, including John Taylor Fertilizer and Syar Concrete, located northeast of the project area along Elkhorn Boulevard. However, based on a review of odor complaints filed within the last 16 years, there has been four odor-related complaints associated with the fertilizer company, which is located approximately 1,200 feet from the project area (Jester, pers. comm., 2017). However, all permits to operate have been cancelled since then so it is likely that fertilizer production at this facility no longer occurs. SMAQMD permitting regulations, as described above, regulates emissions at these facilities and complaints are addressed as deemed necessary by air districts and the City. Based on the limited number of complaints in the past 16 years and the fact that the fertilizer company no longer holds active permits to operate, it is unlikely that these facilities would result in substantial odors in the future.

There are also occasional odors associated with existing agricultural activities in the surrounding area. The reader is referred to Section 5.1, "Agricultural Resources," and Impact 5.1-2 regarding compatibility issues with existing agricultural operations.

As a result, potential exposure of sensitive receptors to odors associated with proposed land uses in the project area and the siting of new sensitive receptors in proximity to existing odor sources would be considered **significant**.

Mitigation Measure 5.2-5: Incorporation of design features for retail center to address potential odor sources.

The project developer shall implement the following measures to reduce exposure of sensitive receptors to odorous emissions. These measures shall be incorporated into the Panhandle Planned Unit Development Guidelines.

- ▲ Land uses that have the potential to emit objectionable odorous emissions (e.g., dry cleaning establishments, and gasoline stations) shall be located as far away as possible from existing and proposed sensitive receptors or downwind of nearby receptors.
- ▲ If an odor-emitting facility is to occupy space in the retail area, odor control devices shall be installed to reduce the exposure of receptors to objectionable odorous emissions. SMAQMD shall be consulted to determine applicable/feasible control devices to be installed. Use of setbacks, site design considerations, and emission controls are typically sufficient to ensure that receptors located near retail uses would not be exposed to odorous emissions on a frequent basis.

Significance after Mitigation

Through implementation of the above mitigation measure, and given that emissions from such sources would typically be intermittent and would disperse rapidly with increased distance from the source,

implementation of the project would not be anticipated to result in a frequent exposure of a substantial number of people to odorous emissions. This impact would be reduced to a **less-than-significant level**.

5.2.4 Cumulative Setting, Impacts and Mitigation Measures

CUMULATIVE SETTING

Construction and operation of the project would result in emissions of criteria air pollutants in Sacramento County within the jurisdiction of the Sacramento Metropolitan Air Quality Control District (SMAQMD). Sacramento County is currently in nonattainment for Ozone, PM₁₀, and PM_{2.5} with respect to the California Ambient Air Quality Standards (CAAQS), and with respect to the National Ambient Air Quality Standards (NAAQS), in nonattainment for Ozone and PM_{2.5} but in attainment for PM₁₀.

Ozone impacts are the result of the cumulative emissions from numerous sources in the region and transport from outside the region. Ozone is formed in chemical reactions involving NO_x, ROG, and sunlight. All but the largest individual sources emit NO_x and ROG in amounts too small to have a measurable effect on ambient ozone concentrations by themselves. However, when all sources throughout the region are combined, they can result in severe ozone problems.

PM₁₀ and PM_{2.5} have a similar cumulative regional emphasis when particulates are entrained into the atmosphere and build to unhealthful levels over time. PM also has the potential to cause significant local problems during periods of dry conditions accompanied by high winds, and during periods of heavy earth disturbing activities. PM may have cumulative local impacts if, for example, several unrelated grading or earth moving activities are underway simultaneously at nearby sites. Operational-related PM is less likely to result in local cumulative impacts as operational PM sources tend to be spread throughout the region (i.e., vehicles traveling on roads), not affecting any one receptor. However, substantial increases in traffic on roadways already experiencing high traffic volumes may result in considerable contributions to nearby existing land uses.

Therefore, NO_x, ROG, and PM emissions from cumulative development (see Table 5-2) are significant in the air basin; the discussion below addresses whether the project's contribution is considerable.

CUMULATIVE IMPACTS AND MITIGATION MEASURES

Impact 5.2-6: Construction emissions of criteria air pollutants and precursors

Project-generated construction emissions would exceed applicable cumulative thresholds for NO_x only. Incorporated mitigation would reduce NO_x to levels below SMAQMD cumulative thresholds. In addition, mitigation measures would further reduce dust and construction equipment exhaust emissions. Project mitigated construction-related emissions would not exceed applicable thresholds. Therefore, the project's contribution to cumulative construction emissions **would not be cumulatively considerable**.

Sacramento County and SVAB are in state and federal nonattainment for particulate matter and ozone air quality standards. Construction activities in the region would add additional particulate matter and ozone emissions into the SVAB that may conflict with attainment efforts.

Project-related construction emissions of NO_x would exceed the applicable mass emission thresholds established by SMAQMD. The project developer would be required to pay a mitigation fee for every day that NO_x emissions exceed the 85 lbs/day SMAQMD threshold provided under Mitigation Measure 5.2-1. The mitigation fee program is designed to reduce emissions throughout the SMAQMD jurisdiction through various measures such as installing newer engines on construction equipment or installing U.S. Environmental Protection Agency (EPA) certified woodstoves in the place of non-certified woodstoves in

residential units. Incorporation of this mitigation would ensure that all additional NO_x emissions would be offset through the SMAQMD program and, therefore; project construction would not result in a considerable contribution to the regional air quality condition and would not interfere with attainment of CAAQS or NAAQS.

With regard to PM₁₀ and PM_{2.5}, project construction would not exceed SMAQMD thresholds (Table 5.2-4 of Impact 5.2-1). Nonetheless, Mitigation Measure 5.2-1 would reduce construction-related exhaust and fugitive dust emissions by requiring dust suppression and limiting equipment idle time. Thus, considering that worst-case construction related activities would not exceed SMAQMD adopted thresholds for PM and mitigation is in place to further reduce these emissions, construction-related PM emissions would not result in substantial concentrations at nearby receptors. Given that construction-related emissions would be mitigated to the extent feasible, construction-related emissions would not exceed SMAQMD cumulative threshold for criteria air pollutants and ozone precursors. Therefore, project short-term construction emissions **would not be cumulatively considerable**.

Mitigation Measures

No mitigation is required.

Impact 5.2-7: Long-term operational emissions of criteria air pollutants and precursors

Operation of the project would result in long-term increases in criteria air pollutants and ozone precursors from stationary, area, and mobile sources (i.e., VMT). Operational emissions would exceed SMAQMD thresholds of significance and therefore result in a cumulatively considerable contribution to regional air quality and may conflict with regional air quality planning efforts to improve air quality. All feasible mitigation has been incorporated into the project as described in the AQMP prepared for the project. However, given the uncertainty in the ability of mitigation to continue to reduce operational emissions into perpetuity, the project's contribution to this impact would be **cumulatively considerable**.

Air districts in California develop air quality attainment plans designed to reduce emissions of ozone precursors enough to attain the federal ozone standard by the earliest practicable date. Air quality attainment plans include a multitude of air pollution control strategies. When developing air quality attainment plans, air districts account for the emissions from all present and future development in the region by relying on city and county general plans. Thus, projects that are consistent with adopted general plans and the most recent air quality attainment plans would not conflict with regional air quality planning efforts and the ability of the region to meet reduction targets set by the adopted plans. In cases where projects are proposed that were not included in the adopted general plan or accounted for in regional air quality projections, SMAQMD has developed guidance and determined the level of emissions reduction that would be considered feasible, thus not conflicting with regional air quality attainment status. Because development of the project area was not accounted for in SACOG's 2016 MTP/SCS as a site for future planned development, emissions associated with development of the project are not accounted for in SMAQMD's current SIP. As a result, the SMAQMD has recommended that this project achieve a 35 percent reduction in operational emissions.

As discussed in Section 5.2, "Air Quality," operational-related emissions would exceed SMAQMD thresholds for NO_x, ROG, and PM₁₀, due primarily to increased VMT associated with new residential development. Projects that exceed established SMAQMD thresholds of significance would also contribute to the regional and thus cumulative air quality conditions. Consistent with SMAQMD guidance, an AQMP has been prepared for the project which includes various measures to reduce project operational ozone precursor emissions (i.e., ROG and NO_x) by 35 percent. Measures would include design features to incorporate pedestrian and bicycle amenities, reduce on-site traffic speed through traffic calming design, and a reduction in on-site natural gas use. Implementation of all available on-site reduction measures would not reduce project operational emission by 35 percent and therefore additional mitigation was incorporated to require the project developer to purchase emission credits equal to the level of daily operational emissions needed to meet the project's 35 percent emission reduction target. Refer to Appendix D for the AQMP and further details regarding incorporated emissions reduction measures.

Incorporation of all mitigation included in the AQMP would represent all available and feasible mitigation that the project could implement. However, and as discussed under Impact 5.2-2, the SMAQMD offset program is still under development and long-term emission reduction success and enforcement is unknown at this time. Thus, although the project would reduce operational emissions to the extent feasible, long-term emission reductions cannot be quantified or verified, and the possibility remains that emissions may not be reduced to a less than significant level into perpetuity. Project operations may contribute to the nonattainment status of the region and may conflict with CAAQS and NAAQS. Thus, the project's contribution to cumulative operational air quality impacts is considered **cumulatively considerable and significant and unavoidable**.

Mitigation Measures

No additional mitigation is available.

Impact 5.2-8: Mobile-source CO concentrations

Short and long-term operation-related local mobile-source emissions of CO generated by the project would not violate a standard or contribute substantially to an existing or projected air quality violation or expose sensitive receptors to substantial pollutant concentrations under cumulative conditions. Therefore, the project's contribution to cumulative CO emissions **would not be cumulatively considerable**.

As described in Impact 5.2-3 project implementation would result in less-than-significant local mobile source carbon monoxide (CO)-related air quality impacts from construction and operation. Similar to intersection operations in the existing plus project scenario, some intersections would downgrade to LOS E or F (e.g., Kenmar Road / Del Paso Road and Sorento Road / Del Paso Road) in the cumulative plus project scenario. However, CO emission factors in future years are expected to be lower than current levels due to more stringent vehicle emissions standards and improvements in vehicle emissions technology. Ambient local CO concentrations under future, cumulative conditions would continue to decline. Therefore, 1- and 8-hour CO concentrations for the future cumulative conditions would not be anticipated to exceed the significance thresholds of 20 parts per million (ppm) and nine ppm, respectively. Consequently, the project's contribution to cumulative CO impacts **would not be considerable**.

Mitigation Measures

No mitigation is necessary.

Impact 5.2-9: Exposure of sensitive receptors to TACs

Construction-related emissions of TACs associated with land uses developed under the project would not result in an incremental increase in cancer risk greater than 10 in one million or a hazard index greater than 1.0 at existing or future sensitive receptors. However, new TAC sources associated with commercial development may expose existing or new receptors to TAC emissions. TAC impacts are considered local as pollutant concentration dissipate rapidly from the source. Mitigation is proposed that would reduce the project's contribution to TAC emissions. Therefore, the project's contribution to cumulative TAC exposure impacts **would not be cumulatively considerable**.

As discussed under Impact 5.2-4, the project would not generate significant health risks associated with toxic air contaminants, because it would not expose any single receptor to a level of cancer risk that exceeds an incremental increase of 10 in one million, or to a noncarcinogenic hazard Index of 1. The project may result in some new sources of TACs associated with the commercial land uses. However, TAC sources are considered local as pollutant concentrations dissipate rapidly from the source. Further, Mitigation Measure 5.2-4 would reduce project TACs and protect sensitive receptors. Thus, given that project-generated TAC emissions would not be considered substantial, mitigation would reduce project-generated TAC sources, and the localized nature of TACs, project-generated increases in TAC emissions **would not be cumulatively considerable**.

Mitigation Measures

No mitigation is necessary.

Impact 5.2-10: Exposure of sensitive receptors to odors

The project could introduce new odor sources into the area (e.g., temporary diesel exhaust emissions during construction and delivery trucks associated with commercial land uses). However, these odor sources would be temporary, intermittent, and dissipate rapidly from the source and would not combine with other odor sources. Receptors located near the proposed retail center may be exposed to odorous emissions but mitigation has been incorporated to offset this impact. Due to the local nature of odor sources and incorporation of mitigation to reduce odors from proposed development, the project's contribution to cumulative odor impacts **would not be cumulatively considerable**.

As discussed under Impact 5.2-5, the project would generate temporary odors during construction and new odor sources associated with the commercial land uses (e.g., delivery trucks idling at commercial loading zones, odors associated with certain land uses such as dry cleaners). Construction-related odors would be minimal, temporary, and would cease once construction is complete. Incorporation of on-site Mitigation Measure 5.2-5 would reduce odor exposure to new receptors. Because of the localized character of odor-related impacts, as well as the site-specific design measures in place to reduce odor exposure, the project's contribution to odor issues **would not be cumulatively considerable**.

Mitigation Measures

No mitigation is necessary.

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5.3 BIOLOGICAL RESOURCES

This section describes the biological resources on and in the vicinity of the study area; describes relevant regulations pertaining to biological resources; and addresses potential impacts to biological resources that could result from construction of the project. The analysis includes a description of the existing environmental conditions, the methods used for assessment, the impacts associated with implementing the proposed project, and the mitigation measures necessary to address significant impacts.

The following comments were received in response to the Notice of Preparation (see Appendix A) that are addressed in this section:

- ▲ Impacts to important habitat corridors; and
- ▲ Loss of wetland and riparian habitats.

5.3.1 Environmental Setting

REGIONAL SETTING

The study area is located in the Natomas Basin, a low-lying area in the Sacramento Valley, located east of the Sacramento River and north of the confluence with the American River. Drainage from the western slopes of the Sierra Nevada produced regular flooding in this region and created the Natomas Basin as an area of highly fertile, alluvial soils, underlain by impervious clay, which creates poor drainage conditions. The region is currently a mosaic of farmland, urban and rural development, and grazing lands with intact annual grasslands.

The Natomas Basin contains incorporated and unincorporated areas within the jurisdictions of the City of Sacramento, Sacramento County, and Sutter County. The Natomas Basin was historically primarily in agricultural production. Habitats within the Natomas Basin include open water aquatic habitat (including ditches and drains), emergent marsh, riparian forest, riparian scrub-shrub, grassland, vernal pools, and agriculture.

LOCAL SETTING

Topography in the project area consists of gently sloping to rolling terrain that drains from east to west. Drainage facilities include ditches, culverts, and two pipelines within the drainage ditch that runs along the western boundary of the project area. Elevations in the project area range from approximately 15 feet to 25 feet above mean sea level. The soils in the project area are generally clays, silts, and loams, underlain by a claypan substratum.

The majority of the project area consists of agricultural fields, with a small portion of annual grasslands used for grazing along the northern border. The Krumenacher Ranch consist of a homestead, grazing lands with remnant vernal pool grassland topography to the west and agricultural fields to the east.

BIOLOGICAL COMMUNITIES

Methods for Assessing Existing Biological Conditions

To assess and document existing biological resources within the study area, including special-status species and other sensitive resources known or with potential to occur within the study area, a wildlife biologist and botanist reviewed the following resources:

- ▲ U.S. Fish and Wildlife Service (USFWS) Information for Planning and Conservation (IPAC) Species List in the Rio Linda U.S. Geological Survey 7.5-Minute Quadrangle (USFWS 2016);

- ▲ California Natural Diversity Database (CNDDDB) Search (CNDDDB 2016);
- ▲ California Native Plant Society (CNPS) Inventory (CNPS 2016);
- ▲ Google Earth aerial images from 2006 to 2015;
- ▲ National Agricultural Imagery Program (NAIP) aerial image from 2016;
- ▲ City of Sacramento *Panhandle Annexation and PUD Draft and Final Environmental Impact Report* (City of Sacramento 2006 and 2007);
- ▲ Jurisdictional Delineation and Special Status Species Reports for the Properties within the project area (Gibson & Skordal, LLC. 2006, a-f);

To verify information collected during the data review of the project area, a reconnaissance and habitat assessment was conducted by a wildlife biologist and botanist on October 19, 2016. During the field survey, land cover type, hydrology (e.g., drainage patterns, areas of inundation/saturation, surface water conditions), vegetation stand composition and structure, and habitat suitability for special-status species were recorded. Vegetation communities were mapped and classified using a List of Vegetation Alliances and Associations, also known as the Natural Communities List (CDFW 2010), and the California Wildlife Habitat Relationship (CWHR) system (CDFW 2016). No protocol-level surveys for wildlife or rare plant species were conducted.

For the Krumenacher Ranch, biologists reviewed documents and data from surveys conducted in 2005 and 2006 for the City of Sacramento *Panhandle Annexation and PUD Administrative and Final Environmental Impact Report* (2007 EIR) (PMC 2007). Biologists also reviewed recent Google Earth and NAIP areal imagery from 2006 to 2015 to determine if there were any changes to terrestrial and aquatic resources as compared to data collected for the 2007 EIR analyses, but no field surveys were conducted on Krumenacher Ranch.

Land Cover and Habitat Types

The project area is primarily agricultural fields and annual grassland (see Exhibit 5.3-1). Other habitat types include ruderal, horticultural/landscaped, seasonal wetland, and fresh emergent wetland. The project area also contains ditches, a detention basin, barren areas, and paved and dirt roads. The Krumenacher Ranch is primarily composed of annual grassland, vernal pools and swales, and agricultural fields (see Exhibit 5.3-2).

Agricultural Fields

Approximately 300 acres of agricultural fields are present in the project area. Approximately 50 acres of agricultural fields are present along the eastern half of the Krumenacher Ranch. Vegetation in the agricultural fields was lacking or unrecognizable because, at the time of the reconnaissance survey, the fields had recently been disked or mowed. Common wildlife observed in the agricultural fields include California ground squirrel (*Otospermophilus beecheyi*), American crow (*Corvus brachyrhynchos*), Brewer's blackbird (*Euphagus cyanocephalus*), killdeer (*Charadrius vociferus*), and red-tailed hawk (*Buteo jamaicensis*). Burrowing owl (*Athene cunicularia*), a California species of special concern, was observed adjacent to an active burrow along one of the berms that divide the lower agricultural fields. Special-status species occurring or with the potential to occur in the project area are discussed in more detail under "Sensitive Biological Resources."

Annual Grassland

Approximately 55 acres of annual grassland are present along the northern border of the project area. Approximately 70 acres of annual grassland habitat are present in the western half of the Krumenacher Ranch. Non-native annual grasses and herbaceous species dominate the vegetation community and include Italian rye grass (*Festuca perennis*), ripgut brome (*Bromus diandrus*), wild oat (*Avena* sp.), spikeweed (*Centromadia fitchii*), hayfield tarweed (*Hemizonia congesta*), smooth cat's ear (*Hypochaeris glabra*), rose clover (*Trifolium hirtum*), and bindweed (*Convolvulus arvensis*).

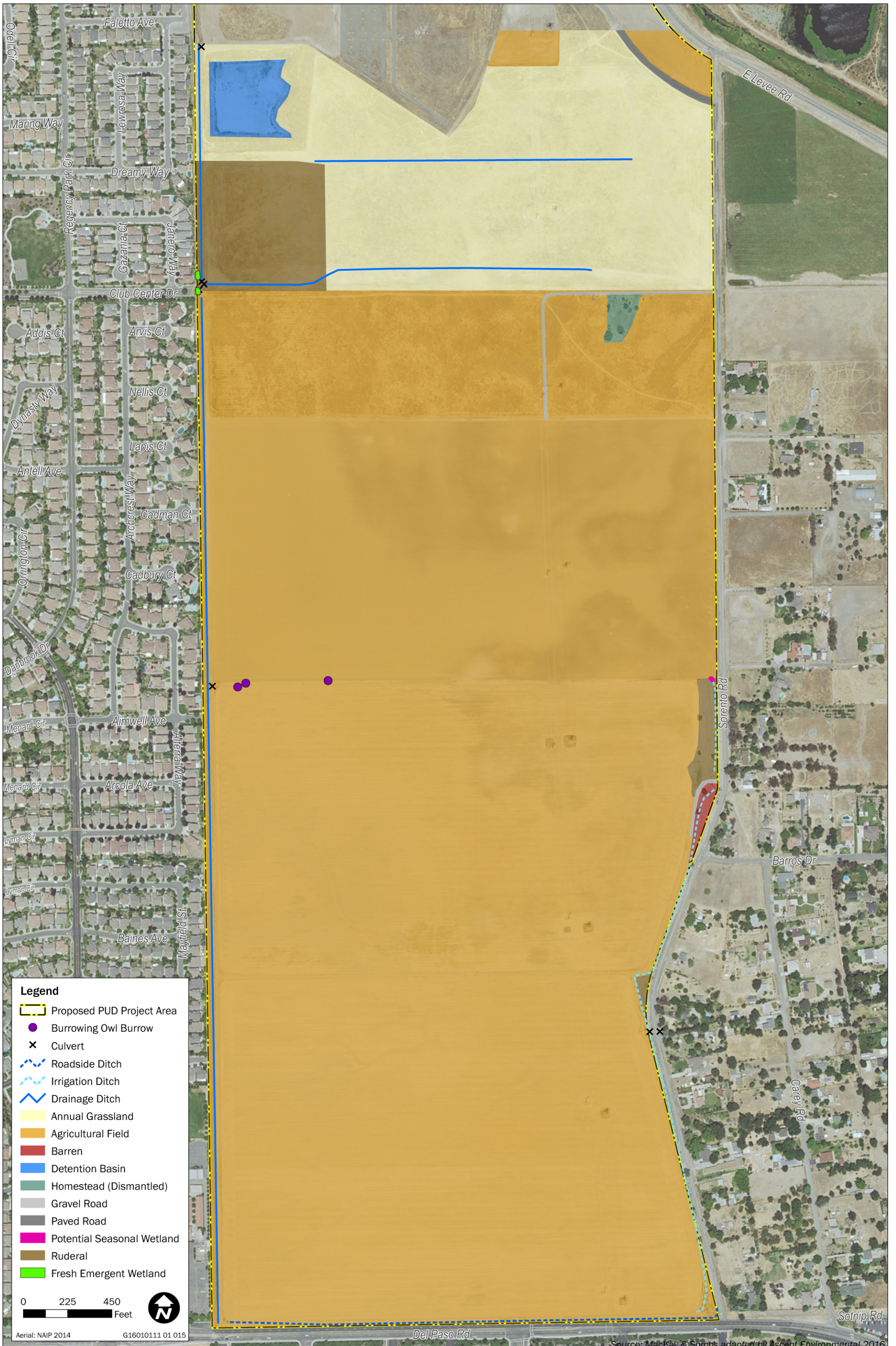
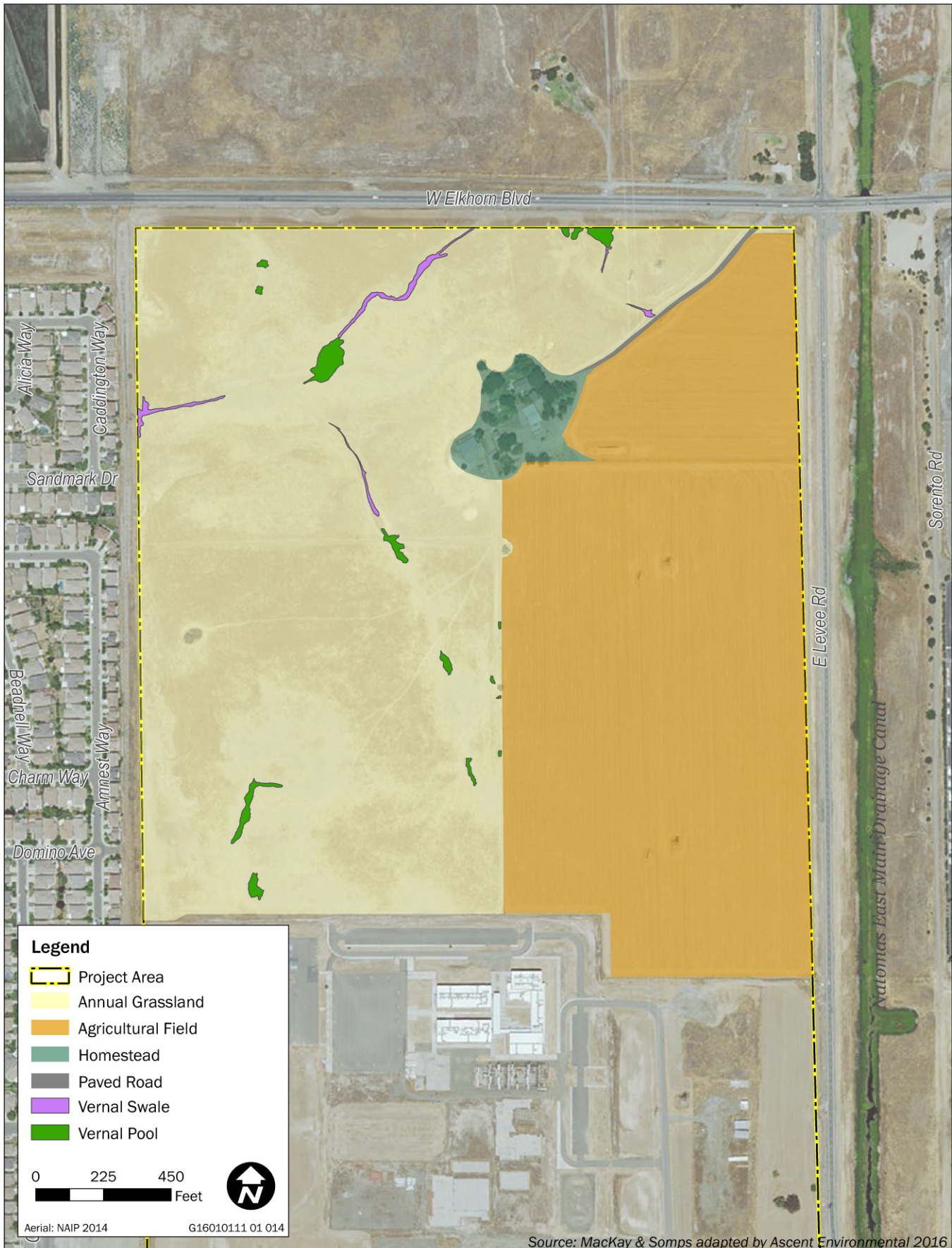


Exhibit 5.3-1

Land Cover in the PUD Project Area





Legend

- Project Area
- Annual Grassland
- Agricultural Field
- Homestead
- Paved Road
- Vernal Swale
- Vernal Pool

0 225 450
 Feet

Aerial: NAIP 2014 G16010111 01 014

Source: MacKay & Soms adapted by Ascent Environmental 2016

Exhibit 5.3-2

Land Cover in the Krumenacher Ranch



Annual grassland supports breeding, cover, and foraging habitat for a variety of wildlife species. Common wildlife species observed during the reconnaissance survey in the project area include American crow, mourning dove (*Zenaida macroura*), ring-necked pheasant (*Phasianus colchicus*), black-tailed jackrabbit (*Lepus californicus*), California ground squirrel, savannah sparrow (*Passerculus sandwichensis*), and western meadowlark (*Sternella neglecta*). The scat of coyote (*Canis latrans*) and mule deer (*Odocoileus hemionus californicus*) were also observed during the reconnaissance survey.

Horticultural/Landscaped

Horticultural/landscaped vegetation is associated with homesteads located on the eastern boundary of the project area and on the Krumenacher Ranch. The majority of trees in the project area are clustered around the homesteads. The buildings associated with the homestead in the project area have been dismantled, but the landscaped vegetation remains. Trees include valley oak (*Quercus lobata*), tree of heaven (*Ailanthus altissima*), date palm (*Phoenix dactylifera*), and juniper (*Juniperus* sp.). According to the 2005 wetland delineation, ornamental and fruit tree species around the Krumenacher Ranch homestead include walnut (*Juglans* spp.), gum (*Eucalyptus* sp.), tree of heaven, plum (*Prunus* sp.), and fig (*Ficus* sp.) (Gibson and Skordal 2006a). Species expected to occur in these areas include Brewer's blackbird, European starling (*Sturnus vulgaris*), house sparrow (*Passer domesticus*), rockdove (*Columba livia*), and white-crowned sparrow (*Zonotrichia leucophrys*).

Ruderal

Patches of ruderal vegetation (approximately 11 acres) are present along the eastern boundary of the project area adjacent to Sorento Road and the rural residential development to the east. Dominant plant species include black mustard, prickly wild lettuce (*Lactuca serriola*), yellow star thistle (*Centaurea solstitialis*), turkey mullein, and prickly Russian thistle (*Salsola tragus*). Common wildlife species expected to use ruderal habitat include many of the same species that also use agricultural fields and annual grassland habitat described above.

Open Water

A detention basin in the northwestern corner of the Panhandle PUD area provides 3.3 acres of open water habitat. Wildlife species expected to occur in this habitat include great egret (*Ardea alba*), mallard (*Anas platyrhynchos*), and raccoon (*Procyon lotor*).

Drainage and Irrigation Ditches

A drainage ditch, excavated in upland to capture seasonal runoff from the project area and the Northpointe subdivision, is located along the western boundary of the project area. This drainage ditch, where it was observed in the project area is dry for much of the year and primarily supports upland vegetation dominated by Italian ryegrass, except for where it intersects with a drainage pipe coming from underneath Club Center Drive (see Exhibit 5.3-1). There is emergent wetland vegetation, described in more detail under "Fresh Emergent Wetland" below, at this location of the drainage ditch. Another pipe is located underground connecting this portion of the drainage ditch to the rest of the ditch that continues to traverse in a northerly direction along the west side of the project area. There are two culverts at the northern end of the drainage ditch, at the northwest corner of the Krumenacher Ranch, that drain into an existing offsite detention basin along Elkhorn Boulevard and then to the NEMDC.

A roadside ditch traverse along the southern boundary just north of Del Paso Road and an irrigation ditch runs from Del Paso Road along a portion of the eastern boundary. A culvert under Sorento Road drains the project area during precipitation events or from irrigation practices into NEMDC. The roadside ditch and irrigation ditch appear to be dry much of the year and are dominated by upland ruderal vegetation including Italian rye grass, prickly Russian thistle, and prickly wild lettuce.

In addition to the ditches around the perimeter of the project area, there are also a few very shallow ditches that traverse across the annual grassland. These ditches contain upland annual grassland vegetation and convey flowing water only during, and for a short period after, precipitation events. Common wildlife species

expected to frequent drainage ditches are also found in other habitats on in the project area such as agricultural fields and annual grassland.

Fresh Emergent Wetland

Approximately 0.01 acre of fresh emergent wetland is present along the western drainage ditch where a culvert crosses under Club Center Drive. Another culvert runs underground connecting the drainage ditch to the south with the drainage ditch to the north. Fresh emergent wetland is present within these ditches on both sides of the culvert and is dominated by broad leaf cattail (*Typha latifolia*) and smartweed (*Persicaria* sp.). Common species, such as red-wing blackbird (*Agelaius phoeniceus*), great egret (*Ardea alba*), and marsh wren (*Cistothorus palustris*), may forage or temporarily use the freshwater emergent wetland, but it is not likely used for nesting because the vegetation is sparse and does not provide adequate cover from predators.

Vernal Pools and Swales

Vernal pools are ephemeral wetlands formed in shallow depressions, underlain by a substrate near the surface that restricts the percolation of water. These depressions fill with rainwater during the fall and winter and can remain inundated until spring or early summer, sometimes filling and emptying numerous times during the rainy season. Vernal pools support endemic flora and fauna that have adapted their life cycles to the ponding and drying cycle of these ephemeral wetlands. Vernal pools within annual grassland were mapped on the Krumenacher Ranch as part of a wetland delineation conducted in 2005 (Gibson and Skordal 2006a). According to aerial imagery on Google Earth from 2001 and 2015, wetland signatures in the western half of the Krumenacher Ranch appear to match approximately 0.68 acre of vernal pools and swales delineated in 2005. However, the eastern half of the Krumenacher Ranch was converted to agricultural fields between 2009 and 2010 and Google Earth aerial imagery does not currently show wetlands in this area.

Dominant plant species recorded in the vernal pools sampled as part of the 2005 wetland delineation include stalked popcorn flower (*Plagiobothrys stipitatus*), Italian rye grass, and bractless sedge-hyppssop (*Gratiola ebracteata*). Other associate species observed include toad rush (*Juncus bufonius*), little quaking grass (*Briza minor*), ornate downingia (*Downingia ornatissima*), curly dock (*Rumex crispus*), and Orcutt's quillwort (*Isoetes orcuttii*). Common wildlife species expected to occur in vernal pool habitat include Pacific treefrog (*Pseudacris regilla*) and aquatic invertebrates such as California fairy shrimp (*Linderiella occidentalis*), copopods, ostracods, cladocerans, and insect larvae. Special-status plant and wildlife species that could occur in vernal pools are discussed in greater detail under Sensitive Biological Resources.

Vernal swales are shallow drainages that convey surface flow. Approximately 0.33 acre of vernal swales, recorded as "seasonal wetland swales" were mapped on the Krumenacher Ranch, according to the 2005 wetland delineation. Wetland signatures for these features are also present in 2015 aerial imagery on Google Earth. Vegetation recorded in these swales includes slender popcorn flower, Carter's buttercup (*Ranunculus bonariensis*), Italian rye grass, Mediterranean barley (*Hordeum marinum* ssp. *gussoneanum*), spiney-fruited buttercup (*Ranunculus muricatus*), and curly dock. These drainage features do not pond because they lack a defined bed and bank and, therefore, do not support vernal pool endemic wildlife species, such as aquatic invertebrates; however, Pacific treefrogs and other common wildlife found in annual grasslands may use this habitat for foraging.

Potential Seasonal Wetland

A small (approximately 0.001 acre) potential seasonal wetland, dominated by Pacific bentgrass (*Agrostis avenacea*), was mapped as part of the 2016 reconnaissance survey. Wildlife species expected to occur in this habitat are similar to those expected to occur in the annual grassland and fresh emergent wetland habitats, discussed above.

SENSITIVE BIOLOGICAL RESOURCES

Sensitive biological resources include those species, natural communities, and habitats that receive special protection through the Endangered Species Act (ESA), California Endangered Species Act (CESA), Clean Water Act (CWA), California Fish and Game Code, or local plans, policies, and regulations; or that are otherwise considered sensitive by federal, state, or local resource conservation agencies and organizations.

Sensitive habitats include those that are of special concern to resource agencies or are afforded specific consideration through CEQA, Section 1602 of the California Fish and Game Code, Section 404 of the CWA, or the Porter-Cologne Act, as discussed under “Regulatory Background” below. Sensitive natural habitat may be of special concern to these agencies and conservation organizations for a variety of reasons, including their locally or regionally declining status, or because they provide important habitat to common and special-status species.

California Department of Fish and Wildlife (CDFW) maintains a list of plant communities that are native to California (CDFG 2010). Within this list, CDFW identifies sensitive natural communities, which they define as communities that are of limited distribution statewide or within a county or region and often vulnerable to environmental effects of projects (CDFG 2009). The vernal pool and vernal swale habitats within the Krumenacher Ranch are considered to be highly imperiled (CDFW 2016).

Wetlands and Other Waters of the United States

The wetland delineations conducted in 2005 and the reconnaissance mapping conducted in 2016 identified the following aquatic resources: approximately 1.00 acre of vernal pools and swales within the Krumenacher Ranch (see Exhibit 5.3-2) and approximately 0.01 acre of freshwater emergent wetland, 0.001 acre of potential seasonal wetland habitat, 3.30 acres of open water habitat, and 2.43 acre of drainage/irrigation ditch within the Panhandle PUD area (see Exhibit 5.3-1). Because verified wetland delineations are valid for no longer than five years, the acreage amounts for aquatic features mapped in the project areas are estimates.

Many of the aquatic resources mapped in the project area may not be considered jurisdictional by USACE, based on court rulings (*Rapanos vs. the United States*) and the Clean Water Rule [published on June 29, 2015 in the *Federal Register* (80 FR 37054)] that continue to define jurisdiction over isolated waters and upland ephemeral ditches. However, an updated jurisdictional delineation of aquatic resources would be required in order for USACE to give a final determination on whether aquatic resources in the project area would be protected under Section 404 of the Clean Water Act. The vernal pools, vernal swales, fresh emergent wetland and drainage ditches could all be considered waters of the state subject to regulation under the Porter-Cologne Act.

Special-Status Species

Special-status species are plants and animals that are legally protected or otherwise considered sensitive by federal, state, or local resource conservation agencies and organizations. In this document, special-status species are defined as:

- ▲ species listed or proposed for listing as threatened, rare, or endangered under the ESA or CESA;
- ▲ species considered as candidates for listing under the ESA or CESA;
- ▲ wildlife species identified by CDFW as Species of Special Concern;
- ▲ animals fully protected under the California Fish and Game Code;
- ▲ plants considered by CDFW to be “rare, threatened, or endangered in California” (California Rare Plant Ranks [CRPR] of 1A, presumed extinct in California; 1B, considered rare or endangered in California and elsewhere; and 2, considered rare or endangered in California but more common elsewhere). The California Rare Plant Ranks correspond with and replace former California Native Plant Society listings.

While these rankings do not afford the same type of legal protection as ESA or CESA, the uniqueness of these species requires special consideration under the California Environmental Quality Act (CEQA).

Plants

Table 5.3-1 provides a list of the special-status plant species that have been documented in the CNDDDB and CNPS Inventory 9-quad search area, included in the USFWS IPAC Species List, or covered by the Natomas Basin Habitat Conservation Plan (NBHCP) and describes their regulatory status, habitat, and potential for occurrence in the project area.

Much of the project area is characterized by existing agricultural fields that do not provide suitable habitat conditions for special-status plants; however, vernal pools, annual grasslands, seasonal wetland, or ditches with emergent marsh vegetation could potentially support special-status plants associated with these habitat types, as discussed in Table 5.3-1. These species include dwarf downingia (*Downingia pusilla*), Boggs Lake hedge-hyssop (*Gratiola heterosepala*), Ahart's dwarf rush (*Juncus leiospermus* var. *ahartii*), Red Bluff dwarf rush (*Juncus leiospermus* var. *leiospermus*), legenere (*Legenere limosa*), Colusa Grass (*Neostapfia colusana*), slender Orcutt grass (*Orcuttia tenuis*), and Sacramento Orcutt grass (*Orcuttia viscida*).

Table 5.3-1 Potential for Sensitive Species to Occur in the Project Area

Name	Federal Status ¹	State Status ¹	California Rare Plant Rank ¹	NBHCP	Habitat	Potential to Occur in the Project Area
PLANTS						
Ferris' milk-vetch <i>Astragalus tener</i> var. <i>ferrisiae</i>	None	None	1B.1		Vernally mesic meadows and seeps, subalkaline flats in valley and foothill grasslands; 7 to 246 elevation. Blooms April–May.	Unlikely to occur. Marginally suitable habitat is present on the Krumenacher Ranch. The nearest known CNDDDB occurrence is greater than 5 miles from the project area.
Dwarf downingia <i>Downingia pusilla</i>	None	None	2B.2		Vernal pools or other seasonal wetlands in annual grasslands; below 1,500 feet elevation. Blooms March–May.	Could occur. Potentially suitable vernal pool habitat is present on the Krumenacher Ranch. The nearest known CNDDDB occurrence is 0.96 mile north of the project area.
Boggs Lake hedge-hyssop <i>Gratiola heterosepala</i>	None	Endangered	1B.2	Covered	Lake margin marshes and swamps, vernal pools, and other seasonal wetlands, primarily in clay soils; 30 to 8,000 feet elevation. Blooms April–August.	Could occur. Potentially suitable vernal pool habitat is present on the Krumenacher Ranch. The nearest known CNDDDB occurrences are approximately 2.15 miles northeast of the project area.
Woolly rose-mallow <i>Hibiscus lasiocarpus</i> var. <i>occidentalis</i>	None	None	1B.2		Margins of freshwater marshes, wet riverbanks, and on low, peat islands in sloughs of the Delta; 0 to 400 feet elevation. Blooms June – September.	Unlikely to occur. Approximately 0.001 acre of marginally suitable fresh emergent wetland is present in the project area; however, no mallow species were observed during the reconnaissance survey and the nearest known occurrence is greater than 5 miles from the project area.
Ahart's dwarf rush <i>Juncus leiospermus</i> var. <i>ahartii</i>	None	None	1B.1		Vernal pools and swales in areas of low cover of competing vegetation; most often on gopher turnings along margins of pools or swales (Witham 2006:38); 100 to 750 feet elevation. Blooms March–May.	Could occur. Potentially suitable vernal pool habitat is present on the Krumenacher Ranch. However, this species is very rare. It's known from only 10 occurrences (CNPS 2016). The nearest known CNDDDB occurrence is greater than 5 miles

Table 5.3-1 Potential for Sensitive Species to Occur in the Project Area

Name	Federal Status ¹	State Status ¹	California Rare Plant Rank ¹	NBHCP	Habitat	Potential to Occur in the Project Area
						from the project area and the elevation of the project area is lower than the known elevation for this species.
Red Bluff dwarf rush <i>Juncus leiospermus</i> var. <i>leiospermus</i>	None	None	1B.2		A variety of habitats including chaparral, cismontane woodland, meadows and seeps, valley and foothill grasslands and vernal pools in mesic areas, and vernal pools; 115 to 4,101 feet elevation. Blooms March-May.	Could occur. Potentially suitable vernal pool annual grassland habitat is present on the Krumenacher Ranch. This species could also occur in mesic areas within annual grassland in the PUD project area. However, the project area is below the known elevational range for this species and the CNDDDB 9-quad search returned only occurrence in Placer County, approximately 13 miles northeast of the project area.
Delta tule pea <i>Lathyrus jepsonii</i> ssp. <i>jepsonii</i>			1B.2	Covered	Perennial twining vine occurs in both riparian and marsh habitats	Unlikely to occur. No suitable riparian or marsh habitat in project area.
Legenere <i>Legenere limosa</i>	None	None	1B.1	Covered	Relatively deep and wet vernal pools; 3 - 2,880 feet elevation. Blooms April-June.	Could occur. Potentially suitable vernal pool habitat is present on the Krumenacher Ranch. The nearest known CNDDDB occurrence is approximately 2.03 miles east of the project area.
Colusa Grass <i>Neostapfia colusana</i>	Threatened	Endangered	1B.1	Covered	Occurs in large deep pools with substrates of adobe mud but also in smaller pools; known in Yolo County	Could occur. Potentially suitable vernal pool annual grassland habitat is present on the Krumenacher Ranch. However, the nearest known CNDDDB occurrence is greater than 5 miles from the project area.
Slender Orcutt grass <i>Orcuttia tenuis</i>	Threatened	Endangered	1B.1	Covered	Found in relatively large, deep vernal pools in eastern Sacramento County	Could occur. Potentially suitable vernal pool annual grassland habitat is present on the Krumenacher Ranch. However, the nearest known CNDDDB occurrence is greater than 5 miles from the project area.
Sacramento Orcutt grass <i>Orcuttia viscida</i>	Endangered	Endangered	1B.1	Covered	Vernal pools; 95 to 325 feet elevation. Blooms April-July.	Could occur. Potentially suitable vernal pool habitat is present on the Krumenacher Ranch. However, the nearest known CNDDDB occurrence is greater than 5 miles from the project area.
Sanford's arrowhead <i>Sagittaria sanfordii</i>	None	None	1B.2		Shallow freshwater marshes and swamps; 0 - 2,133 feet elevation. Blooms May-October.	Could occur. Approximately 0.001 acre of potentially suitable fresh emergent wetland is present in the project area; however, Sanford's arrowhead, which has distinct arrowhead leaves, was not observed

Table 5.3-1 Potential for Sensitive Species to Occur in the Project Area

Name	Federal Status ¹	State Status ¹	California Rare Plant Rank ¹	NBHCP	Habitat	Potential to Occur in the Project Area
						during the reconnaissance survey. This species could occur where fresh emergent wetland is present in the ditch along the western boundary of the Krumenacher Ranch.
Suisun marsh aster <i>Symphotrichum lentum</i>	None	None	1B.2		Brackish and freshwater marshes along the banks of sloughs and other waterways; 0-10 feet elevation. Blooms May–November.	Could occur. Approximately 0.001 acre of marginally suitable fresh emergent wetland is present in the project area; however, this species was not observed during the reconnaissance survey. This species could occur where fresh emergent wetland is present in the ditch along the western boundary of the Krumenacher Ranch.
INVERTEBRATES						
Vernal pool fairy shrimp <i>Branchinecta lynchi</i>	Threatened	None	–	Covered	Vernal pools and other seasonal wetlands in valley and foothill grasslands. Tends to occur in smaller wetland features (less than 0.05 acre in size) (USFWS 1994).	Could occur. Suitable vernal pool habitat is present on the Krumenacher Ranch. There are a few CNDDDB occurrences in the immediate vicinity of the project area, including one that is approximately 0.1 mile to the east of the project area and one the Hansen Ranch approximately 1.3 mile to the east of the project area.
Midvalley fairy shrimp <i>Branchinecta mesovallensis</i>				Covered	Vernal pool obligate often found in small pools.	Could occur. Suitable vernal pool habitat is present on the Krumenacher Ranch.
Valley elderberry longhorn beetle <i>Desmocerus californicus dimorphus</i>	Threatened			Covered	Lives and reproduces on elderberry shrubs found along rivers and canals.	Unlikely to occur. No elderberry shrubs are present in project area.
Vernal pool tadpole shrimp <i>Lepidurus packardi</i>	Endangered	None	–	Covered	Vernal pools and other seasonal wetlands in valley and foothill grasslands that pond for sufficient duration to allow the species to complete its life cycle. Typically found in ponds ranging from 0.1 to 80 acres in size (USFWS 1994)	Could occur. Potentially suitable vernal pool habitat is present on the Krumenacher Ranch. The nearest known CNDDDB occurrence is approximately 3 miles east of the project area.
AMPHIBIANS/REPTILES						
California tiger salamander <i>Ambystoma californiense</i>	Threatened	Threatened	–	Covered	Vernal pools and seasonal wetlands with a minimum 10-week inundation period and surrounding uplands, primarily grasslands, with burrows and	Unlikely to occur. Marginally suitable vernal pool habitat is present on the Krumenacher Ranch; however, due to the urbanization of the surrounding area and the distance (greater than 5 miles) to the nearest

Table 5.3-1 Potential for Sensitive Species to Occur in the Project Area

Name	Federal Status ¹	State Status ¹	California Rare Plant Rank ¹	NBHCP	Habitat	Potential to Occur in the Project Area
					other belowground refugia (e.g., rock or soil crevices).	known occurrence, it's unlikely that California tiger salamander would be present in vernal pool habitat on the Krumenacher Ranch.
Western pond turtle <i>Emys marmorata</i>	None	SCC	–	Covered	Forage in ponds, marshes, slow-moving streams, sloughs, and irrigation/drainage ditches; nest in nearby uplands with low, sparse vegetation.	Could occur. The drainage ditch north of the fresh emergent wetland and the detention basin in the project area could provide aquatic habitat. Suitable upland refugia could be present in the annual grassland near drainage ditch and detention basin. The nearest known CNDDDB occurrence is approximately 3.8 miles to the east of the project area.
Western spadefoot <i>Spea hammondi</i>	None	SCC	–	Covered	Vernal pools and other seasonal ponds with a minimum 3-week inundation period in valley and foothill grasslands.	Could occur. Potentially suitable vernal pool habitat is present on the Krumenacher Ranch; however, the nearest known CNDDDB occurrence is approximately 9.5 miles northeast.
Giant gartersnake <i>Thamnophis gígás</i>	Threatened	Threatened	–	Covered	Slow-moving streams, sloughs, ponds, marshes, inundated floodplains, rice fields, and irrigation/drainage ditches on the Central Valley floor with mud bottoms, earthen banks, emergent vegetation, abundant small aquatic prey and absence or low numbers of large predatory fish. Also, require upland refugia not subject to flooding during the snake's inactive season.	Present. Observed in the ditch at the northwestern corner of the project area, and the NEMDC adjacent to the project area. Could occur within drainage ditches. Suitable upland refugia is present within annual grassland on the Krumenacher Ranch. There are a number of other CNDDDB occurrences, mostly to the west of the project area, within 3 miles.

BIRDS

Tricolored blackbird <i>Agelaius tricolor</i>	None	C	–	Covered	Forages in agricultural lands and grasslands; nests in marshes, riparian scrub, and other areas that support cattails or dense thickets of shrubs or herbs. Requires open water and protected nesting substrate, such as flooded, spiny, or thorny vegetation.	Unlikely to occur. No suitable nesting and foraging habitat in the project area. The 0.001 acre of fresh emergent wetland is not enough to support a population of tricolored blackbirds.
Grasshopper sparrow <i>Ammodramus savannarum</i>	None	SSC	–		Nests and forages in dry or well-drained grassland, especially native grassland with a mix of grasses and forbs.	Unlikely to occur. Marginally suitable nesting and foraging grassland habitat is present in the project area. There are no CNDDDB occurrences within a 5-mile radius of the project area.

Table 5.3-1 Potential for Sensitive Species to Occur in the Project Area

Name	Federal Status ¹	State Status ¹	California Rare Plant Rank ¹	NBHCP	Habitat	Potential to Occur in the Project Area
Short-eared owl <i>Asio flammeus</i>	None	SSC	–		Requires dense vegetation; tall grasses and brush for foraging and nesting.	Unlikely to occur. Marginally suitable nesting and foraging habitat is present in the project area; however, there are no known occurrences within a 5-mile radius of the project area.
Burrowing owl <i>Athene cucularia</i>	None	SSC	–	Covered	Nests and forages in grasslands, agricultural lands, open shrublands, and open woodlands with existing ground squirrel burrows or friable soils. Suitable burrow sites consist of short, herbaceous vegetation with only sparse cover of shrubs or taller herbs.	Present. Suitable habitat is present in the project area and a burrowing owl and its burrows were observed during the October 2016 reconnaissance survey.
Aleutian Canada goose <i>Branta canadensis leucopareia</i>				Covered	Grazes in marshes and stubble fields, roosts on water	Unlikely to occur. Development surrounding project area is likely to deter Aleutian Canada goose from foraging in the area.
Swainson's hawk <i>Buteo swainsoni</i>	None	Threatened		Covered	Forages in grasslands and agricultural lands; nests in riparian and isolated trees.	Present. There are several CNDDDB occurrences in the immediate vicinity of the project area, including one active nest recorded along the western boundary of the project area in 2006. Trees in the project area are too small to provide suitable nesting habitat and no stick nests were observed on or in the vicinity of the project area during the reconnaissance survey in October 2016.
Mountain plover <i>Charadrius montanus</i>	None	SSC	–		Short-grass prairie habitats, or their equivalents, that are flat and nearly devoid of vegetation. Demonstrates site fidelity to wintering fields.	Unlikely to occur. Known wintering habitat is not present in the project area; there are no known occurrences within a 5-mile radius of the project area
White-tailed kite <i>Elanus leucurus</i>	None	FP			Forages in grasslands and agricultural fields; nests in riparian zones, oak woodlands, and isolated trees.	Could Occur. Agricultural fields and annual grassland habitat in the project area could provide suitable foraging habitat. There are several CNDDDB occurrences in the immediate vicinity of the project area; however, trees in the project area are too small to provide suitable nesting habitat.
Loggerhead shrike <i>Lanius ludovicianus</i>	None	SSC	–	Covered	Forages in grasslands and agricultural fields, and nests in scattered shrubs and trees.	Could occur. Suitable nesting and foraging habitat is present in the project area.

Table 5.3-1 Potential for Sensitive Species to Occur in the Project Area

Name	Federal Status ¹	State Status ¹	California Rare Plant Rank ¹	NBHCP	Habitat	Potential to Occur in the Project Area
Song sparrow (Modesto population) <i>Melospiza melodia</i>	None	SSC	–		Fresh emergent wetland dominated by tules, and cattails; willow riparian scrub; valley oak riparian woodland with dense understory; and along vegetated irrigation canals and levees.	Unlikely to occur. No suitable nesting habitat is present in the project area. Wetlands in project area do not have dense understory vegetation.
White-faced Ibis <i>Plegadis chihi</i>				Covered	Forages in flooded rice fields	Unlikely to occur. No suitable flooded habitat in project area.
Bank swallow <i>Riparia</i>		Threatened		Covered	Nests in river banks, forages for insects over open water, croplands, and grasslands	Unlikely to occur. No nesting or foraging habitat in project area.

MAMMALS

American badger <i>Taxidea taxus</i>	None	SSC	–		Drier open shrub, forest, and herbaceous habitats with friable soils. Needs open, uncultivated land.	Unlikely to occur. Grasslands in the project area are not likely to support badger because the species requires large (2,000+ acres) of grassland habitat with adequate prey populations such as rodents. Presence of badger is unlikely due to surrounding urban development. There are no known occurrences within a 5-mile radius of the project area.
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Notes:

¹ Status definitions:

Federal:

Threatened (legally protected under ESA)
Endangered (legally protected under ESA)

State:

Endangered (legally protected under CESA)
Threatened (legally protected under CESA)
FP Fully Protected (legally protected under California Fish and Game Code)
SSC Species of Special Concern (protected under CEQA, but not legally protected under CESA)

California Rare Plant Rank (CRPR):

1B Plant species considered rare or endangered in California and elsewhere (protected under CEQA, but not legally protected under ESA or CESA)
2B Plant species considered rare or endangered in California but more common elsewhere (protected under CEQA, but not legally protected under ESA or CESA)

CRPR Extensions:

.1 Seriously endangered in California (>80% of occurrences are threatened and/or high degree and immediacy of threat)
.2 Fairly endangered in California (20 to 80% of occurrences are threatened)
.3 Not very endangered in California

² Potential for Occurrence:

Unlikely to Occur – For wildlife species, suitable habitat is not in project area or else surrounding urban development makes occurrence unlikely. For plant species, suitable habitat is lacking or else presence is unlikely due to rarity of species and/or nearest known occurrence is greater than 5 miles.
Could Occur – Suitable habitat is present in the project area and the nearest known occurrence is within 5 miles.
Present – species has been observed in project area.

Wildlife

The preliminary data review identified special-status wildlife species that have occurrence records in the vicinity of the project area and Krumenacher Ranch. The following species were immediately eliminated from further evaluation in this document because they are restricted to particular habitat types (e.g., streams, riparian woodland, oak woodland) that are not present in the project area:

- ▲ California red-legged frog (*Rana draytonii*),
- ▲ Sacramento perch (*Archoplites interruptus*),
- ▲ Steelhead – Central Valley DPS (*Oncorhynchus mykiss irideus*),

- ▲ Chinook salmon – Central Valley spring-run ESU (*Oncorhynchus tshawytscha*),
- ▲ Chinook salmon – Sacramento River winter-run ESU (*Oncorhynchus tshawytscha*),
- ▲ Sacramento splittail (*Pogonichthys macrolepidotus*),
- ▲ Longfin smelt (*Spirinchus thaleichthys*),
- ▲ Golden eagle (*Aquila chrysaetos*),
- ▲ Western yellow-billed cuckoo (*Coccyzus americanus occidentalis*),
- ▲ Purple martin (*Progne subis*),
- ▲ Peregrine falcon (*Falco peregrinus anatum*),
- ▲ Least bittern (*Ixobrychus exilis*), and
- ▲ Least Bell's vireo (*Vireo bellii pusilus*).

Table 5.3-1 provides a list of the remaining special-status wildlife and describes their regulatory status, habitat, and potential for occurrence in the project area. Two species are known to occur in the project area: burrowing owl (*Athene cunicularia*), and Swainson's hawk (*Buteo Swainsoni*). There is a CNDDDB occurrence for giant garter snake (*Thamnophis gigas*) on the Krumenacher Ranch. In addition, white-tailed kite (*Elanus leucurus*) and loggerhead shrike (*Lanius ludovicianus*) could potentially nest in trees within the project area. The vernal pool habitat on the Krumenacher Ranch has the potential to support vernal pool fairy shrimp (*Branchinecta lynchi*), midvalley fairy shrimp (*Branchinecta mesoallensis*), vernal pool tadpole shrimp (*Lepidurus packardii*), and western spadefoot (*Spea hammondi*). The drainage ditch and detention basin in the project area could potentially provide aquatic habitat for the western pond turtle (*Emys marmorata*).

5.3.2 Regulatory Setting

FEDERAL

Federal Endangered Species Act

Pursuant to the federal Endangered Species Act (ESA) (16 U.S.C. Section 1531 et seq.), USFWS and the National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NMFS) regulate the taking of species listed in the ESA as threatened or endangered. In general, persons subject to ESA (including private parties) are prohibited from "taking" endangered or threatened fish and wildlife species on private property, and from "taking" endangered or threatened plants in areas under federal jurisdiction or in violation of state law. Under Section 9 of the ESA, the definition of "take" is to "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." USFWS has also interpreted the definition of "harm" to include significant habitat modification that could result in take.

Two sections of the ESA address take. Section 10 regulates take if a non-federal agency is the lead agency for an action that results in take and no other federal agencies are involved in permitting the action. However, if a project would result in take of a federally-listed species and federal discretionary action (even if a non-federal agency is the overall lead agency) is involved (i.e., a federal agency must issue a permit), the involved federal agency consults with USFWS under Section 7 of the ESA. Because this project may involve federal permits, interagency cooperation under Section 7 of the ESA is required. Section 7 of the ESA outlines procedures for federal interagency cooperation to protect and conserve federally listed species and designated critical habitat. Section 7(a)(2) requires federal agencies to consult with USFWS and NMFS to ensure that they are not undertaking, funding, permitting, or authorizing actions likely to jeopardize the continued existence of listed species or destroy or adversely modify designated critical habitat.

Clean Water Act

Section 404 of the Clean Water Act (CWA) requires project developers to obtain a permit from the U.S. Army Corps of Engineers (USACE) before performing any activity that involves any discharge of dredged or fill material into waters of the United States, including wetlands. Waters of the United States include navigable waters of the United States, interstate waters, tidally influenced waters, and all other waters where the use, degradation, or destruction of the waters could affect interstate or foreign commerce, tributaries to any of

these waters, and wetlands that meet any of these criteria or that are adjacent to any of these waters or their tributaries. Many surface waters and wetlands in California meet the criteria for waters of the United States.

In accordance with Section 401 of the CWA, projects that apply for a USACE permit for discharge of dredged or fill material must obtain water quality certification from the appropriate regional water quality control board (RWQCB) indicating that the action would uphold state water quality standards.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA), first enacted in 1918, provides for protection of international migratory birds and authorizes the Secretary of the Interior to regulate the taking of migratory birds. The MBTA provides that it shall be unlawful, except as permitted by regulations, to pursue, take, or kill any migratory bird, or any part, nest, or egg of any such bird. Under the MBTA, “take” is defined as “to pursue, hunt, shoot, wound, kill, trap, capture, or collect, or any attempt to carry out these activities.” A take does not include habitat destruction or alteration, as long as there is not a direct taking of birds, nests, eggs, or parts thereof. The current list of species protected by the MBTA can be found in Title 50 of the Code of Federal Regulations (CFR), Section 10.13 (50 CFR 10.13). The list includes nearly all birds native to the United States.

STATE

California Endangered Species Act

Pursuant to the California Endangered Species Act (CESA), a permit from California Department of Fish and Wildlife (CDFW) is required for projects that could result in the “take” of a plant or animal species that is listed by the state as threatened or endangered. Under CESA, “take” is defined as an activity that would directly or indirectly kill an individual of a species, but the CESA definition of take does not include “harm” or “harass,” like the ESA definition does. As a result, the threshold for take is higher under CESA than under ESA. Authorization for take of state-listed species can be obtained through a California Fish and Game Code Section 2081 incidental take permit.

Porter-Cologne Water Quality Control Act

Under the Porter-Cologne Act, waters of the state fall under the jurisdiction of the appropriate RWQCB. The RWQCB must prepare and periodically update water quality control plans (basin plans). Each basin plan sets forth water quality standards for surface water and groundwater, as well as actions to control point and nonpoint sources of pollution to achieve and maintain these standards. The RWQCB’s jurisdiction includes federally protected waters as well as areas that meet the definition of “waters of the state.” Waters of the state is defined as any surface water or groundwater, including saline waters, within the boundaries of the state. The RWQCB has the discretion to take jurisdiction over areas not federally protected under Section 401 provided they meet the definition of waters of the state. Actions that affect waters of the state, including wetlands, must meet the RWQCB’s waste discharge requirements.

California Fish and Game Code Sections 3503 and 3503.5

Section 3503 of the Fish and Game Code states that it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird. Section 3503.5 of the California Fish and Game Code states that it is unlawful to take, possess, or destroy any raptors (i.e., species in the orders *Falconiformes* and *Strigiformes*), including their nests or eggs. Typical violations include destruction of active nests as a result of tree removal or disturbance caused by project construction or other activities that cause the adults to abandon the nest, resulting in loss of eggs and/or young.

LOCAL

Natomas Basin Habitat Conservation Plan

The Natomas Basin Habitat Conservation Plan (NBHCP) is a conservation plan supporting application for incidental take permits (ITPs) under Section 10(a)(1)(B) of ESA and under Section 2081 of the California Fish

and Game Code. The purpose of NBHCP is to promote biological conservation in conjunction with economic and urban development within the Permit Areas of the Natomas Basin. The NBHCP establishes a multi-species conservation program to avoid, minimize and mitigate the expected loss of habitat values and incidental take of covered species that would result from urban development, operation of irrigation and drainage systems, and certain activities associated with The Natomas Basin Conservancy (TNBC) management of its system of reserves established under the NBHCP. The goal of the NBHCP is to minimize incidental take of the covered species in the permit areas and to provide mitigation for the impacts of covered activities on the covered species and their habitat.

The 2003 NBHCP provides that upon annexation, the project area automatically will be included within the 8,050-acre City of Sacramento Permit Area and covered by the NBHCP. The NBHCP states as follows:

The Panhandle has always been included in the North Natomas Community Plan, and is included in the Authorized Development area of the City; however the City's incidental take permits would not apply to the Panhandle area until and unless it is annexed to the City.

Consequently, the Panhandle PUD would be subject to the avoidance, minimization, mitigation and conservation measures set forth in the NBHCP and the ITPs upon annexation.

The NBHCP mitigation requirements include:

- ▲ Payment of HCP fees or dedication of land at a ratio of 0.5 to 1.
- ▲ Reconnaissance-level surveys to determine what habitats are present on a proposed development site. (Reconnaissance surveys are submitted with the developer's application.)
- ▲ Pre-construction surveys for potential special status species not less than 30 days or more than 6 months prior to construction activities.
- ▲ Species-specific mitigation, as required, per USFWS and CDFW protocol.

City of Sacramento 2035 General Plan

The following biological resource policies are relevant to the project.

- ▲ Policy EC 2.1.6: Wetland Protection. The City shall preserve and protect wetland resources including creeks, rivers, ponds, marshes, vernal pools, and other seasonal wetlands, to the extent feasible. If not feasible, the mitigation of all adverse impacts on wetland resources shall be required in compliance with State and Federal regulations protecting wetland resources, and if applicable, threatened or endangered species. Additionally, the City shall require either on- or off-site permanent preservation of an equivalent amount of wetland habitat to ensure no-net loss of value and/or function.
- ▲ Policy EC 2.1.7: Annual Grasslands. The City shall preserve and protect native grasslands and vernal pools that provide habitat for rare and endangered species. If not feasible, the mitigation of all adverse impacts on annual grasslands shall comply with State and Federal regulations protecting foraging habitat for those species known to utilize this habitat.
- ▲ Policy EC 2.1.10: Habitat Assessments. The City shall consider the potential impact on sensitive plants and wildlife for each project requiring discretionary approval. If site conditions are such that potential habitat for sensitive plant and/or wildlife species may be present, the City shall require habitat assessments, prepared by a qualified biologist, for sensitive plant and wildlife species. If the habitat assessment determines that suitable habitat for sensitive plant and/or wildlife species is present, then either (1) protocol-level surveys shall be conducted (where survey protocol has been established by a resource agency), or, in the absence of established survey protocol, a focused survey shall be conducted consistent with industry-recognized best practices; or (2) suitable habitat and presence of the species shall be assumed to occur within all potential habitat locations identified on the project site. Survey Reports shall

be prepared and submitted to the City and the California Department of Fish and Wildlife (CDFW) or the United States Fish and Wildlife Service (USFWS) (depending on the species) for further consultation and development of avoidance and/or mitigation measures consistent with state and federal law.

- ▲ Policy EC 2.1.12: Natomas Basin Habitat Conservation Plan. The City shall continue to participate in and support the policies of the Natomas Basin Habitat Conservation Plan for the protection of biological resources in the Natomas Basin.

City of Sacramento Tree Preservation Ordinance

Sacramento City Code 12.56 was amended and adopted by the Sacramento City Council on August 4, 2016. The new tree ordinance amends section 2.62.030 and 8.04.100 and deletes chapter 12.60 and 12.64 of the Sacramento City Code, related to trees. The City of Sacramento Tree Ordinance (City Code 12.56) specifies that a permit is required to perform regulated work on “City Trees” or “Private Protected Trees” (which includes trees formerly referred to as “Heritage Trees”). City trees are characterized as trees partially or completely located in a City park, on City-owned property, or on a public right-of-way, including any street, road, sidewalk, park strip, mow strip or alley. Private protected trees are defined as trees designated to have special historical value, special environmental value, or significant community benefit, and that are located on private property.

Private protected trees are:

- ▲ All native trees at 12-inch diameter standard height (DSH). Native trees include Coast, Interior, Valley and Blue Oaks, CA Sycamore and Buckeye.
- ▲ All trees at 32-inch DSH with an existing single-family or duplex dwelling.
- ▲ All trees at 24-inch DSH on undeveloped land or any other type of property such as commercial, industrial, and apartments.

“Regulated work” means planting a city tree or any act that could adversely impact the health of a city tree or private protected tree such as:

- ▲ Removing a city tree or private protected tree;
- ▲ Pruning the branches or roots from a city tree or private protected tree;
- ▲ Affixing any signs, lights, or hardware to a city tree;
- ▲ Grading, clearing, excavating, adding fill soil, trenching, boring, compacting, or paving within the tree protection zone of a city tree or private protected tree;
- ▲ Placing or storing construction equipment or construction material within the tree protection zone of a city tree or private protected tree;
- ▲ Application of any harmful substance within the tree protection zone of a city tree or private protected tree; or
- ▲ Topping a city tree or private protected tree.

Regulated work does not include routine maintenance.

Sacramento City Code 12.56.040 identifies the requirements for removal of City Trees for public projects.

- A. Whenever feasible, the city shall modify the design of public projects to avoid the removal or damage to city trees.

- B. If the city proposes to remove city trees that have a DSH of four inches or more as part of a public project that otherwise requires city council approval, the city project manager shall provide written justification to the director¹ of the need to remove city trees for the public project. The director shall review the written justification and if the director agrees with the written justification the director shall make a recommendation to the city council to approve the request to remove the city trees. The request for approval from city council may take place at any stage of the public project but the city shall obtain council approval prior to removing the city trees. City trees proposed to be removed as part of a public project that either does not require city council approval or has a DSH less than four inches shall be removed as provided in section 12.56.030.C.
- C. The director shall provide written notice of the proposal to remove city trees as part of a public project by posting a notice of the time, date, and location of the city council meeting during which the city council is to decide whether or not to remove city trees in a conspicuous place on or in proximity to the trees at least 15 days prior to the city council meeting.

As specified in Sacramento City Code 12.56.050 (Tree Permits), no person shall perform regulated work without a tree permit. Applications for a tree permit shall be in writing and shall be filed with the Director upon forms provided by the city. The application shall include a statement detailing the nature and necessity for the proposed regulated work, the location of the proposed work, and signature of the applicant. The application shall be accompanied by an application fee in an amount established by resolution of the city council.

The Director may require that the application be accompanied by:

1. An arborist report;
2. A site map indicating existing and proposed elevations, property lines, streets, easements, driveways, buildings and structures, building and structure setbacks, parking areas, existing and proposed land uses, and locations of all trees with identification numbers;
3. A landscape or tree planting plan;
4. A tree protection plan;
5. Proof of compliance with any applicable California Contractors State License Board licensing requirements;
6. Authorization of the property owner;
7. A tree replacement plan if the applicant proposes to remove a city tree or private protected tree; and
8. Any other information the Director determines to be necessary.

In general, the intent of the Tree Ordinance is to maintain and protect City and Private Protected Trees to the maximum extent feasible. When qualifying trees must be removed, they are to be replaced at an approved ratio based on the requirements of the ordinance. If the required amount of tree replacements is not feasible, payment of in-lieu fees may be substituted.

¹ "Director" means the following. For city trees located in city parks, the director of the department of parks or the director's designee. For all other city trees, the director of the department of public works or the director's designee.

5.3.3 Impacts and Mitigation Measures

SIGNIFICANCE CRITERIA

Based on Appendix G of the State CEQA Guidelines, the project could have a significant adverse effect related to terrestrial biological resources if it would:

- ▲ 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 CDFW or USFWS;
- ▲ have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by CDFW or USFWS;
- ▲ have a substantial adverse effect on federally protected waters of the United States, 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.

METHODS AND ASSUMPTIONS

The analysis assumes that the entire project area (with the exception of the East Natomas Education Complex) would be developed. Permanent impacts would include habitat removal and land use conversion to commercial and residential development, as well as associated vehicle traffic and infrastructure improvements. Impacts during construction would include increased disturbance from truck and other heavy equipment during ground-disturbing activities needed for building and installation of developments and utility infrastructure.

The impact assessment was based on the project description included in Chapter 3, “Project Description,” of this Draft EIR, information described in the existing setting (including technical biological reports prepared previously for the project area), and the standards of significance described above. Mitigation measures from the NBHCP are identified to avoid and minimize impacts when applicable; mitigation measures for impacts not covered by the NBHCP are also identified.

While not included in the Panhandle PUD, the future development of the Krumenacher Ranch site is addressed in the impact analysis below.

ISSUES DISMISSED FROM FURTHER CONSIDERATION

Section 5.3.1 discusses special-status plant and animal species evaluated in this analysis, and Table 5.3.1 summarizes the potential for each of these species to occur in the project area. Plant and animals not expected to occur, or with a low probability to occur (because of a lack of suitable habitat, or lack of nearby occurrence records), are not addressed further in this analysis.

Impacts to wetlands and federally protected waters are discussed under Impact 5.3-3 below, but no riparian habitat or other sensitive natural communities occur in the project area. The project area is bordered on three sides by existing development and is not expected to interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors. There are no known native wildlife nursery sites in the project area. The project is also not expected to 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. Thus, these impacts are not further addressed in this EIR.

PROJECT IMPACTS AND MITIGATION MEASURES

Impact 5.3-1: Loss of Annual Grassland and Agricultural Lands

Implementation of the project would result in the loss of approximately 125 acres of annual grassland and 350 acres of agricultural lands. This impact would be **less than significant**.

Implementation of the project would result in the loss of approximately 125 acres of annual grassland habitat and 350 acres of agricultural land habitat, which provide habitat for common wildlife species. The loss of annual grassland and other agricultural land would be a less-than-significant impact because these land cover types are regionally common and are abundant in areas north of the site. Losses from this project would not result in common species associated with annual grassland or agricultural lands to drop below self-sustaining levels given their abundance in the region. Thus, this impact is **less than significant**. However, the loss of annual grassland and agricultural land within the project area does represent a reduction in the foraging area for the Swainson's hawk and other raptors. This will be addressed in Impact 5.3-2 below.

Mitigation Measures

None required.

Impact 5.3-2: Impacts to Special-Status Species

Several special-status species are associated with vernal pool and annual grassland habitat in the project area. Development of the project area would result in removal of these habitats and, therefore, could result in loss of special-status species if they are present. Loss of special-status species would be a **potentially significant** impact.

The 2003 NBHCP included the study area in the 8,050-acre City of Sacramento Permit Area. Consequently, the evaluation of direct and indirect impacts associated with the loss of habitat due to the development of the approximately project area were quantified as part of the habitat impacts covered by the NBHCP.

Implementation of the project would result in removal of habitat that may support special-status species. In addition to direct impacts associated with habitat loss, development could indirectly affect these species through degrading water quality or introduction of non-native species. Table 5.3-2 summarizes the special-status species that may be affected by the project and indicates which species are covered by the NBHCP. Impacts to each species are discussed in more detail below.

Table 5.3-2 Special-Status Species that may be Affected by the Project

Common Name	Scientific Name	Covered in the NBHCP
Plants		
Dwarf downingia	<i>Downingia pusilla</i>	Not Covered
Boggs Lake hedge-hyssop	<i>Gratiola heterosepala</i>	Covered

Table 5.3-2 Special-Status Species that may be Affected by the Project

Common Name	Scientific Name	Covered in the NBHCP
Ahart's dwarf rush	<i>Juncus leiospermus</i> var. <i>ahartii</i>	Not Covered
Red Bluff dwarf rush	<i>Juncus leiospermus</i> var. <i>leiospermus</i>	Not Covered
Legenere	<i>Legenere limosa</i>	Covered
Colusa grass	<i>Neostahia colusana</i>	Covered
Slender orcutt grass	<i>Orcuttia tenuis</i>	Covered
Sacramento orcutt grass	<i>Orcuttia viscida</i>	Covered
Sanford's arrowhead	<i>Sagittaria sanfordii</i>	Not Covered
Suisun marsh aster	<i>Symphotrichum lentum</i>	Not Covered
Invertebrates		
Vernal pool fairy shrimp	<i>Branchinecta lynchi</i>	Covered
Midvalley fairy shrimp	<i>Branchinecta mesovallensis</i>	Covered
Vernal pool tadpole shrimp	<i>Lepidurus packardii</i>	Covered
Amphibians/Reptiles		
Western pond turtle	<i>Emys (Clemmys) marmorata</i>	Covered
Western spadefoot toad	<i>Spea (Scaphiopus) hammondii</i>	Covered
Giant garter snake	<i>Thamnophis gígas</i>	Covered
Birds		
Burrowing owl	<i>Athene cunicularia</i>	Covered
Swainson's hawk	<i>Buteo swainsoni</i>	Covered
White-tailed kite	<i>Elanus (caeruleus) leucurus</i>	Not Covered
Loggerhead shrike	<i>Lanius ludovicianus</i>	Covered

Vernal Pool Species

The special-status species with potential to occur in vernal pool and vernal swale habitat on the Krumenacher Ranch include: dwarf downingia, Boggs Lake hedge-hyssop, Ahart's dwarf rush, Red Bluff dwarf rush, legenere, and Sacramento Orcutt grass. Annual grassland habitat on the Krumenacher Ranch and along the northern boundary of the Panhandle PUD area could also support Red Bluff dwarf rush. In association with the 2007 Panhandle Annexation and PUD Draft EIR, a jurisdictional delineation and special-status species evaluation was conducted for the Krumenacher Ranch during the blooming period for special-status plant species (Gibson and Skordal 2006a) and no special-status species were recorded. Plant species recorded as part of the 2005 survey included a mix of a few species typically found in vernal pool habitat in the region as well as species typically found in upland and seasonal wetlands, indicating that the quality of vernal pool habitat was degraded, probably because of the history of agricultural land practices and proximity to urban development. The vernal pool and swale habitat is likely still degraded. Nevertheless, because the special-status plant survey conducted in the project area is more than 10 years old, the survey should be repeated before dismissing the potential for special-status species to occur. Dormant seeds for these species could be present in soils in the project area and nearby populations of these species, if they are present in the vicinity, could also provide a source for seeds. Grasslands immediately north of the Krumenacher Ranch appear to support vernal pool habitat according to Google Earth aerial imagery for 2015. The nearest known CNDDB occurrences for dwarf downingia, Boggs Lake hedge-hyssop, and legenere are within 1 to 3 miles of the project area. The nearest known CNDDB occurrence for Ahart's dwarf rush, Red Bluff dwarf rush, and Sacramento Orcutt grass are greater than 5 miles from the project area.

Potentially suitable habitat is present for vernal pool fairy shrimp, midvalley fairy shrimp, vernal pool tadpole shrimp, and western spadefoot in vernal pools on the Krumenacher Ranch. This area was not surveyed during the 2016 reconnaissance survey; however, a wetland delineation conducted in 2006 provides information about habitat quality. Although degraded, the vernal pools could provide aquatic and aestivation habitat for western spadefoot and aquatic habitat for vernal pool tadpole shrimp, midvalley fairy shrimp, and vernal pool fairy shrimp. The nearest vernal pool fairy shrimp CNDDDB occurrence is immediately east, approximately 0.1 mile from the Krumenacher Ranch. The nearest tadpole shrimp CNDDDB occurrence is approximately 3 miles east of the project area. There are no CNDDDB occurrences for western spadefoot within a 5-mile radius of the project area.

Neither vernal pool fairy shrimp, nor vernal pool tadpole shrimp were found during protocol-level wet and dry-season surveys conducted on the Krumenacher Ranch in 2005 and 2006 (Helm Biological Consulting 2005a, 2005b, 2005c, and 2006). However, because there are known occurrences for these species in the project area and the surveys were conducted 10 years ago, it's possible the vernal pools could be re-colonized by vernal pool invertebrates.

Implementation of the project would result in the fill of approximately 1.0 acre of vernal pool and vernal swale habitat on the Krumenacher Ranch and the removal of annual grassland habitat in both the Krumenacher Ranch and the project area which could support vernal pool plants and animals. Loss of special-status plants and animals associated with vernal pool habitats would be a **potentially significant** impact.

Sanford's Arrowhead and Suisun Marsh Aster

Sanford's arrowhead and Suisun marsh aster are associated with freshwater marsh. Although the habitat in the study area is limited for these two species, they could occur in marshy areas within the drainage and irrigation ditches or along the edges of the detention basin. The study area includes approximately 2.4 acres of ditches, 3.3 acres of detention basin, and 0.01 acre of freshwater marsh.

Disturbing and filling these habitats in the study area could result in loss of Sanford's arrowhead and Suisun marsh aster if they are present. In addition to direct removal of individuals and habitat during disking or stripping of vegetation, grading for drainage, or other construction-related disturbances, plants could suffer other direct physical damage, including breaking, crushing, and burying. Loss of Sanford's arrowhead or Suisun marsh aster would be a **potentially significant** impact.

Giant Garter Snake

Giant garter snake has been observed in the ditch at the northwestern corner of the project area (CNDDDB Occurrence Number 67). Several giant garter snake CNDDDB occurrences are also present in rice fields to the northwest. The NEMDC to the east of the project area supports suitable habitat for this species. A network of agricultural ditches are hydrologically connected to the drainage ditch that runs along the western boundary of the project area, via culverts under West Elkhorn Boulevard (Civil Engineering Solutions, Inc. 2007). Giant garter snake may use the irrigation and drainage ditches when aquatic habitat is present, and may use adjacent upland areas for basking or winter refugia. Development of the project could result in loss of approximately 3.3 acres (detention basin) and 2.5 miles (ditches) of aquatic habitat and 89 acres of upland habitat, based on buffering aquatic habitat by 200 feet. Construction of the project could result in direct injury or mortality of giant garter snake if they are present. Injury or mortality of giant garter snake and loss of habitat would be a **significant impact**.

Western Pond Turtle

Western pond turtle may occur in drainage ditches or the detention basin in the project area. The NEMDC also supports suitable aquatic habitat for this species. Upland areas adjacent to the aquatic habitat may also be used for basking and nesting. Draining or fill of drainage ditches or the detention basin could result in stranding or crushing of western pond turtle. Injury or mortality of western pond turtle would be a **significant impact**.

Swainson's Hawk

A Swainson's hawk nest was recorded along the western border of the project area in 2006 (CNDDDB Occurrence Number 1629). Over 36 occurrences of Swainson's hawks were recorded in the CNDDDB within 5 miles of the project area. The Central Valley provides ideal nesting habitat for this species because of the abundance of agricultural fields and riparian woodlands, which this species uses for foraging and nesting, respectively. Sacramento, Yolo, Solano, and San Joaquin counties support the largest concentrations of Swainson's hawks in the state (Estep 2008). Construction activities could result in disturbance to active Swainson's hawk nests, which could result in nest abandonment or failure and mortality of the eggs or young. In addition, removal of trees used by nesting Swainson's hawk would reduce the available nesting areas. Conversion of 125 acres of annual grasslands and 350 acres of agricultural land habitat would result in loss of foraging habitat for Swainson's hawk. Nest abandonment, nest failure, nest tree removal and loss of foraging habitat for Swainson's hawk would be a **significant impact**.

White-tailed Kite and Other Raptors

White-tailed kite and other raptors, such as red-tailed hawk (*Buteo jamaicensis*) and American kestrel (*Falco sparverius*), could nest in trees in the project area and on the Krumenacher Ranch. If trees are to be removed during the raptor breeding season (February 1 –August 31), and if an active nest were present, mortality of eggs and chicks could result. In addition, project construction could disturb active nests near the construction site, potentially resulting in nest abandonment by the adults and mortality of chicks and eggs. Loss of an active raptor nest would be a **significant impact**.

Burrowing Owl

A burrowing owl and three occupied burrows were observed in the project area along a berm that divides agricultural fields during the October 2016 reconnaissance survey (Exhibit 5.3-1). Burrowing owls and occupied burrows were also documented in the vicinity of the project area in 2005 as part of surveys conducted for the Grant Joint Union High School EIR (Padre Associates 2005). Construction activities could result in disturbance to burrowing owls, including crushing eggs or young in their burrows, or causing adults to flush from their burrow and be exposed to predation or other hazards. Burrow destruction, nest failure, or burrow abandonment for burrowing owl would be a **significant impact**.

Loggerhead Shrike

Loggerhead shrike could nest in shrubs and trees in the project area. If vegetation is removed when an active nest is present, loss of eggs or young could result. Loss of an active loggerhead shrike nest is considered a **significant impact**.

Mitigation Measure 5.3-2

1. Conduct Pre-Construction Surveys (Measure V.A.1 from NBHCP)

Not less than 30 days or more than 6 months prior to commencement of construction activities on specific Authorized Development sites in the NBHCP area, a pre-construction survey of the site shall be conducted to determine the status and presence of, and likely impacts to, all Covered Species on the site. However, pre-construction surveys for an individual species may be completed up to one year in advance if the sole period for reliable detection of that species is between May 1 and December 31. The applicant seeking to develop land will be responsible for contracting with qualified biological consultants to carry out the pre-construction surveys, and as necessary, to implement specific take minimization, and other Conservation Measures set forth in the NBHCP and approved by the Wildlife Agencies.

The results of the pre-construction surveys along with recommended take minimization measures shall be documented in a report and shall be submitted to the Land Use Agency, USFWS, CDFW, and TNBC. Based upon the survey results, the Land Use Permittees will identify applicable take avoidance and other site specific Conservation Measures, consistent with the NBHCP, required to be carried out on the site. The approved pre-construction survey documents and list of Conservation Measures will be submitted by the developer of the Authorized Development project to the applicable Land Use Agency to demonstrate compliance with the NBHCP. Reconnaissance level surveys should be conducted prior to species specific

surveys to determine what habitats are present on a specific development site and what, if any, more intensive survey activities should be conducted to accurately determine the status of the Covered Species on the site. It shall be the obligation of the developer/landowner to complete such surveys and the Land Use Agency Permittees' responsibility to ensure the surveys are properly completed prior to disturbance of habitat. Surveys shall be conducted by qualified personnel (e.g., persons with suitable biological, botanical, or related expertise). Note: negative species-specific survey results generally do not obviate the requirement to implement minimization measures prescribed in the revised NBHCP where a pre-construction survey indicates that habitat for a particular listed species exists onsite.

2. General Measures to Minimize Take of Vernal Pool Species (Measure V.A.4 from NBHCP)

A. General Biological Survey and Information Required

In the event a biological reconnaissance survey or the pre-construction survey identifies that vernal pool resources are on-site, a vernal pool species specific biological assessment must be provided by the developer to the Land Use Agency during the appropriate season (as established by USFWS) to determine the type and abundance of species present. The species specific biological assessment must address covered vernal pool plants (i.e., Sacramento Orcutt grass, slender Orcutt grass, Colusa grass, legenere, and Bogg's lake hedge-hyssop), crustaceans (i.e., vernal pool tadpole shrimp, vernal pool fairy shrimp, and midvalley fairy shrimp), and amphibians (i.e., California tiger salamander and western spadefoot toad). The vernal pool plant survey must be a USFWS-approved plant survey prepared by a USFWS-approved qualified field biologist and shall list the methods of field analysis, condition of habitat, size and acreage of direct and indirect impact (as defined by seasonal inundation and hydric soils and other appropriate characteristics), and species present. The vernal pool crustacean species survey shall be in accordance with the USFWS Interim Survey Guidelines to Permittees for Recovery Permits under Section 10(a)(1)(A) of the Endangered Species Act for the Listed Vernal Pool Branchiopods (April 19, 1996) or the most recent approved USFWS survey guidelines for vernal pool species. This assessment must be submitted with the urban development permit application and prior to approval of an Urban Development Permit by the Land Use Agency.

If it is determined that wetland and/or vernal pool resources would be disturbed by a project, then take of vernal pool associated Covered Species would be covered under the NBHCP, subject to the following limitation and guidelines:

- (1) Where site investigations indicate vernal pool species may occur, the developer shall notify the Land Use Agency regarding the potential for impacts to vernal pool species. Such notification shall include biological data (see Section A above regarding biological information required) adequate to allow the Land Use Agency, and the USFWS and CDFW to determine the potential for impacts to vernal pool species resulting from the proposed development.
- (2) Following notification by the Land Use Agency, USFWS and CDFW shall identify specific measures required to avoid, minimize and mitigate impacts to vernal pool species to be implemented prior to disturbance and in accordance with adopted standards or established guidelines (e.g., the USFWS programmatic biological opinion for vernal pool species attached as Appendix G to the NBHCP as it may be amended from time to time). In some cases, USFWS and CDFW may require complete avoidance of vernal pool species, such as where Covered Species such as slender orcutt grass, Sacramento orcutt grass, Colusa grass and/or vernal pool tadpole shrimp are found to be present. Such measures shall be identified by USFWS and CDFW within 30 days or as soon as possible thereafter of notification and submittal of biological data to the agencies by the Land Use Agency.
- (3) The requirement by USFWS to preserve a vernal pool within development would be based on identification of an intact vernal pool with minimal disturbance where the presence of one or more of the following species is recorded: slender orcutt grass, Sacramento orcutt grass, Colusa grass, or vernal pool tadpole shrimp. Prior to requiring on-site preservation of a vernal pool area, USFWS shall consider the suitability of the vernal pool as TNBC Mitigation Lands. No such preservation

requirement shall be made unless the vernal pool is a suitable site for The Natomas Basin Conservancy (TNBC) Mitigation Lands. Such vernal pool areas, including any required buffer land dedication, shall apply toward the Land Acquisition Fee component of the development project's NBHCP mitigation obligation.

B. Mitigation Strategies

Vernal pool resources (i.e., vernal pool fairy shrimp, vernal pool tadpole shrimp, midvalley fairy shrimp, Sacramento Orcutt grass, slender Orcutt grass, Colusa grass, legenera, and Bogg's Lake hedge-hyssop) identified through site specific investigations shall be mitigated in one of three general approaches as described below. Strategies to minimize and mitigate the take of the California tiger salamander and western spadefoot toad shall be conducted according to Sections V.A.5 and V.B.4 of the NBHCP.

Avoidance and Preservation On-Site as a Means to Minimize Impacts

In the event USFWS requires on-site preservation in accordance with Section A.3 above, on-site mitigation shall be required. In the event USFWS does not require on-site mitigation, a developer or private land owner may still propose to dedicate fee title or conservation easement for that portion of the property with vernal pool resources and an associated 250-foot buffer surrounding the vernal pool resource to the TNBC. Acceptance of the offer to dedicate shall be subject to review and approval by the Land Use Agency, TNBC Board and the Wildlife Agencies. The TNBC Board and the Wildlife Agencies shall consider the location, connections, species present, condition of the proposed site to be dedicated, and may decide to accept the dedication in lieu of payment of the Land Acquisition Fee portion of the NBHCP Mitigation Fee for the affected acreage. TNBC Board may accept or decline the offer based on the balance of habitat needs and the biological goals of the HCP. If the dedication is accepted, a reduction in the Land Acquisition Fee portion of the habitat Mitigation Fee shall be granted the developer for the portion (calculated on an acreage basis) of the site permanently preserved by easement or dedication. However, habitat Mitigation Fees, in full, must be paid on the remaining developable acreage on the site, and all fees other than Land Acquisition Fees shall be paid for all acres on the site. Additional conditions to preserve the biological integrity of the site (such as reasonable drainage conditions) may be imposed by the Land Use Agency in consultation with TNBC and the Technical Advisory Committee (TAC).

In the event the developer does not support on-site preservation or TNBC does not accept the offer to dedicate, then one of the following mitigation approaches shall be employed.

Construction Period Avoidance and Relocation of Vernal Pool Resources

Relocation of vernal pool resources and commencement of Authorized Development shall be subject to the following mitigation measures will be required:

- ▲ No grading, development or modification of the vernal pool site or the buffer area extending 250 feet around the perimeter of the vernal pool site may occur during the vernal pool "wet" season as identified by USFWS. Protective fencing shall be established around the perimeter of the vernal pool site and the buffer area during the vernal pool wet season.
- ▲ In consultation with TNBC and the TAC, soils and cysts from the vernal pool may be relocated as soon as practicable during the dry season to a suitable TNBC or other reserve site provided the relocation/recreation site is approved by TNBC, and the USFWS.

If it is not practicable to relocate vernal pool resources, and/or TNBC or USFWS determine that TNBC does not have a suitable reserve site for relocation of resources, then the applicant shall follow the mitigation approach outlined below.

Payment into USFWS-Approved Conservation Bank

In the event all of the above approaches are not appropriate for the site, the Land Use Agency shall require the developer to purchase credits from a USFWS-approved mitigation bank in accordance with the standards set forth in the following Table 5.3-3. USFWS shall determine the type and amount of credits to be purchased based on the impacts associated with the development. Mitigation ratios for credits dedicated in USFWS-approved mitigation banks or for acres of habitat outside of mitigation banks shall be as follows:

Table 5.3-3 Mitigation Ratios for Loss of Vernal Pool Habitat

Mitigation Type	Bank	Non-Bank
Preservation	2:1	3:1
Creation	1:1	2:1

Preservation Component: For every acre of habitat directly or indirectly affected, at least two vernal pool credits will be dedicated within a USFWS-approved ecosystem preservation bank, or based on USFWS evaluation of site-specific conservation values, three acres of vernal pool habitat may be preserved on the project site or on another non-bank site as approved by USFWS.

Creation Component: For every acre of habitat directly affected, at least one vernal pool creation credit will be dedicated within a USFWS-approved habitat mitigation bank, or based on USFWS evaluation of site-specific conservation values, two acres of vernal pool habitat created and monitored on the project site or on another non-bank site as approved by USFWS.

3. Measures to Reduce Take of Individual Species

A. Reduce Take of Vernal Pool Species

Measures to Reduce Take on Boggs Lake Hedge-Hyssop, Sacramento Orcutt Grass, Slender Orcutt Grass, Colusa Grass, and Legenere (Measure V.A.5.p from NBHCP)

- (1) Prior to approval of an Urban Development Permit, the involved Land Use Agency shall require a pre-construction survey. If such survey determines Boggs Lake hedge-hyssop, Sacramento orcutt grass, Slender orcutt grass, Colusa grass, or legenere are present, the Land Use Agency shall require the developer to consult with USFWS to determine appropriate measures to avoid and minimize loss of individuals. If Authorized Development is proposed for areas containing vernal pools, the applicant will be required to complete additional review, permitting and mitigation as described under Section V.A.4 of NBHCP.

Measures to Reduce Take of Dwarf Downingia, Ahart’s Dwarf Rush, Red Bluff Dwarf Rush, Sanford’s arrowhead, and Suisun marsh aster (Not Covered by NBHCP)

- (1) Prior to project initiation and during the blooming period for the special-status plant species with potential to occur in the project area, a qualified botanist will conduct protocol-level surveys for special-status plants in areas where potentially suitable habitat would be removed or disturbed by project activities.
- (2) If no special-status plants are found, the botanist shall document the findings in a letter report to the project developer and no further mitigation will be required.
- (3) If special-status plant species are found that cannot be avoided during construction, the project developer shall consult with CDFW and/or USFWS, as appropriate depending on species status, to determine the appropriate mitigation measures for direct and indirect impacts that could occur as

a result of project construction and will implement the agreed-upon mitigation measures to achieve no net loss of occupied habitat or individuals. Mitigation measures may include preserving and enhancing existing populations, creation of offsite populations on project mitigation sites through seed collection or transplantation, and/or restoring or creating suitable habitat in sufficient quantities to achieve no net loss of occupied habitat and/or individuals. A mitigation and monitoring plan shall be developed describing how unavoidable losses of special-status plants will be compensated.

- (4) If relocation efforts are part of the mitigation plan, the plan shall include details on the methods to be used, including collection, storage, propagation, receptor site preparation, installation, long-term protection and management, monitoring and reporting requirements, success criteria, and remedial action responsibilities should the initial effort fail to meet long-term monitoring requirements.
- (5) Success criteria for preserved and compensatory populations shall include:
 - ▲ The extent of occupied area and plant density (number of plants per unit area) in compensatory populations shall be equal to or greater than the affected occupied habitat.
 - ▲ Compensatory and preserved populations shall be self-producing. Populations shall be considered self-producing when: (1) plants reestablish annually for a minimum of five years with no human intervention such as supplemental seeding; and (2) reestablished and preserved habitats contain an occupied area and flower density comparable to existing occupied habitat areas in similar habitat types in the project vicinity.
- (6) If offsite mitigation includes dedication of conservation easements, purchase of mitigation credits, or other offsite conservation measures, the details of these measures shall be included in the mitigation plan, including information on responsible parties for long-term management, conservation easement holders, long-term management requirements, success criteria such as those listed above and other details, as appropriate to target the preservation of long term viable populations.

Measures to Reduce Take of Vernal Pool Fairy Shrimp, Vernal Pool Tadpole Shrimp, and Midvalley Fairy Shrimp (Measure V.A.5.m from NBHCP)

- (1) Prior to approval of an Urban Development Permit, the involved Land Use Agency shall require a pre-construction survey. If such survey determine vernal pool fairy shrimp, vernal pool tadpole shrimp, and midvalley fairy shrimp are present, the Land Use Agency shall require the developer to consult with USFWS to determine appropriate measures to avoid and minimize take of individuals. Procedures for reviewing projects that could affect vernal pools and vernal pool species are discussed under Section V.A.4 of NBHCP.

Measures to Reduce Take on Western Spadefoot Toad (Measure V.A.5.l from NBHCP)

- (1) Prior to approval of an Urban Development Permit, the involved Land Use Agency shall require a pre-construction survey. If such survey determines western spadefoot toad are present, the Land Use Agency shall require the developer to consult with CDFW and USFWS to determine appropriate measures to avoid and minimize take of individuals.

B. Reduce Take of Giant Garter Snake (Measure V.A.5.a from NBHCP)

- (1) Within the Natomas Basin, all construction activity involving disturbance of habitat, such as site preparation and initial grading, is restricted to the period between May 1 and September 30. This is the active period for the giant garter snake and direct mortality is lessened, because snakes are expected to actively move and avoid danger.

- (2) Pre-construction surveys for giant garter snake, as well as other NBHCP Covered Species, must be completed for all development projects by a qualified biologist approved by USFWS. If any giant garter snake habitat is found within a specific site, the following additional measures shall be implemented to minimize disturbance of habitat and harassment of giant garter snake, unless such project is specifically exempted by USFWS.
- (3) Between April 15 and September 30, all irrigation ditches, canals, or other aquatic habitat should be completely dewatered, with no puddled water remaining, for at least 15 consecutive days prior to the excavation or filling in of the dewatered habitat. Make sure dewatered habitat does not continue to support giant garter snake prey, which could detain or attract snakes into the area. If a site cannot be completely dewatered, netting and salvage of prey items may be necessary. This measure removes aquatic habitat component and allows giant garter snake to leave on their own.
- (4) For sites that contain giant garter snake habitat, no more than 24-hours prior to start of construction activities (site preparation and/or grading), the project area shall be surveyed for the presence of giant garter snake. If construction activities stop on the project site for a period of two weeks or more, a new giant garter snake survey shall be completed no more than 24-hours prior to the re-start of construction activities.
- (5) Confine clearing to the minimal area necessary to facilitate construction activities. Flag and designate avoided giant garter snake habitat within or adjacent to the project as Environmentally Sensitive Areas. This area shall be avoided by all construction personnel.
- (6) Construction personnel completing site preparation and grading operations shall receive USFWS approved environmental awareness training. This training instructs workers on how to identify giant garter snakes and their habitats, and what to do if a giant garter snake is encountered during construction activities. During this training an on-site biological monitor shall be designated.
- (7) If a live giant garter snake is found during construction activities, immediately notify the USFWS and the project's biological monitor. The biological monitor, or his/her assignee, shall do the following: Stop construction in the vicinity of the snake. Monitor the snake and allow the snake to leave on its own. The monitor shall remain in the area for the remainder of the work day to make sure the snake is not harmed or if it leaves the site, does not return. Escape routes for giant garter snake should be determined in advance of construction and snakes should always be allowed to leave on their own. If a giant garter snake does not leave on its own within 1 working day, further consultation with USFWS is required.
- (8) Upon locating dead, injured or sick threatened or endangered wildlife species, the Permittees or their designated agents must notify within 1 working day USFWS Division of Law Enforcement (2800 Cottage Way, Sacramento CA 95825) or the Sacramento Fish and Wildlife Office (2800 Cottage Way, Room W2605, Sacramento, CA 95825, telephone 916 414-6600). Written notification to both offices must be made within 3 calendar days and must include the date, time, and location of the finding of a specimen and any other pertinent information.
- (9) Fill or construction debris may be used by giant garter snake as an over-wintering site. Therefore, upon completion of construction activities remove any temporary fill and/or construction debris from the site. If this material is situated near undisturbed giant garter snake habitat and it is to be removed between October 1 and April 30, it shall be inspected by a qualified biologist to assure that giant garter snake are not using it as hibernaculae.
- (10) No plastic, monofilament, jute, or similar erosion control matting that could entangle snakes will be placed on a project site when working within 200 feet of snake aquatic or rice habitat. Possible substitutions include coconut coir matting, tactified hydroseeding compounds, or other material approved by the Wildlife Agencies.

- (11) Fences shall be constructed along the shared boundary of urban development and the North Drainage Canal and the East Drainage Canal within Sutter's Permit Area, subject to the following guidelines: (a) A minimum of 100 feet shall be provided from fence-to-fence and access to the canals shall be limited by gates. (b) A snake deterrent shall be placed along the fences on the North Drainage Canal and the East Drainage Canal (i.e., fence construction that restricts snake movement or an appropriate vegetative barrier either inside or outside of the boundary fence). The design of the deterrent shall be subject to approval by the Wildlife Agencies. (c) The specific fence/snake barrier design adjacent to a given development shall be determined within Sutter County's review of the proposed development and the fence/barrier shall be installed immediately after site grading is completed.
- (12) At the time of urban development along the North and East Drainage Canals, project developer shall consult with the Wildlife Agencies to determine design strategies that would enhance conditions for giant garter snake movement through the North and East Drainage Canals. Possible strategies may include expanded buffer areas and modified canal cross sections if such measures are, in the determination of Sutter and the Water Agencies, found to be feasible.

C. Measures to Reduce Take on Northwestern Pond Turtle (Measure V.A.5.j from NBHCP)

- (1) Take of the northwestern pond turtle as a result of habitat destruction during construction activities, including the removal of irrigation ditches and drains, and during ditch and drain maintenance, shall be minimized by the dewatering requirement described for giant garter snake.

D. Measures to Reduce Take of Swainson's Hawk (Measure V.A.5.b from NBHCP)

Measures to Reduce Cumulative Impacts to Foraging Habitat

- (1) To maintain and promote Swainson's hawk habitat values, Sutter County shall not obtain coverage under the NBHCP and incidental take permits, nor shall Sutter County grant Urban Development Permit approvals, for development on land within the one-mile wide Swainson's Hawk Zone adjacent to the Sacramento River. The City of Sacramento has limited its Permit Area within the Swainson's Hawk Zone to the approximately 252 acres located within the North Natomas Community Plan that was designated for urban development in 1994 and, likewise, shall not grant development approvals within the Swainson's Hawk Zone beyond this designated 252 acres. It should be noted that of these 252 acres of land in the Swainson's Hawk Zone, about 80 acres shall be a 250 foot wide agricultural buffer along the City's side of Fisherman's Lake. Should either the City or the County seek to expand NBHCP coverage for development within the Swainson's Hawk Zone beyond that described above, granting of such coverage would require an amendment to the NBHCP and permits and would be subject to review and approval by the USFWS and the CDFW in accordance with all applicable statutory and regulatory requirements. Because the effectiveness of the NBHCP's Operating Conservation Program (OCP) adequately minimizes and mitigates the effects of take of the Swainson's hawk depends substantially on the exclusion of future urban development from the City's and Sutter County's portion of the Swainson's Hawk Zone, approval by the City of future urban development (i.e., uses not consistent with Agricultural Zoning) in the zone beyond the 170 (252 acres minus 80) acres identified above or approval by Sutter of any future urban development in the Swainson's Hawk Zone would constitute a significant departure from the Plan's OCP and would trigger a reevaluation of the City's and/or Sutter's Permits and possible suspension or revocation of the City's and/or County's permits.

Measures to Reduce Nest Disturbance

- (1) Prior to the commencement of development activities at any development site within the NBHCP area, a pre-construction survey shall be completed by the respective developer to determine whether any Swainson's hawk nest trees shall be removed on-site, or active Swainson's hawk nest sites occur on or within ½ mile of the development site. These surveys shall be conducted

according to the Swainson's Hawk Technical Advisory Committee's (May 31, 2000) methodology or updated methodologies, as approved by USFWS and CDFW, using experienced Swainson's hawk surveyors.

- (2) If breeding Swainson's hawks (i.e., exhibiting nest building or nesting behavior) are identified, no new disturbances (e.g., heavy equipment operation associated with construction) shall occur within ½ mile of an active nest between March 15 and September 15, or until a qualified biologist, with concurrence by CDFW, has determined that young have fledged or that the nest is no longer occupied. If the active nest site is located within one-fourth mile of existing urban development, the no new disturbance zone can be limited to the one fourth mile versus one-half mile. Routine disturbances such as agricultural activities, commuter traffic, and routine facility maintenance activities within one-half mile of an active nest are not restricted.
- (3) Where disturbance of a Swainson's hawk nest cannot be avoided, such disturbance shall be temporarily avoided (i.e., defer construction activities until after the nesting season) and then, if unavoidable, the nest tree may be destroyed during the non-nesting season. For purposes of this provision the Swainson's hawk nesting season is defined as March 15 to September 15. If a nest tree (any tree that has an active nest in the year the impact is to occur) must be removed, tree removal shall only occur between September 15 and February 1.
- (4) If a Swainson's hawk nest tree is to be removed and fledglings are present, the tree may not be removed until September 15 or until CDFW has determined that the young have fledged and are no longer dependent upon the nest tree.
- (5) If construction or other project related activities which may cause nest abandonment or forced fledgling are proposed within the one-fourth mile buffer zone, intensive monitoring (funded by the project sponsor) by a CDFW-approved raptor biologist shall be required. Exact implementation of this measure shall be based on specific information at the project site.

Measures to Prevent the Loss of Nest Trees

- (1) Valley oaks, tree groves, riparian habitat and other large trees shall be preserved wherever possible. The City and Sutter County shall preserve and restore stands of riparian trees used by Swainson's hawks and other animals, particularly near Fisherman's Lake and elsewhere in the Plan Area where large oak groves, tree groves and riparian habitat have been identified in the Plan Area.
- (2) The raptor nesting season shall be avoided when scheduling construction near nests in accordance with applicable guidelines published by the Wildlife Agencies or through consultation with the Wildlife Agencies.
- (3) Annually, prior to the Swainson's hawk nesting season (March 15 to September 15) and until buildout of their Authorized Development has occurred, the City of Sacramento and Sutter County shall notify each landowner of any property within the permit area(s) on which a Swainson's hawk nest tree is present, and shall identify the nest tree, and alert the owner to the specific mitigation measures prohibiting the owner from removing the nest tree.

Measures to Mitigate the Loss of Swainson's Hawk Nest Trees

- (1) The NBHCP shall require 15 trees (5-gallon container size) to be planted within the habitat reserves for every Swainson's hawk nesting tree anticipated to be impacted by Authorized Development. It shall be the responsibility of each Land Use Agency approving development that shall impact Swainson's hawk nest trees to provide funding from the applicable developer for purchase, planting, maintenance and monitoring of trees at the time of approval of each Authorized

Development project. TNBC shall determine the appropriate cost for planting, maintenance and monitoring of trees.

- (2) The Land Use Agency Permittee approving a project that impacts an existing Swainson's hawk nest tree shall provide funding sufficient for monitoring survival success of trees for a period of 5 years. For every tree lost during this time period, a replacement tree must be planted immediately upon the detection of failure. Trees planted to replace trees lost shall be monitored for an additional 5-year period to ensure survival until the end of the monitoring period. A 100 percent success rate shall be achieved. All necessary planting requirements and maintenance (i.e., fertilizing, irrigation) to ensure success shall be provided. Trees must be irrigated for a minimum of the first 5 years after planting, and then gradually weaned off the irrigation in an approximate 2-year period. If larger stock is planted, the number of years of irrigation must be increased accordingly. In addition, 10 years after planting, a survey of the trees shall be completed to assure 100 percent establishment success. Remediation of any dead trees shall include completion of the survival and establishment process described.
- (3) Of the replacement trees planted, a variety of native tree species shall be planted to provide trees with differing growth rates, maturation, and life span. This shall ensure that nesting habitat shall be available quickly (5-10 years in the case of cottonwoods and willows), and in the long term (i.e., valley oaks, black walnut and sycamores), and minimize the temporal losses from impacts to trees within areas scheduled for development within the 50-year permit life. Trees shall be sited on reserves in proximity to hawk foraging areas. Trees planted shall be planted in clumps of three trees each. Planting stock shall be a minimum of 5-gallon container stock for oak and walnut species.
- (4) To reduce temporal impacts resulting from the loss of mature nest trees, mitigation planting shall occur within 14 months of approval of the NBHCP and ITP's. It is estimated at this time that 4 nesting trees within the City of Sacramento are most likely to be impacted by Authorized Development in the near term. Therefore, to reduce temporal impacts, the City of Sacramento will advance funding for 60 sapling trees of diverse, suitable species (different growing rates) to TNBC within the above referenced 14 months. It is anticipated that the City will recover costs of replacement nest trees as an additional cost to be paid by private developers at the time of approval of their development projects that impact mature nest trees.
- (5) For each additional nesting tree removed by Land Use Agencies' Covered Activities, the Land Use Agency shall fund and provide for the planting of 15 native sapling trees of suitable species with differing growth rates at suitable locations on TNBC preserves. Funding for such plantings shall be provided by the applicable Permittee within 30 days of approving a Covered Activity that will impact a Swainson's hawk nesting tree.

E. Measures to Reduce Loss of White-tailed Kite and Other Nesting Raptors (Not Covered by NBHCP)

- (1) If removal of a known nest tree is required, it shall be removed when no active nests are present, generally between September and February.
- (2) If project activity would commence between February 1 and August 31, a qualified biologist shall be retained to conduct preconstruction surveys for active nests in suitable habitat on and within 500 feet of the project site no more than 14 days and no less than seven days before commencement of project-related ground disturbance or vegetation removal activities. If this survey does not identify any nesting raptors in the area within the project site that would be disturbed, no further mitigation would be required.
- (3) If an occupied nest is present, a 500-foot no-disturbance buffer shall be established around the nest. The size of the buffer may be adjusted based upon observed behavior of the nesting birds. If construction activities cause the nesting bird to vocalize, make defensive flights at intruders, get up

from a brooding position, or fly off the nest, then the protective buffer shall be increased such that activities are far enough from the nest that the birds no longer demonstrate agitated behavior. The exclusionary buffer shall remain in place until the chicks have fledged or as otherwise determined by a qualified biologist. No project activity shall commence within the buffer area until a qualified biologist confirms that the nest is no longer active or that the young have fully fledged. Monitoring of the nest by a qualified biologist shall be required if the activity has potential to adversely affect the nest.

F. Measures to Reduce Take of Burrowing Owl (Measure V.A.5.h from NBHCP)

- (1) Prior to the initiation of grading or earth disturbing activities, the applicant/developer shall hire a CDFW-approved qualified biologist to perform a pre-construction survey of the site to determine if any burrowing owls are using the site for foraging or nesting. The pre-construction survey shall be submitted to the Land Use Agency with jurisdiction over the site prior to the developer's commencement of construction activities and a mitigation program shall be developed and agreed to by the Land Use Agency and developer prior to initiation of any physical disturbance on the site.
- (2) Occupied burrows shall not be disturbed during nesting season (February 1 through August 31) unless a qualified biologist approved by the CDFW verifies through non-invasive measures that either: 1) the birds have not begun egg-laying and incubation; or 2) that juveniles from the occupied burrows are foraging independently and are capable of independent survival.
- (3) If nest sites are found, the USFWS and CDFW shall be contacted regarding suitable mitigation measures, which may include a 300 foot buffer from the nest site during the breeding season (February 1 - August 31), or a relocation effort for the burrowing owls if the birds have not begun egg-laying and incubation or the juveniles from the occupied burrows are foraging independently and are capable of independent survival. If on-site avoidance is required, the location of the buffer zone shall be determined by a qualified biologist. The developer shall mark the limit of the buffer zone with yellow caution tape, stakes, or temporary fencing. The buffer shall be maintained throughout the construction period.
- (4) If relocation of the owls is approved for the site by USFWS and CDFW, the developer shall hire a qualified biologist to prepare a plan for relocating the owls to a suitable site. The relocation plan must include: (a) the location of the nest and owls proposed for relocation; (b) the location of the proposed relocation site; (c) the number of owls involved and the time of year when the relocation is proposed to take place; (d) the name and credentials of the biologist who will be retained to supervise the relocation; (e) the proposed method of capture and transport for the owls to the new site; (f) a description of the site preparations at the relocation site (e.g., enhancement of existing burrows, creation of artificial burrows, one-time or long-term vegetation control, etc.); and (g) a description of efforts and funding support proposed to monitor the relocation. Relocation options may include passive relocation to another area of the site not subject to disturbance through one way doors on burrow openings, or construction of artificial burrows in accordance with CDFG's March 7, 2012 Staff Report on Burrowing Owl Mitigation.
- (5) Where on-site avoidance is not possible, disturbance and/or destruction of burrows shall be offset through development of suitable habitat on TNBC upland reserves. Such habitat shall include creation of new burrows with adequate foraging area (a minimum of 6.5 acres) or 300 feet radii around the newly created burrows. Additional habitat design and mitigation measures are described in CDFG's March 7, 2012 Staff Report on Burrowing Owl Mitigation.

G. Measures to Reduce Take on Loggerhead Shrike (Measure V.A.5.g from NBHCP)

- (1) Prior to approval of Urban Development Permit, the involved Land Use Agency shall require a pre-construction survey.

- (2) If surveys identify an active loggerhead shrike nest that will be impacted by Authorized Development, the developer shall install brightly colored construction fencing that establishes a boundary 100 feet from the active nest. No disturbance associated with Authorized Development shall occur within the 100-foot fenced area during the nesting season of March 1 through July 31. A qualified biologist, with concurrence of USFWS must determine young have fledged or that the nest is no longer occupied prior to disturbance of the nest site.

Significance after Mitigation

Implementation of Mitigation Measures 5.3-2 would reduce significant impacts on special-status species to a **less-than-significant** level because it would avoid any substantial adverse effects through pre-construction surveys, avoidance of vernal pool habitats, and implementation of measures to reduce take of individual species, through participation in the NBHCP and implementation of additional measures to avoid and minimize impacts to special-status species not covered by the NBHCP.

Impact 5.3-3: Loss of Wetlands or Waters

Implementation of the project would result in fill of wetlands or other waters. This would be a **significant** impact.

Implementation of the project could result in fill of wetland features on the site. Construction activities could result in the loss of approximately 1.0-acre of vernal pools and swales on the Krumenacher Ranch and approximately 0.1 acre of freshwater emergent wetland, 0.001 acre of seasonal wetland, 3.3 acres of open water habitat, and 2.43 acres of drainage/irrigation ditch in the Panhandle PUD area. Because of past land uses that have disturbed and fragmented the wetlands, the quality of wetlands in the project area is poor. These features are not connected to any major watershed. These features may not be considered jurisdictional waters of the United States, but they would likely be considered waters of the State and regulated by the Regional Water Quality Control Board (RWQCB). Loss or fill of wetlands, waters of the United States, or waters of the state would be a **significant impact**.

Mitigation Measure 5.3-3 No Net Loss of Wetlands

Prior to ground-disturbing activity, the project developer shall submit a wetland delineation report to USACE for verification. For portions of the project area that have been delineated previously, the previous delineations shall be updated and re-verified by USACE. Based on the jurisdictional determination, the project developer shall determine the exact acreage of waters of the United States, if any, and waters of the state to be filled as a result of project implementation.

If any of the waters to be filled are determined by the USACE to be waters of the United States, the project developer shall obtain a USACE Section 404 permit and RWQCB Section 401 certification before any groundbreaking activity. The project developer shall implement all permit conditions.

If all waters in the project area are disclaimed by USACE, the project developer shall file a report of waste discharge with RWQCB prior to any groundbreaking activity within 50 feet of, or filling of, any wetland or other water, and comply with all waste discharge requirements prescribed by RWQCB.

The project developer shall commit to replace or restore on a “no net loss” basis (in accordance with USACE and/or RWQCB) the acreage and function of all wetlands and other waters that would be removed, lost, or degraded as a result of project implementation. Wetland habitat shall be restored or replaced at an acreage and location and by methods agreeable to USACE and the Central Valley RWQCB, as appropriate, depending on agency jurisdiction, and as determined during the Section 401 and Section 404 permitting processes or the waste discharge requirements. If available, compensatory mitigation shall be provided through the purchase of credits at a mitigation bank approved by USACE and RWQCB, as appropriate depending on agency jurisdiction.

If mitigation bank credits are not available and it is required by USACE, the project developer shall prepare a mitigation plan detailing how the loss of aquatic functions will be replaced. The mitigation plan shall describe compensation ratios for acres filled, mitigation sites, a monitoring protocol, annual performance standards and final success criteria for created or restored habitats, corrective measures to be applied if performance standards are not met.

Significance after Mitigation

Implementation of Mitigation Measure 5.3-3 would reduce significant impacts on waters of the United States and waters of the state to a **less-than-significant** level because it would ensure no net loss of functions and acreage of wetlands, other waters of the United States, and waters of the state.

Impact 5.3-4: Loss of Trees

Implementation of the project could result in loss of protected tree resources. This would be a **potentially significant** impact.

Several species of trees occur within the study area including native oaks, sycamore, and cottonwoods. Tree surveys were conducted in the study area in 2003, 2005, and 2006 by Sierra Nevada Arborists (2003 a-c, 2005, and 2006) (Table 5.3-4). Some of these trees were identified as having structural or health defects and are recommended for removal (indicated with an asterisk in the table). The City of Sacramento Municipal Code Title 12 protects certain trees and directs responsible parties to maintain such trees. Loss of protected trees in the project area would be a **significant impact** because it would conflict with the City ordinance which aims to protect trees as a significant resource to the community (see Table 5.3-4). Loss of Swainson's hawk nest trees is discussed in Impact 5.3-2.

Table 5.3-4 Protected and Other Trees Occurring In The Project Area

Species	Protected Trees	Trees (Non-Protected)	Total Trees
California black walnut (<i>Juglans californica</i>)	0	7	7
California sycamore (<i>Platanus racemosa</i>)	1	0	1
Fremont cottonwood (<i>Populus fremontii</i>)	0	1(1*)	1(1*)
Coast live oak (<i>Quercus agrifolia</i>)	1	0	1
Valley oak (<i>Quercus lobata</i>)	7	0	7
English walnut (<i>Juglans regia</i>)	0	2	2
Almond (<i>Prunus dulcis</i>)	1(1*)	0	1(1*)
Weeping cherry (<i>Prunus subhirtelia</i> 'Pendula')	0	1	1
Blue gum eucalyptus (<i>Eucalyptus globulus</i>)	1(1*)	0	1(1*)
Edible fig (<i>Fica carica</i>)	1(1*)	0	1(1*)
Tree of Heaven (<i>Ailanthus altissima</i>)	2(2*)	0	2(2*)
Date palm (<i>Phoenix dactylifera</i>)	3	3	6
Italian stone pine (<i>Pinus pinea</i>)	1	1	2
Totals	17 (*5)	16 (1*)	33 (6*)

* indicates # of trees recommended for removal due to defects, compromised health and/or structural instability.

Mitigation Measure 5.3-4: Protection and replacement of trees.

The following measures shall be implemented to avoid impacts to trees to be retained. These measures shall be included in the project's tree protection plans, tree replacement plans, and project improvement plans.

- ▲ No grade cuts greater than 1 foot shall occur within the driplines of protected trees, and no grade cuts whatsoever shall occur within 5 feet of their trunks;
- ▲ No fill greater than 1 foot shall be placed within the driplines of protected trees and no fill whatsoever shall be placed within 5 feet of their trunks;
- ▲ No trenching whatsoever shall be allowed within the driplines of protected trees. If it is absolutely necessary to install underground utilities within the driplines of a protected tree, the trench shall be either bored or drilled;
- ▲ No irrigation system shall be installed within the driplines of preserved native oak tree(s), which may be detrimental to the preservation of the native oak tree(s) unless specifically authorized by the approving body.
- ▲ Landscaping beneath native oak trees may include non-plant materials such as boulders, cobbles, wood chips, etc. The only plant species which shall be planted within the driplines of oak trees are those which are tolerant of the natural semi-arid environs of the trees. Limited drip irrigation approximately twice per summer is recommended for the understory plants.

Where it is not possible to avoid impacts to protected trees, tree replacement shall be provided consistent with the City Tree Preservation Ordinance to the satisfaction of the City. Replacement of trees shall occur at a ratio of one inch of tree replaced for each inch of tree removed (1:1 ratio).

Significance after Mitigation

Implementation of Mitigation Measures 5.3-4 would reduce significant impacts protected trees to a **less-than-significant** level because impacts to trees to be retained in the project area would be minimized and replacement trees would be planted consistent with City ordinance for the trees to be removed.

5.3.4 Cumulative Setting, Impacts, and Mitigation

CUMULATIVE SETTING

The biological resources cumulative setting consists Sacramento region and the Natomas Basin. The existing and projected future urban development in the region is expected to further contribute to the loss of biological resources. The cumulative impact takes into account planned and proposed development anticipated in the County (see Section 5.0 for a further description of cumulative growth conditions).

CUMULATIVE IMPACTS

Impact 5.3-5: Cumulative Impacts to Biological Resources

Implementation of the project in combination with potential development in the region would contribute to cumulative impacts associated with significant effects to loss of habitat, special-status plant and wildlife species, wetlands, and heritage trees. Project mitigation measures and its participation in the Natomas Basin Habitat Conservation Plan would offset its contribution to the cumulative loss of biological resources. Thus, the project's contribution would be **less than cumulatively considerable**.

As previously described under impacts 5.3-1 through 5.3-4, the project would result in significant impacts to special-status species, wetland resources, and trees. These project impacts would be in addition to other development activities in the region that would result in similar impacts. Thus, the project's contribution is cumulatively considerable.

Implementation of Mitigation Measures 5.3-2, 5.3-3, and 5.3-4 would mitigate the project's contribution to special-status species, wetland, and tree impacts associated with the project as well as require participation in the NBHCP. Thus, implementation of these mitigation measures would mitigate the project's contribution to cumulative biological resource impacts to species covered by the NBHCP to **less than cumulatively considerable**. Resources not considered under the NBHCP will also be mitigated for by implementation of Mitigation Measures 5.3-2, 5.3-3, and 5.3-4, including achieving a no-net-loss of wetlands and compensating for loss of trees protected by City ordinance. Mitigated impacts to resources not covered by the NBHCP would be **less than cumulatively considerable**.

Mitigation Measures

No mitigation is required.

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5.4 ARCHAEOLOGICAL, HISTORICAL, AND TRIBAL CULTURAL RESOURCES

This section analyzes and evaluates the potential impacts of the project on known and unknown cultural resources. Cultural resources include districts, sites, buildings, structures, or objects generally older than 50 years and considered to be important to a culture, subculture, or community for scientific, traditional, religious, or other reasons. They include pre-historic resources, historic-era resources, and “tribal cultural resources” (the latter as defined by Assembly Bill (AB) 52, Statutes of 2014, in Public Resources Code [PRC] Section 21074).

Archaeological resources are locations where human activity has measurably altered the earth or left deposits of prehistoric or historic-era physical remains (e.g., stone tools, bottles, former roads, house foundations). Historical (or architectural) resources include standing buildings (e.g., houses, barns, outbuildings, cabins) and intact structures (e.g., dams, bridges, roads, districts), or landscapes. A cultural landscape is defined as a geographic area (including both cultural and natural resources and the wildlife therein), associated with a historic event, activity, or person or exhibiting other cultural or aesthetic values. Tribal cultural resources were added as a resource subject to review under CEQA, effective January 1, 2015 under AB 52. This is a new category of resources under CEQA and includes site features, places, cultural landscapes, sacred places or objects, which are of cultural value to a Tribe.

One comment letter regarding cultural resources was received in response to the Notice of Preparation (see Appendix A). The Native American Heritage Commission requested AB 52 and SB 18 compliance information; while SB 18 does apply to the project because there is a General Plan amendment associated with the project (which is the trigger for SB 18 compliance), SB 18 is not a CEQA requirement and therefore is not discussed in this section. AB 52 compliance is described below.

The primary sources of information for this section are:

- ▲ North Central Information Center records search (2017);
- ▲ *Cultural Resources Letter Report for the Panhandle EIR Update Project* (MBI 2017);
- ▲ *Archaeological and Historical Resources Investigations for the Panhandle Planned Unit Development Project in Sacramento County* (PMC 2007);
- ▲ *Determination of Eligibility and Effect for the Brothers Parcel, Natomas Panhandle Annexation Area* (Peak & Associates, Inc. 2006a);
- ▲ *Determination of Eligibility and Effect for the Natomas Panhandle Annexation Project Area* (Peak & Associates, Inc. 2006b);
- ▲ *Archaeological and Historic Investigations for the North Natomas High/Middle School Project* (PMC 2004); and,
- ▲ *Draft Report: Archeological Inventory Report – Natomas Locality, Cultural Resources Inventory and Evaluation for the American River Watershed Investigation, El Dorado, Placer, Sacramento, and Sutter Counties, California* (Dames and Moore 1994).

5.4.1 Environmental Setting

REGIONAL PREHISTORY

The Central Valley of California has long held the attention of California archaeologists. The project area has been of archaeological interest dating to the 1920s and is significant in the development of both Central Valley and California archaeology. The first cultural chronology for central California was based on the results of excavations conducted in the lower Sacramento River Valley. The chronology identified three archaeological cultures, which were named Early, Transitional, and Late. Subsequently the Central California Taxonomic System (CCTS), which provided a cultural sequence for central California from the interior to the coast, was presented. The refinement of the CCTS has been a central theme in archaeological research in the project area. The CCTS was redefined into three time periods, designated the Early, Middle, and Late Horizons.

The Windmill cultural pattern (4,500-2,500 before present [B.P.]) was identified as representative of the Early Horizon and is highlighted by: large, heavy, stemmed and leaf-shaped projectile points commonly made of a variety of materials; perforate charmstones; haliotis and olivella shell beads and ornaments; trident fish spears; baked clay balls (presumably for cooking in baskets); flat slab milling stones; small numbers of mortars; and ventrally extended burials oriented toward the west. The subsistence pattern of Windmill groups probably emphasized hunting and fishing, with seed collecting (possibly including acorns) supplementing the diet.

Windmill groups appear to be firmly established in the Lower Sacramento River Valley by 4,000 B.P., and are routinely interacting with their neighbors. For example, Windmill groups acquired: obsidian from at least two Coast Range and three trans-Sierran sources; haliotis and olivella shells and ornaments from the coast; and quartz crystals from the Sierra foothills. It is hypothesized that the bulk of these materials were acquired through trade. Some of these materials, however, may have been acquired as part of seasonal movements between the Central Valley and the Sierra Nevada foothills. Archaeological sites along the edge of the Sierra Nevada foothills at Camanche Reservoir, at the 12 Bridges Golf Course in Rocklin, and at Applegate, further support a link between Windmill cultures of the Central Valley and cultures of the Sierra Nevada foothills.

The Cosumnes cultural pattern (dated between 2,500 B.P. and A.D. 1500 B.P.) was identified as representative of the Middle Horizon, and is characterized by: tightly flexed burials with variable orientation; red ochre stains in burials; distinctive olivella and haliotis beads and ornaments; distinctive charmstones; cobble mortars and evidence of wooden mortars; numerous bone tools and ornaments; large, heavy foliate and lanceolate concave base projectile points made of materials other than obsidian; and objects of baked clay. Middle Horizon cultures are generally quite different from Windmill, but do continue to exhibit some of the characteristics of Windmill such as similar projectile point forms. The similarities in projectile point form may be indicative of cultural continuity and/or functional and adaptational success of particular forms.

The Late Horizon is characterized by the Hotchkiss Culture, and spans the time period from 1,500 B.P. to European contact. The Hotchkiss Culture primarily represents both local innovation and the blending of new cultural traits introduced into the Central Valley. It is distinguished by intensive fishing, extensive use of acorns, elaborate ceremonialism, social stratification, and cremation of the dead.

ETHNOGRAPHY

The project area is located in Valley Nisenan territory, but also is near the borders of Plains Miwok territory. Valley Nisenan primarily inhabited the area along the Sacramento River and Plains Miwok inhabited the lower reaches of the Mokelumne and Cosumnes Rivers and the banks of the Sacramento River from Rio Vista to Freeport. Valley Nisenan are members of the Maiduan language family of the Penutian stock and Miwok are members of the Utian language family of the Penutian Stock.

The basic social and economic group of Nisenan is the family or household unit, with the nuclear and/or extended family forming a corporate unit. Among the Nisenan these groups combined to form tribelets, which were their largest sociopolitical unit. Tribelet populations of Valley Nisenan were as large as 500 persons living in permanent villages that were usually located on raised areas to avoid flooding. Nisenan moved from one area or elevation to another to harvest plants, fish, and hunt game across contrasting life zones that are in relatively close proximity to each other. Valley Nisenan, however, generally did not range beyond the valley and lower foothills.

The basic social and economic group of Miwok is the family or household unit, with the nuclear and/or extended family forming a corporate unit. These basic units were combined into distinct, named village or hamlet groups that functioned as headquarters of a localized patrilineage. Lineage groups were important political and economic units that combined to form tribelets, the largest sociopolitical unit of the Miwok. Tribelets of Plains Miwok consisted of between 300 to 500 persons. Each tribelet had a chief or headman who exercised political control over the villages that comprised it. The office of tribelet chief was hereditary, with the chieftainship being the property of a single patrilineage within the tribelet. The office usually passed from father to son, but in the absence of a male heir a daughter could assume the office of chief.

Valley Nisenan and Plains Miwok shared a variety of utilitarian flaked tools (e.g., projectile points and cutting implements) and ground stone tools (e.g., pestles). Obsidian was a highly-valued material for tool manufacture, and was usually imported. Both groups also fostered trading relationships with surrounding groups for commodities such as salt, marine shells, and basketry. Other tools and weapons were made of bone and wood, including: stirring sticks; mush paddles; pipes; and hide preparation equipment. Fishing formed a large component of Valley Nisenan and Plains Miwok subsistence activity. Consequently, they used an extensive assemblage of fishing-related implements and facilities including: spears; cordage lines with bone fishhooks; harpoons with detachable points; stream diversion dams; nets of cordage and basketry; weirs; and an array of fish traps. Other specialized food processing and cooking techniques primarily included grinding and leaching of ground acorn and buckeye meal. Fist-sized, heated stones were used to cook and/or warm liquid-based foods such as acorn gruel.

HISTORIC SETTING

Regional History

Spanish exploration of the Central Valley dates to the late 1700s, but exploration of the northern section of the Central Valley and contact with its Native American population did not begin until the early 1800s, as described above. The second quarter of the nineteenth century encompasses the Mexican Period (ca. 1821-1848) in California. This period is an outgrowth of the Mexican Revolution, and its accompanying social and political views affected the mission system across California. In 1833 the missions were secularized and their lands divided among the *Californios* as land grants called *ranchos*. These ranchos facilitated the growth of a semi-aristocratic group that controlled the larger ranchos. The work on these large tracts of land was accomplished by the forced labor of local Native Americans.

Consequently, Valley Nisenan and Plains Miwok were forced into a marginalized existence as peons or vaqueros on large ranchos. The current project area is within the nearly 49,000-acre New Helvetia Rancho originally granted to J.B.R. Cooper in 1833. In 1839 John A. Sutter assumed the grant and established a settlement at Sutter's Fort. Simultaneously with the exploration of the Central Valley and the flanks of the Sierra Nevada, trails were being blazed across the plains and mountains facilitating the westward migration of Euroamericans, such as the establishment of the Mormon Emigrant Trail across the Sierra Nevada. The discovery of gold at Sutter's Mill in Coloma in 1848, however, was the catalyst that caused a dramatic alteration of both Native American and Euroamerican cultural patterns in California.

Once news of the discovery of gold spread, a flood of Euroamericans entered the region, and gravitated to the area of the "Mother Lode." Initially, the Euroamerican population grew slowly, but soon exploded as the presence of large deposits of gold was confirmed in the Sacramento area. The population of California quickly swelled from an estimated 4,000 Euroamericans in 1848 to 500,000 in 1850. Sacramento,

established in 1848 by John A. Sutter, Jr., reflected regional changes in population, and was incorporated as a city in 1850. The discovery of gold and the large influx of Euroamerican immigrants had a positive effect on the growth and economic development of Sacramento, but a negative effect on Native American cultures and marked the beginning of a relatively rapid decline of both Native American populations and culture.

The latter half of the nineteenth century witnessed an ongoing and growing immigration of Euroamericans into the area, an influx also accompanied by regional cultural and economic changes. These changes are highlighted by the development of Sacramento and other towns associated with expanding business opportunities related to either gold mining or agriculture. The development of towns in the area continued into the early 20th century. Today Rio Linda and the surrounding areas (e.g., North Natomas) are witnessing extensive residential and commercial development.

Flood Control Along the Sacramento and American Rivers

There is a long history of flooding in the Central Valley because of winter rains and spring melting of snow packs in the Sierra Nevada. Flooding affected both the growth of cities and agriculture across the valley. The recognition of a need for flood control, including levee construction, dates to the 1850s in the Central Valley. This date corresponds to the first well-documented flood in Sacramento. This flood occurred in January 1850 when the Sacramento and American Rivers inundated Sacramento. The 1850 flood highlighted the need for flood control and also stimulated Sacramento residents to construct a better levee system around the city. In fact, the flood of 1850 led to the formation of a Levee Committee and the passage of a bond to fund construction of levees along the Sacramento and American Rivers. Consequently, a levee was constructed from Sutterville, about two miles south of Sutter's Fort, extending north on the east bank of the Sacramento River to the mouth of the American River and then east along the south bank of the American River for approximately 2.5 miles. The new levee, however, was breached by floodwaters in both 1852 and 1853. The levee was subsequently widened and strengthened in 1853 and 1854. In spite of this work, the levee failed again in 1860.

Flooding along the Sacramento and American Rivers continued through the winter of 1861-1862 with four major floods breaching levees east of Sacramento and devastating the city. In response to these disastrous floods Sacramento established a Board of City Levees Commission to review alternatives for flood protection for the city. One alternative for flood protection of Sacramento proposed straightening a sharp bend in the American River at Sutter or China Slough near the river's confluence with the Sacramento River. The re-routing of the American River extended from the north end of 28th Street, a point of continual levee collapse, through the slough north of Sutter Slough and into the Sacramento River. Sutter Slough was subsequently drained and reclaimed by 1905. The current configuration of the American River near its intersection with the Sacramento River is the result of this flood control project.

The State Assembly was also concerned about flood control, and in an attempt to address the problem on a regional basis passed Assembly Bill AB 54 in 1861 which established the Board of Swamp Land Commissioners, the first public commission in the state. The Board of Swamp Land Commissioners could establish Swamp Land Districts and could direct the building of levees and other structures. Consequently, the area immediately north of Sacramento, encompassing much of the American River Basin, was designated Swamp Land District 1. Levee construction began in the district in 1863 and by 1865 twenty-six miles of levee and twenty miles of drainage canals were in place across the district.

A major flood in 1907 bolstered interest in flood control systems and also the formation of reclamation districts to provide flood protection and lands for agriculture, residential, and business development. The American Reclamation District was created and encompassed the area previously designated as Swamp Land District 1. The district followed the general outline of a 1907 engineering report commissioned by Hanford that proposed a 50,000-acre reclamation district with a levee entirely around it. A similar report prepared in 1910 by the U.S. Army Corps of Engineers (USACOE) formed the basis for the Sacramento Flood Control Project. This flood control project was adopted by the State in 1911 and implemented across the Central Valley. Subsequently, Reclamation District (RD) 1000 was created on April 8, 1911 by the California State Legislature as an independent agency administered by a Board of Trustees elected by landowners.

RD1000 encompassed the American Reclamation District, and construction of levees enclosing it began in May 1912, eventually being completed in 1914. Examples of these levees include: the Natomas East Main Drainage Canal (NEMDC); River Levee along the Sacramento River; and East Levee along the southern boundary of the district near the American River.

Opposition to levee construction, however, came from the City who believed that the levees immediately north of the City would increase the danger of flooding. This resulted in the omission of land from the southern part of RD1000. The adjustment of the boundaries of RD1000 was to ensure that levees could not be built near the American River, but rather back from the river and away from the City. The adjustment of the boundaries of RD1000 led to the creation of RD1400 on June 13, 1913, which consisted of 462-acres along the north bank of the American River near its intersection with the Sacramento River. RD1400, however, was consolidated into RD1000 in 1922, and levees were built around it.

Krumenacher Ranch

The Krumenacher Ranch is located in the northern portion of the Panhandle Annexation Area. The area was originally acquired by John Gillig who sold the land to John Weber in 1861. John Weber died in 1878, and his holdings passed to his wife Elizabeth. Between 1880 and 1882, Elizabeth apparently acquired other adjacent tracts of land forming a tract totaling almost 480 acres. Elizabeth Weber died in December 1890, leaving four children and two grandchildren. The land continued to be held by the estate of Elizabeth Weber for a number of years. Elizabeth's daughter Louisa married a man named Felber in about 1897, and they apparently resided at the ranch. By 1911, the land had been subdivided, with August Weber owning the Northern Portion, and Louisa Felber the owner of the quarter section to the north. Subsequently, there appears to have been multiple land transfers because in 1913, Louisa Felber owned the land occupied by the current Krumenacher Ranch. She sold the land to Edwin Krumenacher. The family purchased the property despite the impending development of RD 1000 and the possible construction of a canal across their property.

The Krumenacher family moved to the site from a ranch they were renting in Lone. The Krumenachers had an established dairy operation in Lone, and continued their dairy operation at the ranch in the project area. The site was attractive because of its proximity to the Sacramento Northern Railroad. The railroad was located just east of the ranch, and a rail stop was developed in the neighboring community of Rio Linda in 1914. This rail stop provided a means for quickly delivering milk, a very perishable product, to a large market in the City of Sacramento and the surrounding area. When the Krumenacher family moved to the property originally owned by the Weber family in the project area, it is reported that the two-story Weber family home was still standing near the current site of the wash house and barn on the Krumenacher Ranch. The residence, however, was in very poor condition and the Krumenachers demolished it. Other structures built by the Krumenachers immediately after their occupation of the site include the tank house and a barn. The ranch complex also included a chicken coop that was originally built on a ranch to the north and hauled to the Krumenacher Ranch in the 1930s.

Initial activities at the Krumenacher Ranch appear to include a small-scale dairy operation (e.g., an operation that included relatively few cows and no milk storage or processing facilities) and general agriculture (e.g., the production of crops). The 1920 and 1930 census identifies the Krumenacher Ranch as a general farm, with Edwin Krumenacher as the head of household. In addition, the 1916 Sacramento telephone book lists 28 businesses under the category "Dairies and Creameries," the 1925 Sacramento telephone book lists 24 entries under "Dairy," the 1935 Sacramento telephone book lists 22 dairies, and the 1945 Sacramento telephone book lists 22 dairies, but the Krumenacher Ranch does not appear in these telephone books or other County Directories as a dairy. The census data and telephone book entries suggest that the Krumenacher Ranch may be described as a small-scale farming operation that included dairy cows to produce raw milk and probably chickens for eggs, with the sale of milk and eggs adding to the general income of the ranch. Small-scale farms primarily producing crops that also may have included a few dairy cows for the production of raw milk are typical of farm/ranch complexes within RD 1000 and across the Sacramento Valley during at least the first half of the 20th century. Dairy operations continued on the ranch until 1985, but it is probable that crop production and dairying were of equal importance at the

Krumenacher Ranch from the 1910s through the 1980s. This mix of agricultural activities is typical of small-scale agricultural operations in the area and across the Sacramento Valley.

RECORDS SEARCHES, SURVEYS, AND CONSULTATION

Previous records searches and pedestrian surveys have been completed for the project site by PMC in September 2004, Peak & Associates, Inc. in September 2005 (revised September 2006) which was also supplemented in February 2006, then again in September 2007 by PMC for the 2006 EIR/2007 Final EIR. In addition, Michael Baker International (MBI) completed a historical records search at North Central Information Center (NCIC) and a peer review of the current evaluation status and the potential significance of the Krumenacher Ranch in January 2017.

Ascent Environmental conducted an updated historic and archaeological record search at NCIC in March 2017. A field review of the project area in 2017 identified that the only substantial changes to land uses on the project area since the previous project area pedestrian surveys and reports consist of the partial construction of the East Natomas Education Complex.

Archaeological Resources

A records search of the NCIC in June 2005 revealed that one historic site (the Krumenacher Ranch) also had an archaeological component. The 2005 survey did not include the non-participating owners' parcels or the Krumenacher parcel at the northern end of the project area. In select locations, small holes were dug to examine the sediments for archaeological materials. Based on the results of this inspection, no prehistoric or historic-era archaeological resources were found within the southern portion of the project area. A follow-up survey in September 2006 of the Krumenacher parcel revealed that the archaeological component of the site, a collection of ground stone artifacts, had apparently been collected or otherwise removed. There was no evidence of any prehistoric artifacts or any indication that the area ever supported prehistoric occupation or use. The report prepared by PMC in 2007 also did not identify any archaeological sites.

Historical Resources

A records search at NCIC in June 2005 for the project site revealed that one historic site located within the project site, the Krumenacher Ranch (CA-SAC-483/H). The records search also disclosed that the project area lies within the Reclamation District 1000 Rural Historic Landscape District. In November 2016, MBI conducted a records search (File No.: SAC-16-179) at NCIC. The intent of the records search was to identify all known cultural resources and cultural resources studies regarding the Krumenacher Ranch within the project area to inform future planning efforts associated with the ranch. As part of the records search, the following federal and California inventories were reviewed:

- ▲ California Inventory of Historic Resources (OHP 1976).
- ▲ California Points of Historical Interest (OHP 1992 and updates).
- ▲ California Historical Landmarks (OHP 1996).
- ▲ Archaeological Determinations of Eligibility (OHP 2012a). This directory includes OHP determinations of eligibility for archaeological sites in Sacramento County.
- ▲ Directory of Properties in the Historic Property Data File. The directory includes the listings of the National Register of Historic Places (National Register), National Historic Landmarks, California Register, California Historical Landmarks, and California Points of Historical Interest.

Krumenacher Ranch

Site CA-SAC-483/H, the Krumenacher Ranch, is an historic-era homestead consisting of nine standing structures, numerous pieces of farm equipment and debris. The Krumenacher family built a house and other structures (e.g., barn and tank house) on the site between 1913 and 1914. Other structures on the

ranch appear to date from the early to mid-1900s. It appears that the Webers and Krumenachers operated a small-scale farm on the site from the 1860s through the 1930s. The Krumenachers also appear to have run a small-scale dairy operation at the site from 1913-1985. The buildings and structures that comprise the Krumenacher Ranch are vernacular buildings/structures that are currently in disrepair and lack integrity of design, setting, material, workmanship, feeling, and association. , the setting, feeling, and association of the ranch are compromised by the residential and commercial developments that surrounding the site.

The structures on the historic-era site were evaluated as not eligible for the NRHP in 2005, in 2006 as ineligible for both the NRHP and the CRHR, and again in 2007 as ineligible for both the NRHP and the CRHR (the CRHR and NRHP are described in more detail below in Section 5.4.2, "Regulatory Setting"). These evaluations concluded that the site was ineligible for listing because of lack of significance and integrity. In 2008, the Office of Historic Preservation concurred that the Krumenacher Ranch was ineligible for listing on the NRHP.

The Krumenacher Ranch was also evaluated as not eligible for listing in the NRHP as a historic vernacular landscape by PMC in 2007 (cultural and historic landscapes are described in more detail below in Section 5.4.2, "Regulatory Setting"). Site CA-SAC-483/H is located within RD 1000, but the ranch site does not encompass any character defining features of the district. In addition, there are no extant features of the landscape on the ranch that are representative of agricultural activity. The area has been abandoned since the 1980s when operations ceased at the Krumenacher Ranch and does not reflect historic or modern agricultural use (i.e., there are no agricultural features on the landscape surrounding the ranch). The Krumenacher Ranch is also bracketed by modern residential and commercial developments that compromise its integrity of setting, feeling, and association. Therefore, the Krumenacher Ranch, does not appear to meet any of the eligibility criteria for inclusion in the NRHP or the CRHR as a historic landscape.

Reclamation District 1000

RD 1000 is one of the earliest reclamation districts in the Sacramento Valley, and encompasses approximately 55,000 acres of land. Reclamation districts were constructed in the Sacramento area following enabling legislation in 1911-1913 to protect the area from flooding. The landscape features of the NRHP-eligible RD 1000 reflect the early efforts at reclamation and flood control in the Sacramento area. The primary features of the historic landscape of RD 1000 are the systems of levees, canals, and roads that were built to control flooding and form large blocks of fields that could be used for agricultural production. These features are still easily identifiable across most of the 55,000 acre RD 1000. The historic landscape (i.e., levees, roads, and fields) associated with the reclamation district was previously determined eligible for inclusion in the NRHP (cf., Dames and Moore 1996).

A Historic American Engineering Record (HAER) was also completed for the RD 1000 historic landscape within the Panhandle PUD (cf., Peak 1997). The HAER document (HAER No. CA-187) for RD 1000 was completed as mitigation for loss of the historic landscape. HAER No. CA-187 describes and documents the features of the historic landscape within the Panhandle PUD using both a narrative and photographs.

The Panhandle PUD is located at the southern end of the 55,000-acre RD 1000 historic landscape, which has been and continues to be affected/impacted by maintenance of levees and roads and construction of residential developments and commercial centers (i.e., the project area is bordered by residential and commercial developments). Residential and commercial development at the southern end of RD 1000 does not contribute to its eligibility for inclusion in the NRHP (cf., Dames and Moore 1996).

Tribal Cultural Resources

Native American Consultation

The Native American Heritage Commission (NAHC) was contacted to request a search of its sacred lands file for the project site. In its response, dated March 24, 2017, the NAHC stated that its search of the sacred

lands file identified a sacred site associated with the United Auburn Indian Community of the Auburn Rancheria (UAIC).

As described below under “Regulatory Setting,” AB 52 applies to those projects for which a lead agency had issued a NOP of an EIR or notice of intent to adopt a negative declaration or mitigated negative declaration on or after July 1, 2015. Letters from the City to Gene Whitehouse, Chairperson; Marcos Guerrero, Cultural Resources Manager; and Jason Camp, Tribal Historic Preservation Officer for UAIC and Antonio Ruiz, Cultural Resources Officer for Wilton Rancheria were sent on February 19, 2016. UAIC responded on April 27, 2016 which is after the close of the 30-day response period, pursuant to PRC 21080.3.1(d). Wilton Rancheria responded on March 14, 2016. Both tribes requested copies of existing cultural reports in addition to initiating formal consultation. Cultural reports and the results of updated (2017) cultural record searches were sent to both tribes in April 2017 and consultation is ongoing.

5.4.2 Regulatory Setting

FEDERAL

Section 106 of the National Historic Preservation Act

Federal protection of resources is legislated by (a) the NHPA of 1966 as amended by 16 U.S. Code 470, (b) the Archaeological Resource Protection Act of 1979, and (c) the Advisory Council on Historical Preservation. These laws and organizations maintain processes for determination of the effects on historical properties eligible for listing in the NRHP.

Section 106 of the NHPA and accompanying regulations (36 Code of Federal Regulations [CFR] Part 800) constitute the main federal regulatory framework guiding cultural resources investigations and require consideration of effects on properties that are listed in, or may be eligible for listing in the NRHP. The NRHP is the nation’s master inventory of known historic resources. It is administered by the National Park Service and includes listings of buildings, structures, sites, objects, and districts that possess historic, architectural, engineering, archaeological, and cultural districts that are considered significant at the national, state, or local level.

The formal criteria (36 CFR 60.4) for determining NRHP eligibility are as follows:

1. The property is at least 50 years old (however, properties under 50 years of age that are of exceptional importance or are contributors to a district can also be included in the NRHP);
2. It retains integrity of location, design, setting, materials, workmanship, feeling, and associations; and
3. It possesses at least one of the following characteristics:
 - a. Association with events that have made a significant contribution to the broad patterns of history (events).
 - b. Association with the lives of persons significant in the past (persons).
 - c. Distinctive characteristics of a type, period, or method of construction, or represents the work of a master, or possesses high artistic values, or represents a significant, distinguishable entity whose components may lack individual distinction (architecture).
 - d. Has yielded, or may be likely to yield, information important to prehistory or history (information potential).

Listing in the NRHP does not entail specific protection or assistance for a property but it does guarantee recognition in planning for federal or federally-assisted projects, eligibility for federal tax benefits, and

qualification for federal historic preservation assistance. Additionally, project effects on properties listed in the NRHP must be evaluated under CEQA.

The National Register Bulletin also provides guidance in the evaluation of archaeological site significance. If a heritage property cannot be placed within a particular theme or time period, and thereby lacks “focus,” it is considered not eligible for the NRHP. In further expanding upon the generalized National Register criteria, evaluation standards for linear features (such as roads, trails, fence lines, railroads, ditches, flumes, etc.) are considered in terms of four related criteria that account for specific elements that define engineering and construction methods of linear features: (1) size and length; (2) presence of distinctive engineering features and associated properties; (3) structural integrity; and (4) setting. The highest probability for National Register eligibility exists within the intact, longer segments, where multiple criteria coincide.

Cultural and Historic Landscapes

Under the NRHP, historic properties may be defined as sites, buildings, structures (such as bridges or dams), objects, or districts, including cultural or historic landscapes. A cultural landscape differs from a historic building or district in that it is understood through the spatial organization of the property, which is created by the landscape’s cultural and natural features. Some features may create viewsheds or barriers (such as a fence), and others create spaces or “rooms” (such as an arrangement of buildings and structures around a lawn area). Some features, such as grading and topography, underscore the site’s development in relationship to the natural setting. To be listed in the NRHP, a cultural landscape must meet one of the four evaluation criteria and must retain its integrity.

Historic landscapes include residential gardens and community parks, scenic highways, rural communities, institutional grounds, cemeteries, battlefields and zoological gardens. They are composed of a number of character-defining features which, individually or collectively contribute to the landscape's physical appearance as they have evolved over time. In addition to vegetation and topography, cultural landscapes may include water features, such as ponds, streams, and fountains; circulation features, such as roads, paths, steps, and walls; buildings; and furnishings, including fences, benches, lights and sculptural objects.

A cultural landscape is defined as "a geographic area, including both cultural and natural resources and the wildlife or domestic animals therein, associated with a historic event, activity, or person or exhibiting other cultural or aesthetic values." There are four general types of cultural landscapes, not mutually exclusive: historic sites, historic designed landscapes, historic vernacular landscapes, and ethnographic landscapes.

Historic Designed Landscape—a landscape that was consciously designed or laid out by a landscape architect, master gardener, architect, or horticulturist according to design principles, or an amateur gardener working in a recognized style or tradition. The landscape may be associated with a significant person(s), trend, or event in landscape architecture; or illustrate an important development in the theory and practice of landscape architecture. Aesthetic values play a significant role in designed landscapes. Examples include parks, campuses, and estates.

Historic Vernacular Landscape—a landscape that evolved through use by the people whose activities or occupancy shaped that landscape. Through social or cultural attitudes of an individual, family or a community, the landscape reflects the physical, biological, and cultural character of those everyday lives. Function plays a significant role in vernacular landscapes. They can be a single property such as a farm or a collection of properties such as a district of historic farms along a river valley. Examples include rural villages, industrial complexes, and agricultural landscapes.

Historic Site—a landscape significant for its association with a historic event, activity, or person. Examples include battlefields and president's house properties.

Ethnographic Landscape—a landscape containing a variety of natural and cultural resources that associated people define as heritage resources. Examples are contemporary settlements, religious sacred sites and massive geological structures. Small plant communities, animals, subsistence and ceremonial grounds are often components.

STATE

California Environmental Quality Act

CEQA requires public agencies to consider the effects of their actions on both “historical resources” and “unique archaeological resources.” Pursuant to Public Resources Code (PRC) Section 21084.1, a “project that may cause a substantial adverse change in the significance of an historical resource is a project that may have a significant effect on the environment.” Section 21083.2 requires agencies to determine whether projects would have effects on unique archaeological resources.

Historical Resources

“Historical resource” is a term with a defined statutory meaning (PRC, Section 21084.1; determining significant impacts to historical and archaeological resources is described in the State CEQA Guidelines, Sections 15064.5[a] and [b]). Under State CEQA Guidelines Section 15064.5(a), historical resources include the following:

- 1) A resource listed in, or determined to be eligible by the State Historical Resources Commission, for listing in the California Register of Historical Resources (PRC, Section 5024.1).
- 2) A resource included in a local register of historical resources, as defined in Section 5020.1(k) of the Public Resources Code or identified as significant in a historical resource survey meeting the requirements of Section 5024.1(g) of the Public Resources Code, will be presumed to be historically or culturally significant. Public agencies must treat any such resource as significant unless the preponderance of evidence demonstrates that it is not historically or culturally significant.
- 3) Any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California may be considered to be a historical resource, provided the lead agency’s determination is supported by substantial evidence in light of the whole record. Generally, a resource will be considered by the lead agency to be historically significant if the resource meets the criteria for listing in the California Register of Historical Resources (Public Resources Code, Section 5024.1), including the following:
 - a) Is associated with events that have made a significant contribution to the broad patterns of California’s history and cultural heritage;
 - b) Is associated with the lives of persons important in our past;
 - c) Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or
 - d) Has yielded, or may be likely to yield, information important in prehistory or history.
- 4) The fact that a resource is not listed in or determined to be eligible for listing in the California Register of Historical Resources, not included in a local register of historical resources (pursuant to Section 5020.1(k) of the Public Resources Code), or identified in a historical resources survey (meeting the criteria in Section 5024.1(g) of the Public Resources Code) does not preclude a lead agency from determining that the resource may be an historical resource as defined in PRC Section 5020.1(j) or 5024.1.

Unique Archaeological Resources

CEQA also requires lead agencies to consider whether projects will impact unique archaeological resources. Public Resources Code, Section 21083.2, subdivision (g), states that unique archaeological resource means an archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

1. Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information.
2. Has a special and particular quality such as being the oldest of its type or the best available example of its type.
3. Is directly associated with a scientifically recognized important prehistoric or historic event or person.

Tribal Cultural Resources

CEQA also requires lead agencies to consider whether projects will impact tribal cultural resources. Public Resources Code, Section 21074 states the following:

- a) “Tribal cultural resources” are either of the following:
 - 1) Sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are either of the following:
 - A) Included or determined to be eligible for inclusion in the California Register of Historical Resources.
 - B) Included in a local register of historical resources as defined in subdivision (k) of Section 5020.1.
 - 2) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Section 5024.1. In applying the criteria set forth in subdivision (c) of Section 5024.1 for the purposes of this paragraph, the lead agency shall consider the significance of the resource to a California Native American tribe.
- b) A cultural landscape that meets the criteria of subdivision (a) is a tribal cultural resource to the extent that the landscape is geographically defined in terms of the size and scope of the landscape.
- c) A historical resource described in Section 21084.1, a unique archaeological resource as defined in subdivision (g) of Section 21083.2, or a “nonunique archaeological resource” as defined in subdivision (h) of Section 21083.2 may also be a tribal cultural resource if it conforms with the criteria of subdivision (a).

California Register of Historical Resources

All properties in California that are listed in or formally determined eligible for listing in the NRHP are eligible for the CRHR. The CRHR is a listing of State of California resources that are significant within the context of California’s history. The CRHR is a statewide program of similar scope and with similar criteria for inclusion as those used for the NRHP. In addition, properties designated under municipal or county ordinances are also eligible for listing in the CRHR.

A historic resource must be significant at the local, state, or national level under one or more of the criteria defined in the California Code of Regulations Title 15, Chapter 11.5, Section 4850 to be included in the CRHR. The CRHR criteria are similar to the NRHP criteria and are tied to CEQA because any resource that meets the criteria below is considered a significant historical resource under CEQA. As noted above, all resources listed in or formally determined eligible for the NRHP are automatically listed in the CRHR.

The CRHR uses four evaluation criteria:

1. Is associated with events or patterns of events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the United States.
2. Is associated with the lives of persons important to local, California, or national history.

3. Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of a master, or possesses high artistic values.
4. Has yielded, or has the potential to yield, information important to the prehistory or history of the local area, California or the nation.

Similar to the NRHP, a resource must meet one of the above criteria and retain integrity. The CRHR uses the same seven aspects of integrity as the NRHP.

California Native American Historical, Cultural, and Sacred Sites Act

The California Native American Historical, Cultural, and Sacred Sites Act applies to both state and private lands. The Act requires that upon discovery of human remains, construction or excavation activity cease and the County coroner be notified. If the remains are of a Native American, the coroner must notify the Native American Heritage Commission (NAHC), which notifies and has the authority to designate the most likely descendant (MLD) of the deceased. The Act stipulates the procedures the descendants may follow for treating or disposing of the remains and associated grave goods.

Health and Safety Code, Sections 7052 and 7050.5

Section 7052 of the Health and Safety Code states that the disturbance of Native American cemeteries is a felony. Section 7050.5 requires that construction or excavation be stopped in the vicinity of discovered human remains until the coroner can determine whether the remains are those of a Native American. If determined to be Native American, the coroner must contact the NAHC.

Public Resources Code, Section 5097

Public Resources Code (PRC) Section 5097 specifies the procedures to be followed in the event of the unexpected discovery of human remains on nonfederal land. The disposition of Native American burial falls within the jurisdiction of the NAHC. Section 5097.5 of the Code states the following:

No person shall knowingly and willfully excavate upon, or remove, destroy, injure, or deface any historic or prehistoric ruins, burial grounds, archaeological or vertebrate paleontological site, including fossilized footprints, inscriptions made by human agency, or any other archaeological, paleontological or historical feature, situated on public lands, except with the express permission of the public agency having jurisdiction over such lands. Violation of this section is a misdemeanor.

Assembly Bill 52

Assembly Bill (AB) 52, signed by the California Governor in September of 2014, establishes a new class of resources under CEQA: "tribal cultural resources." It requires that lead agencies undertaking CEQA review must, upon written request of a California Native American tribe, begin consultation once the lead agency determines that the application for the project is complete, prior to the issuance of a NOP of an EIR or notice of intent to adopt a negative declaration or mitigated negative declaration. AB 52 also requires revision to CEQA Appendix G, the environmental checklist. This revision would create a new category for "tribal cultural resources."

LOCAL

City of Sacramento 2035 General Plan

The following policies are applicable to the project:

HCR 2.1.1 Identification. The City shall identify historic and cultural resources, including individual properties, districts, and sites (e.g., archaeological sites), to ensure adequate protection of these resources.

HCR 2.1.2 Applicable Laws and Regulations. The City shall ensure compliance with City, State, and Federal historic preservation laws, regulations, and codes to protect and assist in the preservation of historic and

archaeological resources, including the use of the California Historical Building Code as applicable. Unless listed in the Sacramento, California, or National registers, the City shall require discretionary projects involving resources 50 years and older to evaluate their eligibility for inclusion on the California or Sacramento registers for compliance with the California Environmental Quality Act.

HCR 2.1.3 Consultation. The City shall consult with appropriate organizations and individuals (e.g., California Historical Resources Information System (CHRIS) Information Centers, the Native American Heritage Commission (NAHC), the CA Office of Planning and Research (OPR) “Tribal Consultation Guidelines,” etc.,) and shall establish a public outreach policy to minimize potential impacts to historic and cultural resources.

HCR 2.1.5 National, California, and Sacramento Registers. The City shall support efforts to pursue eligibility and listing for qualified resources including historic districts and individual resources under the appropriate National, California, or Sacramento registers.

HCR 2.1.10 Early Project Consultation. The City shall minimize potential impacts to historic and cultural resources by consulting with property owners, land developers, and the building industry early in the development review process.

HCR 2.1.11 Compatibility with Historic Context. The City shall review proposed new development, alterations, and rehabilitation/remodels for compatibility with the surrounding historic context. The City shall pay special attention to the scale, massing, and relationship of proposed new development to surrounding historic resources.

HCR 2.1.15 Demolition. The City shall consider demolition of historic resources as a last resort, to be permitted only if rehabilitation of the resource is not feasible, demolition is necessary to protect the health, safety, and welfare of its residents, or the public benefits outweigh the loss of the historic resource.

HCR 2.1.16 Archaeological & Cultural Resources. The City shall develop or ensure compliance with protocols that protect or mitigate impacts to archaeological and cultural resources including prehistoric resources.

HCR 2.1.17 Preservation Project Review. The City shall review and evaluate proposed development projects to minimize impacts on identified historic and cultural resources, including projects on Landmark parcels and parcels within Historic Districts, based on applicable adopted criteria and standards.

Sacramento Planning and Development Code Chapter 17.604 (Historic Preservation)

Chapter 17.608 of the City’s Planning and Development Code includes provisions for the identification of significant historic, prehistoric, and cultural resources, structures, districts, sites, landscapes, and properties within the City. This chapter also includes mechanisms and procedures to protect and encourage the preservation of the city’s historic and cultural resources, as well as established the preservation commission and the responsibilities of the City’s Preservation Director.

The following are the criteria for listing a feature on the Sacramento Register of Historic and Cultural Resources under Section 17.604.210:

- A. Listing on the Sacramento register—Landmarks. A nominated resource shall be listed on the Sacramento register as a landmark if the city council finds, after holding the hearing required by this chapter, that all the requirements set forth below are satisfied:
 1. Requirements.
 - a. The nominated resource meets one or more of the following criteria:
 - i. It is associated with events that have made a significant contribution to the broad patterns of the history of the city, the region, the state or the nation;
 - ii. It is associated with the lives of persons significant in the city’s past;

- iii. It embodies the distinctive characteristics of a type, period or method of construction;
 - iv. It represents the work of an important creative individual or master;
 - v. It possesses high artistic values; or
 - vi. It has yielded, or may be likely to yield, information important in the prehistory or history of the city, the region, the state or the nation;
- b. The nominated resource has integrity of location, design, setting, materials, workmanship and association. Integrity shall be judged with reference to the particular criterion or criteria specified in subsection A.1.a of this section;
 - c. The nominated resource has significant historic or architectural worth, and its designation as a landmark is reasonable, appropriate and necessary to promote, protect and further the goals and purposes of this chapter.
2. Factors to be considered. In determining whether to list a nominated resource on the Sacramento register as a landmark, the factors below shall be considered.
- a. A structure removed from its original location is eligible if it is significant primarily for its architectural value or it is the most important surviving structure associated with a historic person or event.
 - b. A birthplace or grave is eligible if it is that of a historical figure of outstanding importance and there is no other appropriate site or structure directly associated with his or her productive life.
 - c. A reconstructed building is eligible if the reconstruction is historically accurate, if the structure is presented in a dignified manner as part of a restoration master plan, and if no other original structure survives that has the same association.
 - d. Properties that are primarily commemorative in intent are eligible if design, age, tradition, or symbolic value invests such properties with their own historical significance.
 - e. Properties achieving significance within the past 50 years are eligible if such properties are of exceptional importance.
- B. Listing on the Sacramento register—Historic districts. A geographic area nominated as a historic district shall be listed on the Sacramento register as a historic district if the city council finds, after holding the hearing required by this chapter, that all of the requirements set forth below are satisfied:
1. Requirements.
 - a. The area is a geographically definable area; or
 - b. The area possesses either:
 - i. A significant concentration or continuity of buildings unified by: (A) past events or (B) aesthetically by plan or physical development; or
 - ii. The area is associated with an event, person, or period significant or important to city history; or

- c. The designation of the geographic area as a historic district is reasonable, appropriate and necessary to protect, promote and further the goals and purposes of this chapter and is not inconsistent with other goals and policies of the city.
2. Factors to be considered. In determining whether to list a geographic area on the Sacramento register as a historic district, the following factors shall be considered:
 - a. A historic district should have integrity of design, setting, materials, workmanship and association;
 - b. The collective historic value of the buildings and structures in a historic district taken together may be greater than the historic value of each individual building or structure.
- C. Listing on the Sacramento register—Contributing resources. A nominated resource shall be listed on the Sacramento register as a contributing resource if the council finds, after holding the hearing required by this chapter, that all of the following requirements are satisfied:
1. The nominated resource is within a historic district;
 2. The nominated resource either embodies the significant features and characteristics of the historic district or adds to the historical associations, historical architectural qualities or archaeological values identified for the historic district;
 3. The nominated resource was present during the period of historical significance of the historic district and relates to the documented historical significance of the historic district;
 4. The nominated resource either possesses historic integrity or is capable of yielding important information about the period of historical significance of the historic district; and
 5. The nominated resource has important historic or architectural worth, and its designation as a contributing resource is reasonable, appropriate and necessary to protect, promote and further the goals and purposes of this chapter.

5.4.3 Impacts and Mitigation Measures

SIGNIFICANCE CRITERIA

Based on Appendix G of the State CEQA Guidelines, the project would result in a significant impact on cultural resources if it would:

- ▲ cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5 of the State CEQA Guidelines;
- ▲ cause a substantial adverse change in the significance of an archaeological resource as defined in Section 15064.5 of the State CEQA Guidelines;
- ▲ cause a substantial adverse change in the significance of a tribal cultural resource, defined in PRC Section 21074 as either a site, feature, place, cultural landscape that is geographically; or
- ▲ disturb any human remains, including those interred outside of dedicated cemeteries.

METHODS AND ASSUMPTIONS

The impact analysis for historic architectural resources and historic landscapes is based on the findings and recommendations of the *Cultural Resources Letter Report for the Panhandle EIR Update Project* (MBI 2017) and the *Draft Report: Archeological Inventory Report – Natomas Locality, Cultural Resources Inventory and Evaluation for the American River Watershed Investigation, El Dorado, Placer, Sacramento, and Sutter Counties, California* (Dames and Moore 1994). The impact analysis for prehistoric- and historic-era archaeological resources is based on the findings and recommendations of the *Archaeological and Historic Investigations for the North Natomas High/Middle School Project* (PMC 2004); the *Determination of Eligibility and Effect for the Brothers Parcel, Natomas Panhandle Annexation Area* (Peak & Associates, Inc. 2006a); the *Determination of Eligibility and Effect for the Natomas Panhandle Annexation Project Area* (Peak & Associates, Inc. 2006b); the *Archaeological and Historical Resources Investigations for the Panhandle Planned Unit Development Project in Sacramento County* (PMC 2007), and updated 2017 record searches at NCIC.

The analysis is also informed by the provisions and requirements of federal, state, and local laws and regulations that apply to cultural resources. In determining the level of significance, the analysis assumes that the project would comply with relevant, federal, state, and local laws, regulations, and ordinances.

This impact analysis is consistent with the City General Plan policies HCR 2.1.5, HCR 2.1.15, HCR 2.1.16, and HCR 2.1.17 regarding the evaluation of potential impacts and mitigation measures for archaeological, historic, and cultural resources.

ISSUES DISMISSED FROM FURTHER CONSIDERATION

All potential archaeological, historical, and tribal cultural resources issues identified in the significance criteria are evaluated below.

PROJECT IMPACTS AND MITIGATION MEASURES

Impact 5.4-1: Change in the significance of a historic resource (structures)

Records search results and pedestrian surveys have identified one historic-era site, the Krumenacher Ranch. This site has been evaluated for the NRHP and CRHR multiple times since 2005 and has been determined to be not eligible for listing. Thus, the project would have a **less than significant** impact.

The project would result in a mixed-use development consisting of residential, commercial, elementary school, roadways, and park uses north of Del Paso Road. The remaining 119 acres between the proposed PUD project area and extending north to West Elkhorn Boulevard¹ (the Krumenacher Ranch site) would be designated as Planned Development (PD) and zoned Agriculture (A). No land use entitlements are being sought for this area as part of the project.

Records search results and pedestrian surveys identified one historic-era site, the Krumenacher Ranch, on the project site. The Krumenacher Ranch consists of nine standing structures; the family home, barn and tank house were constructed between 1913 and 1914. Other structures on the ranch appear to date from the early to mid-1900s. The buildings and structures that comprise the Krumenacher Ranch are vernacular in style and lack integrity of design, setting, material, workmanship, feeling, and association. In particular, the setting, feeling, and association of the ranch are compromised by the residential and commercial developments surrounding the site.

¹ West Elkhorn Boulevard is also referred to as “Elkhorn Boulevard” in some instances in the Draft EIR.

The historic-era site was evaluated as not eligible for the NRHP in 2005, in 2006 as ineligible for both the NRHP and the CRHR, and again in 2007 as ineligible for both the NRHP and the CRHR. These evaluations concluded that the site was ineligible for listing because of lack of significance and integrity. In 2008, the Office of Historic Preservation concurred that the Krumenacher Ranch was ineligible for listing on the NRHP. However, the historic-era site has not been evaluated for the Sacramento Register of Historic and Cultural Resources (Sacramento Register) under Chapter 17.604 of the City's Planning and Development Code. The Sacramento Register records, adopted landmarks; adopted historic districts, special planning districts, survey areas, and individual resources; and pending Sacramento register nominations. Access to the Krumenacher Ranch site was not allowed at the time of the preparation of this EIR to fully evaluate whether the site would be eligible as a historic resource for inclusion in the Sacramento Register. The evaluation of this site for eligibility for the Sacramento Register will be conducted at the time a development application is received for this portion of the project area. The Panhandle PUD does not propose development of the Krumenacher Ranch site and would not establish a land use designation or zoning that would allow for the development of the site that could remove the ranch site. Thus, this impact is **less than significant**.

Mitigation Measures

No mitigation is required.

Impact 5.4-2: Change the significance of a historic resource (historic landscape).

The project is located at the southern end of the RD1000 historic landscape; however, this portion of the historic landscape does not contribute to its eligibility for inclusion in the NRHP. The Krumenacher Ranch was evaluated as not eligible for listing in the NRHP as a historic vernacular landscape. No other historic landscapes are present in the project area. Therefore, the project would have a **less-than-significant** impact on historic landscapes.

RD1000 is one of the earliest reclamation districts in the Sacramento Valley, and encompasses approximately 55,000 acres. RD1000 was determined eligible for the NRHP under Criterion A (association with events that have made a significant contribution to the broad patterns of history) as a rural historic landscape district in 1994. It was considered significant at a state level for the period from 1911 to 1939 as part of a regional reclamation plan that resulted in the social, economic, and physical transformation from the original flood plain to a distinctly different open rural landscape consisting of levees, canals, and roads intersecting to form large open blocks of fields (Peak 2006b).

The project is located at the southern end of the NRHP-eligible RD1000 historic landscape, which has been and continues to be affected/impacted by maintenance of levees and roads and construction of residential developments and commercial centers (i.e., the project area is bordered by residential and commercial developments). Residential and commercial development at the southern end of RD1000 only comprises a small part, approximately 20%-25%, of the historic landscape, and this part of the historic landscape does not contribute to its eligibility for inclusion in the NRHP (Dames and Moore 1996). In addition, a HAER was completed for the RD1000 historic landscape to mitigate for any loss of the historic landscape associated with potential development of the area, including the area encompassed by the project. The HAER document describes and documents the features of the historic landscape within and adjacent to the project using both a narrative and photographs. Therefore, continued development of this area, including development under the Panhandle PUD, would not cause a significant impact to the historic landscape associated with RD1000 or affect any of its contributing elements or other characteristics that make it eligible for inclusion in the NRHP.

In addition, the Krumenacher Ranch was evaluated as not eligible for listing in the NRHP as a historic vernacular landscape. The site does not encompass any character defining features of the RD1000 historic landscape. There are no extant features of the landscape on the Krumenacher Ranch that are representative of agricultural activity. The Krumenacher Ranch is also bracketed by modern residential and commercial developments that compromise its integrity of setting, feeling, and association. The Krumenacher Ranch does not appear to meet any of the eligibility criteria for inclusion in the NRHP or the CRHR as a historic landscape.

No other historic landscapes are located in the project area. Therefore, project would have a **less-than-significant** impact on historic landscapes.

Mitigation Measures

No mitigation is required.

Impact 5.4-3: Change in the significance of an archaeological resource

Based on the results of the archaeological records search and various pedestrian surveys conducted for the project site, there are no known archaeological sites. However, ground-disturbing activities could result in discovery or damage of as yet undiscovered archaeological resources as defined in CEQA Guidelines Section 15064.5. This would be a **potentially significant** impact.

Portions of the project area has been surveyed over time, resulting in complete coverage of the Panhandle Annexation and PUD area. The 2005 survey covered the majority of the project area, although two non-participating owners' parcels and the Krumenacher parcel were not included. In select locations, small holes were dug to examine the sediments for archaeological materials. Based on the results of this inspection, no prehistoric or historic-era archaeological resources were found within the southern portion of the project area. The records search of the NCIC completed for the 2005 survey revealed that one historic site (the Krumenacher Ranch) also had an archaeological component. A follow-up survey in September 2006 of the Krumenacher parcel revealed that the archaeological component of the site, a collection of ground stone artifacts, had apparently been collected or otherwise removed. There was no evidence of any prehistoric artifacts or any indication that the area ever supported prehistoric occupation or use.

Later surveys of the non-participating owners' parcels as detailed in the *Archaeological and Historic Investigations for the North Natomas High/Middle School Project* (PMC 2004) (site of the partially constructed East Natomas Education Complex) and the *Determination of Eligibility and Effect for the Brothers Parcel, Natomas Panhandle Annexation Area* (Peak & Associates, Inc. 2006a) also did not reveal any archaeological sites or materials. The report prepared by PMC in 2007 also did not identify any archaeological sites. An NCIC records search was again conducted in 2017 by Ascent that found no newly identified archaeological resources in the project area.

Nonetheless, approval of the project would result in the development of the private, mixed-use development, and park uses north of Del Paso Road; project-related preconstruction or construction-related ground disturbing activities could damage or destroy previously undiscovered archaeological resources. This would be a **potentially significant** impact.

Mitigation Measure 5.4-3a. Develop and implement a Worker Environmental Awareness Program

Prior to improvement plan approval, the project developer shall design and implement a Worker Environmental Awareness Program (WEAP) that shall be provided to all construction personnel and supervisors who will have the potential to encounter and alter heritage and cultural resources. The WEAP shall be submitted to the City and shall describe, at a minimum:

- ▲ types of cultural resources expected in the project area;
- ▲ types of evidence that indicate cultural resources might be present (e.g., ceramic shards, trash scatters, lithic scatters);
- ▲ what to do if a worker encounters a possible resource;
- ▲ what to do if a worker encounters bones or possible bones; and
- ▲ penalties for removing or intentionally disturbing heritage and cultural resources, such as those identified in the Archeological Resources Protection Act.

Mitigation Measure 5.4-3b: Stop work in the event of an archaeological discovery

In the event that evidence of any prehistoric or historic-era subsurface archaeological features or deposits are discovered during construction-related earth-moving activities (e.g., ceramic shard, trash scatters, lithic scatters), all ground-disturbing activity in the area of the discovery shall be halted until a qualified archaeologist can assess the significance of the find. The City and the Department of Museums shall be notified of the potential find and a qualified archeologist shall be retained to investigate. If the find is an archeological site, the appropriate Native American group shall be notified. If the archaeologist determines that the find does not meet the CRHR standards of significance for cultural resources, construction may proceed. If the archaeologist determines that further information is needed to evaluate significance, the City shall be notified and a data recovery plan shall be prepared. If the find is determined to be significant by the qualified archaeologist (i.e., because the find is determined to constitute either an historical resource or a unique archaeological resource), the archaeologist shall work with the project developer to avoid disturbance to the resources, and if complete avoidance is not feasible in light of project design, economics, logistics, and other factors, follow accepted professional standards in recording any find including submittal of the standard DPR Primary Record forms (Form DPR 523) and location information to the appropriate California Historical Resources Information System office for the project area (the NCIC).

Significance after Mitigation

Implementation of Mitigation Measures 5.4-3a and 5.4-3b would reduce potentially significant impacts to known and currently undiscovered archaeological resources because actions would be taken to avoid, move, record, or otherwise treat the resource appropriately, in accordance with pertinent laws and regulations. By providing an opportunity to avoid disturbance, disruption, or destruction of archaeological resources, this impact would be reduced to a **less-than-significant** level.

Impact 5.4-4: Discovery of previously unknown resources or human remains

Although unlikely, construction and excavation activities associated with project development could unearth previously undiscovered or unrecorded human remains, if they are present. Compliance with California Health and Safety Code Sections 7050.5 and 7052 and California Public Resources Code Section 5097 in the event that human remains are found would make this impact **less than significant**.

Based on documentary research, no evidence suggests that any prehistoric or historic-era marked or unmarked human interments are present within the Panhandle Annexation and PUD area. The location of grave sites and Native American remains can occur outside of dedicated cemeteries or burial sites. Ground-disturbing construction activities could uncover previously unknown human remains, which could be archaeologically or culturally significant. The project would result in the development of the private, mixed-use development consisting of residential, commercial, elementary school, roadways, and park uses north of Del Paso Road. These activities would result in soil disturbance; therefore, the potential exists for previously undiscovered human remains to be discovered.

California law recognizes the need to protect Native American human burials, skeletal remains, and items associated with Native American burials from vandalism and inadvertent destruction. The procedures for the treatment of Native American human remains are contained in California Health and Safety Code Sections 7050.5 and 7052 and California Public Resources Code Section 5097.

If human remains are discovered during any construction activities, potentially damaging ground-disturbing activities in the area of the remains shall be halted immediately, and the project developer shall notify the Sacramento County coroner and the NAHC immediately, according to Section 5097.98 of the State Public Resources Code and Section 7050.5 of California's Health and Safety Code. If the remains are determined by the NAHC to be Native American, the guidelines of the NAHC shall be adhered to in the treatment and disposition of the remains. Following the coroner's findings, the archaeologist, and the NAHC-designated MLD shall determine the ultimate treatment and disposition of the remains and take appropriate steps to ensure that additional human interments are not disturbed. The responsibilities for

acting upon notification of a discovery of Native American human remains are identified in California Public Resources Code Section 5097.94.

Compliance with California Health and Safety Code Sections 7050.5 and 7052 and California Public Resources Code Section 5097 would provide an opportunity to avoid or minimize the disturbance of human remains, and to appropriately treat any remains that are discovered. Therefore, this impact would be **less than significant**.

Mitigation Measure

No mitigation is required.

Impact 5.4-5: Change in the significance of a tribal cultural resource

Consultation with UAIC and Wilton Rancheria has resulted in no resources identified as TCRs as described under AB 52. Because no resources meet the criteria for a TCR under PRC Section 21074, there would be **no impact** to tribal cultural resources.

As part of the 2013/2014 legislative session, AB 52 established a new class of resources under CEQA, TCRs, and requires that lead agencies undertaking CEQA review must, upon written request of a California Native American Tribe, begin consultation once the lead agency determines that the application for the project is complete. As detailed above, the City sent letters to UAIC and Wilton Rancheria on February 19, 2016, in compliance with AB 52 as well as General Plan Policy HCR 2.1.3 that calls for City consultation with appropriate organizations and individuals on historic and cultural resources. Both tribes requested consultation, but did not identify any tribal cultural resources in the project area. Consultation is expected to be completed in June 2017 with a meeting between the City and UAIC.

As identified under Impact 5.4-3, no archaeological resources currently exist on the site. While the NAHC records identified the potential for sacred sites to occur on the project area, this record appears to be related to groundstone tools that were initially discovered in 1955 and were removed from the project area.

To be considered a TCR, a resource must be either:

1. listed or determined to be eligible for listing, on the national, state, or local register of historic resources, or
2. a resource that the lead agency determines, in its discretion and supported by substantial evidence, to treat as a tribal cultural resource pursuant to the criteria in PRC Section 50241(c). PRC Section 5024.1(c) provides that a resource is meets criteria for listing as an historic resource in the California Register if in meets any of the following:
 - (1) Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.
 - (2) Is associated with the lives of persons important in our past.
 - (3) Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values.
 - (4) Has yielded, or may be likely to yield, information important in prehistory or history.

The project area is in Valley Nisenan territory, while also is near the borders of Plains Miwok territory; however, it is not known to have any special use. No unique archaeological remains have been identified in the project area. For these reasons, no part of the project site meets any of the PRC 5024.1(c) criteria listed above. Therefore, the project would have **no impact** to TRCs as defined in PRC Section 21074.

Mitigation Measure

No mitigation is required.

5.4.4 Cumulative Setting, Impacts, and Mitigation Measures

CUMULATIVE SETTING

The cumulative setting consists of the North Natomas Community Plan area and the Sacramento Valley. As described in Section 5.4.1, “Environmental Setting,” the Central Valley is known to contain significant prehistoric, historic, and tribal cultural resources. The cumulative impact analysis takes into account planned and proposed development identified in Table 5-2.

CUMULATIVE IMPACTS AND MITIGATION MEASURES

Because the project would result in no impacts on TCRs, the cumulative analysis focuses only on potential cumulative impacts on historic resources (structures and landscapes), archaeological resources, and human remains.

Impact 4.5-6: Contribution to cumulative impacts on historic resources (structures).

The project would not result in the loss of the historic resources, and would not contribute to the cumulative loss of historic agricultural structures in the Sacramento Valley. The cumulative impact associated with the loss of historic structures in the Sacramento Valley would be significant and the project’s contribution would be **less than cumulatively considerable**.

The cumulative context for historic structures is the Sacramento Valley. Small-scale farms, primarily producing crops that also may have included a few dairy cows for the production of raw milk are typical of farm/ranch complexes within RD1000 and across the Sacramento Valley during at least the first half of the 20th century. Dairy operations continued on the ranch until 1985, but it is probable that crop production and dairying were of equal importance at the Krumenacher Ranch from the 1910s through the 1980s. This mix of agricultural activities is typical of small-scale agricultural operations in the area and across the Sacramento Valley. Development in the Sacramento region and in Sacramento Valley is result in the cumulative loss of these resources. This cumulative impact is considered significant.

The historic-era Krumenacher Ranch was evaluated as not eligible for the NRHP in 2005, in 2006 as ineligible for both the NRHP and the CRHR, and again in 2007 as ineligible for both the NRHP and the CRHR. However, the historic-era site has not been evaluated for the Sacramento Register of Historic and Cultural Resources. Future development of the site could include the demolition of the structures on the Krumenacher Ranch site. Because the historic-era site could be determined eligible for inclusion in the Sacramento Register, future development could damage to or destroy site that is a designated historic resource. Access to the Krumenacher Ranch site was not allowed at the time of the preparation of this EIR to fully evaluate whether the site would be eligible historic resource for inclusion in the Sacramento Register. The evaluation of this site for eligibility for the Sacramento Register will conducted at the time a development application is received for this portion of the project area. The Panhandle PUD does not propose development of the Krumenacher Ranch site and would not establish a land use designation or zoning that would allow for the development of the site that could remove the ranch site. The project would not result in the loss of any historic resources or contribute to cumulative historic resource impacts. For these reasons, this is a less-than-significant cumulative impact and the project’s cumulative contribution **would not be considerable** such that a new significant cumulative impact would occur.

Mitigation Measures

No mitigation is required.

Impact 4.5-7: Contribution to cumulative impacts on historic resources (landscapes).

Continued development of the Sacramento Valley, including development under the project, would not cause a significant impact to the historic landscape associated with RD1000 or affect any of its contributing elements or other characteristics that make it eligible for inclusion in the NRHP. This is a less-than-significant cumulative impact and the project's cumulative contribution **would not be considerable** such that a new significant cumulative impact would occur.

The cumulative context for historic landscapes is the Sacramento Valley. Reclamation districts were constructed in the Sacramento area following enabling legislation in 1911-1913 to protect the area from flooding. RD1000 is one of the earliest reclamation districts in the Sacramento Valley, and encompasses approximately 55,000 acres of land. The project is located at the southern end of the NRHP-eligible RD1000 historic landscape; this part of the historic landscape does not contribute to its eligibility for inclusion in the NRHP or the CRHR. The southern end of the RD1000 historic landscape has been and continues to be affected by maintenance of levees and roads and construction of residential developments and commercial centers (i.e., the project area is bordered by residential and commercial developments). Continued development of this area, including development under the project and other projects such as the Natomas North Precinct Master Plan, would not cause a significant impact to the historic landscape associated with RD1000 or affect any of its contributing elements or other characteristics that make it eligible for inclusion in the NRHP. The Krumenacher Ranch site was evaluated as not eligible for listing in the NRHP as a historic vernacular landscape because the site does not encompass any character defining features of the RD1000 historic landscape. For these reasons, this is a less-than-significant cumulative impact and the project's cumulative contribution **would not be considerable** such that a new significant cumulative impact would occur.

Mitigation Measures

No mitigation is required.

Impact 4.5-8: Contribution to cumulative impacts on archaeological resources

Cumulative development could result in potentially significant archaeological resource impacts. However, with implementation of the mitigation measures proposed, the project's contribution to these impacts would be reduced to a less-than-significant level. Therefore, the project's contribution to cumulative archaeological resource impacts **would not be cumulatively considerable**.

The cumulative context for archaeological resources is the Valley Nisenan and Plains Miwok territory. Valley Nisenan primarily inhabited the area along the Sacramento River and Plains Miwok inhabited the lower reaches of the Mokelumne and Cosumnes Rivers and the banks of the Sacramento River from Rio Vista to Freepoint.

The project, in combination with other development in the region, could cause a substantial adverse change in the significance of a unique archaeological resource. Because all significant cultural resources are unique and nonrenewable members of finite classes, meaning there are a limited number of significant cultural resources, all adverse effects erode a dwindling resource base. The loss of any one archaeological site could affect the scientific value of others in a region because these resources are best understood in the context of the entirety of the cultural system of which they are a part. The cultural system is represented archaeologically by the total inventory of all sites and other cultural remains in the region. As a result, a meaningful approach to preserving and managing cultural resources must focus on the likely distribution of cultural resources, rather than on a single project or parcel boundary.

No known archaeological resources are located within the boundaries of the project site; nonetheless, project-related earth-disturbing activities could potentially damage undiscovered archaeological resources. Implementation of Mitigation Measures 4.5-3a and 4.5-3b would ensure that the project's contribution would not be cumulatively considerable by requiring the implementation of a WEAP and requiring construction work to cease in the event of an accidental find and requiring evaluation/treatment of the

potential resource. Cumulative development could result in potentially significant archaeological resource impacts. However, with implementation of the mitigation measures proposed, the project's contribution to these impacts would be offset. Therefore, the project's contribution to cumulative archaeological resource impacts **would not be cumulatively considerable**.

Mitigation Measures

No mitigation is required.

Impact 4.5-9: Contribution to cumulative impacts on human remains.

The project, in combination with other development in the Valley Nisenan and Plains Miwok territory could contribute to the disturbance of human remains because of project-related construction activities. This would be a significant cumulative impact. However, compliance with California Health and Safety Code Sections 7050.5 and 7052 and California Public Resources Code Section 5097 would ensure the project's contribution **would not be cumulatively considerable**.

Because of the likelihood that any undiscovered or unknown human remains would be Native American in origin, the cumulative context for human remains is Valley Nisenan and Plains Miwok territory. The loss of any one archaeological site or human remains could affect the scientific value of others in a region because these resources are best understood in the context of the entirety of the cultural system of which they are a part. The project, in combination with other development in the Valley Nisenan and Plains Miwok territory could contribute to the disturbance of human remains because of project-related construction activities. This would be a significant cumulative impact. However, compliance with California Health and Safety Code Sections 7050.5 and 7052 and California Public Resources Code Section 5097 would provide an opportunity to avoid or minimize the disturbance of human remains, and to appropriately treat any remains that are discovered. Therefore, the project would not contribute to a cumulative loss of undiscovered or unknown human remains, and the project's contribution to the cumulative impact **would not be cumulatively considerable**.

Mitigation Measures

No mitigation is required.

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5.5 GEOLOGY, SOILS, MINERAL RESOURCES, AND PALEONTOLOGY

5.5.0 Introduction

This section describes the geology, soils, mineral resources, and paleontological characteristics of the project area and surrounding vicinity and analyzes issues such as potential exposure of people and future improvements to seismic hazards, unstable soil conditions, and erosion, and the potential for the project to affect mineral and paleontological resources. Information contained in geotechnical reports prepared for the project, which identified site-specific geologic related conditions and hazards, have been incorporated into the analysis below (Wallace Kuhl 2016a, 2016b, 2016c, 2016d, and 2016e).

No comments were received on the Notice of Preparation (see Appendix A) regarding geologic or paleontological resources or hazards.

5.5.1 Environmental Setting

GEOLOGY AND TOPOGRAPHY

The City of Sacramento (City) and surrounding Sacramento County (County) is located within the Great Valley geomorphic province of California. The geology of the Great Valley is typified by thick sequences of sedimentary deposits of Jurassic through Holocene age. The Sacramento River and its tributaries, which flow south and west toward San Francisco Bay, drain the Sacramento Valley. The project area is underlain primarily by Holocene basin and alluvial deposits with the lower unit of the Pleistocene Riverbank Formation present in the northern half. The basin deposits consist of unconsolidated clay formed in sink areas and clay mixed with silt and fine sand. The alluvial deposits are a mix of cobble, gravel, silt, sand, and clay. The Riverbank Formation consists of alluvial sand and silt derived from the Sierra Nevada and locally from small drainages along the foothills and deposited on terraces associated with the American River.

SOILS

The project area is generally flat, and averages approximately 20 feet above mean sea level in elevation. Soil units are Clear Lake clay, Cosumnes silt loam, Galt clay, Jacktone clay, Sailboat silt loam, San Joaquin fine sandy loam, and Valpac loam. Laboratory testing of on-site, surface clays and silts indicates medium to high expansion potential.

LAND SUBSIDENCE

Land subsidence is the lowering of the ground surface through compaction of compressible, fine-grained strata. It is most often caused by pumping and subsequent dewatering from unconsolidated, interbedded aquifer-aquitard systems, but can also be caused by other factors such as extraction of oil and gas. Compaction can be fully reversible (elastic) or permanent (inelastic). Elastic compaction and expansion generally occur in response to seasonal groundwater level fluctuations. Inelastic compaction is most likely to occur when groundwater levels reach historical lows, potentially resulting in prolonged dewatering of clay units. Although land subsidence is most likely to occur in the areas with the largest groundwater level declines, some areas are more susceptible to subsidence than others because of geologic conditions.

Groundwater levels fluctuate in the project area, and surrounding areas, according to season and climate. Department of Water Resources (DWR) has monitored water levels in monitoring well (09N04E01R001M) located three-fourths mile south of the project area from 1953 to at least 2015. Ground surface elevation at the well is approximately 22 feet mean sea level (msl) which is approximately two feet higher in elevation

compared to the project area's average elevation. Groundwater measurements at the DWR well have fluctuated from a "high" of about 14 feet msl in March of 1958 to a "low" of approximately 21 feet msl in October of 1992. Based on this data, groundwater elevations at the site have fluctuated from about six to 41 feet below average site grade (Wallace Kuhl 2016a).

SEISMIC HAZARDS

Faults

Seismically-induced ground rupture, the physical displacement of surface deposits in response to an earthquake's seismic waves, is considered most likely along faults that have a record of displacement sometime in the past 11,000 years (the Holocene Epoch). These faults are considered active. Faults on which an event is believed to have occurred during the Quaternary Period (approximately the last 1.6 million years) are considered potentially active. All other faults are considered inactive.

There are no known active faults or Alquist-Priolo earthquake hazard zones (formerly known as special study zones) in the greater Sacramento region. However, earthquakes have occurred on previously undetected faults. Known faults nearest the Sacramento General Plan Policy Area are the Foothills fault system (including the Bear Mountain fault zone) approximately 20 miles east, the Midland fault zone on the west side of the Sacramento Valley, and the Dunnigan Hills fault approximately 20 miles northwest. Other more distant faults in the region (25 to 50 miles away) include the Great Valley, Concord-Green Valley, Hunting Creek-Berryessa, and West Napa faults. Some of the nearby and distant faults are capable of producing moment magnitude (Mw) earthquakes of 6.5 or greater.

Groundshaking

Ground shaking is a general term referring to all aspects of motion of the earth's surface resulting from an earthquake, and is normally the major cause of damage in seismic events. The extent of ground shaking is controlled by the magnitude and intensity of the earthquake, distance from the epicenter, and local geologic conditions.

Although all of California is typically regarded as seismically active, the Sacramento region does not commonly experience strong groundshaking resulting from earthquakes along known or previously unknown active faults. The maximum earthquake intensity expected from groundshaking from nearby faults would be between VII and VIII on the Modified Mercalli Intensity scale. Typical effects of this intensity could include building damage (depending on construction) and falling walls. The overall groundshaking hazard for the project site is relatively low, ranking among the lowest in the state (Wallace Kuhl 2016a, 2016b, 2016c, 2016d, and 2016e).

Liquefaction

Liquefaction is the process in which water is combined with unconsolidated soils, generally from ground motions and pressure, which causes the soils to behave like quicksand. Liquefaction potential is determined from a variety of factors including soil type, soil density, depth to the groundwater table, and the duration and intensity of groundshaking. Liquefaction is most likely to occur in deposits of water saturated alluvium or areas of considerable artificial fill. Based on the soil characteristics, subsurface conditions, and groundwater levels near the project area, the potential for liquefaction is considered low and there is no recorded liquefaction occurring in the Sacramento area. In addition, the potential for ground lurching, differential settlement, or lateral spreading occurring during or after seismic events on the project area and in the immediate vicinity is low (Wallace Kuhl 2016a, 2016b, 2016c, 2016d, and 2016e).

Slope Failure

Slope failures, commonly referred to as landslides, include many phenomena that involve the downslope displacement and movement of material, triggered either by static (i.e., gravity) or dynamic (i.e., earthquake) forces. Exposed rock slopes undergo rockfalls, rockslides, or rock avalanches, while soil slopes experience soil slumps, rapid debris flows, and deep-seated rotational slides. Slope stability can depend on several

complex variables, including the geology, structure, and amount of groundwater, as well as external processes such as climate, topography, slope geometry, and human activity. The factors that contribute to slope movements include those that decrease the resistance in the slope materials and those that increase the stresses on the slope. Landslides can occur on slopes of 15 percent or less, but the probability is greater on steeper slopes that exhibit old landslide features such as scarps, slanted vegetation, and transverse ridges. The risk of landslides within and adjacent to the project area caused by seismic events or project activities is low because of gentle terrain conditions on the project area and surrounding area.

Other Geologic Hazards

Some common seismic hazards such as tsunamis and seiches, and seismic-induced landslides would not affect the planning area because of its location far from large bodies of water and the project area and surrounding area flat topography. The Sacramento area is not near any areas of volcanic activity, so there are no volcanic mudflow hazards.

MINERAL RESOURCES

The project area is mapped by the California Geological Survey as Mineral Resource Zone 1 (MRZ-1), indicating adequate information indicates that no significant mineral deposits are present or where it is judged that little likelihood exists for their presence. The 2035 General Plan does not identify the project location as a locally important mineral resource site.

PALEONTOLOGICAL RESOURCES

Paleontological resources include fossil remains, as well as fossil localities and formations, which have produced fossil material in other nearby areas. A search of the University of California Museum of Paleontology (UCMP) collections database did not identify any evidence of significant paleontological resources in the project area. While no fossils are known to have been recovered from the project area, there have been fossils recovered from the Riverbank Formation in Sacramento and other Central Valley counties. These finds have dated to the late Pleistocene period and include fish, frogs, snakes, turtles and plant species. Other fossil remains have included bison, horse, camel, mammoth, ground sloth and wolf. The Riverbank Formation underlies a portion of the project site, indicating moderate to high sensitivity for paleontological resources.

5.5.2 Regulatory Setting

FEDERAL

National Pollutant Discharge Elimination System Program

Under Section 402 of the Clean Water Act, the National Pollutant Discharge Elimination System (NPDES) controls water pollution by regulating point sources of pollution to waters of the United States. The California State Water Resources Control Board administers the NPDES permit program in California. Projects that disturb 1 or more acre of soil must obtain coverage under the state's NPDES General Permit for Discharges of Storm Water Associated with Construction Activity. A stormwater pollution prevention plan (SWPPP) must be developed and implemented that provides specific construction-related best management practices (BMPs) to prevent soil erosion and loss of topsoil. The required components and BMPs commonly included in a SWPPP are described in greater detail in Section 5.8, Hydrology and Water Quality.

STATE

Alquist-Priolo Earthquake Fault Zoning Act

The primary purpose of the Alquist-Priolo Earthquake Fault Zoning Act is to mitigate the hazard of fault rupture by prohibiting the location of structures for human occupancy across the trace of an active fault. The act requires the State Geologist to delineate “Earthquake Fault Zones” along faults that are “sufficiently active” and “well defined.” The act dictates that cities and counties withhold development permits for sites within an Earthquake Fault Zone until geologic investigations demonstrate that the sites are not threatened by surface displacements from future faulting. No portion of the planning area is within an Earthquake Fault Zone.

Seismic Hazards Mapping Act

Under the Seismic Hazards Mapping Act, the California Geological Survey (CGS) has identified and mapped seismic hazard zones to assist local governments in land use planning. The Sacramento region has not been subject to any seismic hazards mapping by CGS resulting in the delineation of seismic hazard zones for which special studies are required, and there are no maps that apply to the planning area.

California Building Code

The California Building Code (CBC), which is codified in Title 24 of the California Code of Regulations, Part 2, was promulgated to safeguard the public health, safety, and general welfare by establishing minimum standards related to structural strength, egress facilities, and general building stability. The purpose of the CBC is to regulate and control the design, construction, quality of materials, use/occupancy, location, and maintenance of all buildings and structures within its jurisdiction.

The 2013 CBC is based on the 2009 International Building Code and contains necessary California amendments that are based on the American Society of Civil Engineers Minimum Design Standards 7-05. The provisions of the CBC apply to the construction, alteration, movement, replacement, and demolition of every building or structure or any appurtenances connected or attached to such buildings or structures throughout California. The earthquake design requirements consider the occupancy category of the structure, site class, soil classifications, and various seismic coefficients, all of which are used to determine a Seismic Design Category for a project.

The updated CBC no longer cites the 1997 Uniform Building Code (UBC) Table 18-1-B for identifying expansive soils although the significance criteria in Appendix G of the State CEQA Guidelines still refers to this table. This analysis relies on the updated CBC section as provided below.

1803.5.3 Expansive Soil. In areas likely to have expansive soil, the building official shall require soil tests to determine where such soils do exist. Soils meeting all four of the following provisions shall be considered expansive, except that tests to show compliance with Items 1, 2 and 3 shall not be required if the test prescribed in Item 4 is conducted:

1. Plasticity index (PI) of 15 or greater, determined in accordance with American Society of Testing and Materials (ASTM) Standard D 4318
2. More than 10 percent of the soil particles pass a No. 200 sieve (75 micrometers), determined in accordance with ASTM D 422
3. More than 10 percent of the soil particles are less than 5 micrometers in size, determined in accordance with ASTM D 422
4. Expansion index greater than 20, determined in accordance with ASTM D 4829

The CBC also defines different building regions in the State and ranks them according to their seismic hazard potential. Seismic Zone 1 has the least seismic potential and Zone 4 has the highest seismic

potential. The City is in Seismic Zone 3; accordingly, any future development would be required to comply with all design standards applicable to Seismic Zone 3.

Paleontological Resources

Paleontological resources are classified as non-renewable scientific resources and are protected by state statute (Public Resources Code Chapter 1.7, Section 5097.5, Archeological, Paleontological, and Historical Sites and Appendix G). No state or local agencies have specific jurisdiction over paleontological resources. No state or local agency requires a paleontological collecting permit to allow for the recovery of fossil remains discovered as a result of construction-related earth moving on state or private land in a project site.

LOCAL

City of Sacramento General Plan

The City of Sacramento General Plan identifies specific policies regarding geology and soils.

- ▲ EC 1.1.1: Review Standards. The City shall regularly review and enforce all seismic and geologic safety standards and required the use of best management practices (BMPs) in site design and building construction methods.
- ▲ EC 1.1.2: Geotechnical Investigations. The City shall require geotechnical investigations to determine the potential for ground rupture, ground-shaking, and liquefaction due to seismic events, as well as expansive soils and subsidence problems on sites where these hazards are potentially present.

City of Sacramento Grading and Erosion Control Ordinance

The City's Grading, Erosion, and Sediment Control Ordinance (Chapter 15.88 of the Sacramento City Code) applies to projects where 50 cubic yards or more of soil is excavated and/or disposed. This ordinance requires preparation of a grading plan, erosion and sediment control (ESC) plan, and post-construction erosion and sediment control plan with BMPs, which must be approved by the City.

North Natomas Community Plan

The North Natomas Community Plan (NNCP) does not include any geology or soils policies.

5.5.3 Impacts and Mitigation Measures

SIGNIFICANCE CRITERIA

The impact analysis provided below is based on the following State CEQA Guidelines Appendix G thresholds of significance:

1. Expose people or structures to potential substantial adverse effects, including the risk of loss, injury or death, involving:
 - i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.
 - ii. Strong seismic ground shaking.
 - iii. Seismic-related ground failure, including liquefaction.
 - iv. Landslides.

2. Result in substantial soil erosion or the loss of topsoil.
3. Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse
4. Be located on expansive soil, as defined in Section 1803.5.3 of the 2013 California Building Code, creating substantial risks to life or property.
5. Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater.
6. Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state.
7. Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan.
8. Directly or indirectly destroy a unique paleontological resource or site or unique geological feature.

Soil erosion impacts are also discussed in Section 5.8, Hydrology and Water Quality, of this EIR.

METHODS AND ASSUMPTIONS

Preparation of this section is based on the review of the Panhandle PUD geotechnical reports, various geologic publications, and maps that are relevant to the project area and the surrounding region. A detailed list of sources for information utilized during preparation of this portion of the report is included in the reference section. Geologic impact analysis considers impacts of site development associated with residential, commercial, roadway construction and on-site infrastructure construction. The analysis includes consideration of the future development of the Krumenacher Ranch site.

ISSUES DISMISSED FROM FURTHER CONSIDERATION

There is no Alquist-Priolo Earthquake Fault Zone in or adjacent to the project area, indicating fault rupture would not affect the site. Thus, there would be no impact and this topic is not discussed further.

The project and surrounding area has gentle terrain conditions. There is no risk of landslide hazard in the project area. Implementation of the project would not expose people or structures to potential substantial adverse effects, including the risk of loss, injury or death, related to landslides. Thus, there would be no impact and this topic is not discussed further.

Based on the soil characteristics, subsurface conditions, and groundwater levels near the project area, the potential for liquefaction is considered low and there is no recorded liquefaction occurring in the Sacramento area. Thus, there would be no impact and this topic is not discussed further.

The project does not propose to use septic tanks or alternative wastewater disposal systems. Existing septic systems within the project area would be removed during construction as development occurs in the Panhandle PUD. New development within the Panhandle PUD would be connected to the regional wastewater collection and treatment system. Thus, there would be no impact and this topic is not discussed further.

The project area is mapped as MRZ-1 and is not within a locally important mineral resource recovery site delineated on a local plan. Thus, there would be no impact and this topic is not discussed further.

In 2009, the Natomas Central Mutual Water Company addressed the potential for subsidence in the Natomas Basin, which includes the project area. Based on a review of available studies and monitoring

programs, it was determined that land subsidence is not an issue in the Natomas Basin, as extensometer data and water levels have shown minimal recent subsidence, most of which is elastic. Thus, no impact related to subsidence is anticipated and this topic is not discussed further.

While this section does address soil erosion potential of the project, the reader is referred to Section 5.8, "Hydrology and Water Quality," for analysis of water quality impacts, including the potential to expose soils to construction-related erosion.

PROJECT IMPACTS AND MITIGATION MEASURES

Impact 5.5-1: Expose people and structures to seismic hazards, such as groundshaking

Implementation of the project may expose people and structures to seismic hazards. Design requirements, such as the California Building Code, include earthquake resistant design and materials that meet or exceed the current seismic engineering standards of the Seismic Zone 3 improvements. This would be a **less-than-significant** impact.

The proposed mixed-use residential and commercial uses, school, parks and open space areas could experience groundshaking and related hazards as a result of strong seismic events along faults within the region. However, structures must be designed to meet the California Building Code to withstand groundshaking during earthquakes (California Code of Regulation, Title 24). Requirements would include earthquake resistant design and materials that meet or exceed the current seismic engineering standards of the Seismic Zone 3 improvements. These design requirements would lower the risk of loss, injury, or death related to a seismic event to the maximum extent practicable and consistent with State and local City building code requirements. Thus, this impact would be **less than significant**.

Mitigation Measures

None required.

Impact 5.5-2: Expose people and structures to risks associated with expansive soil conditions.

Implementation of the project would occur on soil that is highly expansive with a high expansion potential. Construction of buildings on expansive soils may exert substantial pressures upon foundations, concrete slabs-on-grade, and other structural components, creating a substantial risk to life or property. This would be a **potentially significant** impact.

Expansive soils comprise mainly clays that increase in volume when water is absorbed and shrink when dry. According to laboratory testing in the project geotechnical engineering reports (prepared in compliance with General Plan Policy EC 1.1.2), soil existing in the project area have medium to high expansive soil potential. These soils are expected to experience substantial volume changes with increasing or decreasing soil moisture content, and are considered capable of exerting substantial expansion pressures upon foundations and concrete slabs-on-grade, particularly exterior flatwork such as sidewalks, patios, and driveways. California Building Code includes provisions to address expansive soils, but site-specific design considerations are needed. Thus, because construction of residences on soil with high potential for expansion could result in substantial risk to life or property, this impact would be **potentially significant**.

Mitigation Measure 5.5-2 Implement Recommendations of Geotechnical Engineering Reports

The project developer shall retain a qualified engineering firm on site during site preparation and grading operations to observe and test the fill to ensure compliance with recommendations from the geotechnical investigation report. These recommendations at a minimum include:

- ▲ During project design and construction, all measures outlined in the geotechnical engineering reports for the project (Wallace Kuhl 2016a, 2016b, 2016c, 2016d, and 2016e) as well as specific design

measures shall be implemented, at the direction of the City engineer, to prevent significant impacts associated with expansive soils. A geotechnical engineer shall be present on-site during earthmoving activities to ensure that requirements outlined in the geotechnical reports are adhered to for proposed fill and compaction of soils identified below.

- ▲ If the construction schedule requires continued work during the wet weather months (i.e., October through April), the project developer shall consult with a qualified civil engineer and implement any additional recommendations provided, as conditions warrant. These recommendations may include, but would not be limited to: 1) allowing a prolonged drying period before attempting grading operations at any time after the onset of winter rains; and 2) implementing aeration or lime treatment, to allow any low-permeability surface clay soils intended for use as engineered fill to reach a moisture content that would permit a specified degree of compaction to be achieved.

Significance after Mitigation

Implementation of Mitigation Measures 5.5-2 would reduce potential hazards associated with expansive soils to a **less-than-significant** level because it would ensure that proper grading and construction measures are taken to avoid damage to building foundations, streets, sidewalks. This mitigation measure is consistent with General Plan Policy EC 1.1.1 that requires the use of BMPs in site design and building construction methods to address geologic hazards.

Impact 5.5-3: Potential to cause loss of top soil and soil erosion.

Implementation of the project would require excavation and grading that has the potential to result in top soil loss and soil erosion. However, the project would be required to comply with General Permit for Discharges of Storm Water Associated with Construction Activity, the City's Grading Ordinance, and General Plan policies addressing soil and erosion impacts. Compliance with these standard requirements would ensure that the project's soil and erosion impacts would be **less than significant**.

Construction activities would require excavation and grading that has the potential to result in top soil loss and soil erosion by exposing bare and loosened soil to wind and rain. However, because the project would disturb more than one acre of ground surface, it would be required to comply with General Permit for Discharges of Storm Water Associated with Construction Activity requirements. These requirements include the development of a SWPPP that includes erosion control BMPs designed to prevent erosion from occurring on the project site. BMPs include such steps a maintaining existing vegetation, apply soil stabilizers, and covering of soil stockpiles. Further, the project would also be required to comply with the City's Grading Ordinance. Compliance with the City of Sacramento's Grading Ordinance, Chapter 15.88 of the Sacramento Code, requires that prior to the commencement of grading and Erosion and Sediment Control Plan be prepared for each project within the City. An erosion control professional, landscape architect, or civil engineer specializing in erosion control must prepare the Erosion and Sediment Control Plan and during the installation of erosion and sediment control measures (e.g., silt fencing, waddles, and revegetation) be on the project area to supervise implementation of the installation and maintenance of such facilities throughout the site clearing, grading, and construction periods to ensure erosion control.

In addition, 2035 General Plan policy EC 1.1.2 requires that projects within the City prepare a geotechnical investigation to determine site-specific seismic and soil characteristics and recommend appropriate mitigation measures to mitigate any potential impacts (addressed in mitigation measure 5.5-2). Further, 2035 General Plan policy ER 1.1.7 requires that necessary erosion control measures are used during site development activities for all projects in the City. Compliance with state and City requirements for soil impacts and erosion would reduce the potential for impacts related to substantial soil erosion and loss of topsoil. Therefore, this impact would be **less than significant**.

Mitigation Measures

No mitigation is required.

Impact 5.5-4: Damage or destruction of undiscovered paleontological resources

The project could result in the potential damage or destruction of undiscovered paleontological resources. This would be a **potentially significant** impact.

Because the project area is largely undeveloped, construction activities (e.g., grading, trenching, etc.) could result in the potential disturbance of undiscovered paleontological resources. Based on a review of known disturbances in the project vicinity, there appears to be a very low potential to uncover paleontological resources during project construction. However, there is a possibility of unanticipated and accidental paleontological discoveries during ground-disturbing project-related activities. Unanticipated and accidental paleontological discoveries during project implementation could affect significant paleontological resources. Therefore, this impact would be **potentially significant**.

Mitigation Measure 5.5-4 Protection of discovered paleontological resources

If discovery is made of items of paleontological interest, the contractor shall immediately cease all work activities in the vicinity (within approximately 100 feet) of the discovery. After cessation of excavation the contractor shall immediately contact the City. Project construction workers will be trained to identify potential paleontological resources.

The project developer shall retain a qualified paleontologist to observe all grading and excavation activities throughout all phases of project construction and shall salvage fossils as necessary. The paleontologist shall establish procedures for paleontological resource surveillance and shall establish, in cooperation with the project developer, procedures for temporarily halting or redirecting work to permit sampling, identification, and evaluation of fossils. If major paleontological resources are discovered that require temporarily halting or redirecting of grading, the paleontologist shall report such findings to the project developer and to the City. The paleontologist shall determine appropriate actions, in cooperation with the project developer and the City, that ensure proper exploration and/or salvage. Excavated finds shall first be offered to a State-designated repository such as the Museum of Paleontology, University of California, Berkeley, or the California Academy of Sciences. Otherwise, the finds shall be offered to the City for purposes of public education and interpretive displays. These actions, as well as final mitigation and disposition of the resources, shall be subject to approval by the City. The paleontologist shall submit a follow-up report to the City that shall include the period of inspection, an analysis of the fossils found, and the present repository of fossils.

Significance after Mitigation

Implementation of Mitigation Measures 5.5-4 would reduce potential loss of paleontological resources from site development to a **less-than-significant** level because it would ensure that discovered resources are evaluated and protected.

5.5.4 Cumulative Setting, Impacts, and Mitigation

CUMULATIVE SETTING

The geology and soils cumulative setting includes the Great Valley geomorphic province of California, which is bounded on the north by the Klamath and Cascade mountain ranges, on the east by the Sierra Nevada Mountains, and on the west by the California Coast Mountain Range. However, geotechnical impacts tend to be site specific rather than cumulative in nature and each development site would be subject to, at a minimum, site development and construction standards relative to seismic and other geologic conditions that are prevalent within the region. Impacts regarding surficial deposits, namely erosion and sediment deposition, can be cumulative in nature within a watershed. The reader is referred to Section 5.8, Hydrology and Water Quality, regarding cumulative water quality impacts from soil erosion.

CUMULATIVE IMPACTS AND MITIGATION MEASURES

Impact 5.5-5: Cumulative Impacts to Geology and Soils

Implementation of the project in combination with potential development in the region would not contribute geologic and soil stability impacts as such impacts are site-specific. This contribution would be **less than cumulatively considerable**.

Impacts associated with geology and soils are based on existing site-specific conditions that are situated within the subsurface materials that underlay the project area. These inherent conditions are an end-result of natural historical events that have played out through vast periods of geologic time. Geology and soil related impacts are generally site specific and are determined by a particular site's soil characteristics, topography, and proposed land uses. Further, cumulative projects would be constructed in accordance with the most recent version of the CBC construction and seismic safety requirements and recommendations contained in project-specific geotechnical reports. It is anticipated that any potential impacts associated with geologic and soil conditions could be mitigated within these project sites. As such, cumulative geology and soils impacts would be less than significant.

Lands within Sacramento County are susceptible to groundshaking and expansion, thus, placement of housing and commercial development on the project site and vicinity could result in the exposure of people and structures to unstable geologic units. If these areas become unstable, geologic hazards such as unstable soils, expansive soils, or collapse could result. However, with incorporation of Mitigation Measure 5.5-2, site-specific seismic requirements for expansive soils would be implemented to ensure that proper grading and construction measures are implemented to avoid damage to building foundations, streets, sidewalks/ Further, the project would be required to comply with established requirements of the City, as well as the CBC standards as they pertain to protection against known geologic hazards and potential geologic and soil related impacts. Thus, because site-specific impacts would be reduced to a less-than-significant level, the project **would not have a considerable contribution** such that a new significant cumulative impact would occur.

Mitigation Measures

No mitigation is required.

Impact 5.5-6: Cumulative Impacts to Paleontological Resources

Implementation of the project in combination with potential development in the region could result in the significant cumulative impacts associated with the destruction of paleontological resources. However, project mitigation measures would address impact and ensure that the project's contribution **would not be cumulatively considerable**.

Based on a review of known disturbances in the project vicinity and region, there appears to be a very low potential to uncover paleontological resources from cumulative development expected in the region. However, there is a possibility of unanticipated and accidental paleontological discoveries during ground-disturbing activities for development in the region. Unanticipated and accidental paleontological discoveries during project implementation have the potential to affect significant paleontological resources. Because there is a finite number of paleontological resources, which are generally limited to specific region, encountering an undiscovered specimen would be cumulatively considerable, when combined with other past, present, and foreseeable development in the region.

Implementation of Mitigation Measure 5.5-4 would offset project impacts by requiring appropriate actions to ensure that discovered resources are protected and properly salvaged. Therefore, the project would not contribute to the cumulative loss of paleontological resources, and project's contribution to the cumulative impact **would not be cumulatively considerable**.

Mitigation Measures

No mitigation is required.

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5.6 GREENHOUSE GAS EMISSIONS AND CLIMATE CHANGE

This section presents a summary of the current state of climate change science and greenhouse gas (GHG) emissions sources in California; a summary of relevant regulations; quantification of GHG emissions associated with implementation of the Panhandle Annexation and Planned Unit Development (PUD) (project) and discussion about the project's potential contribution to global climate change; and analysis of the project's resiliency to climate change-related risks. In addition, mitigation measures are recommended to reduce the project's potential significant impacts.

5.6.1 Environmental Setting

GREENHOUSE GAS EMISSIONS AND CLIMATE CHANGE

The Physical Scientific Basis

Certain gases in the earth's atmosphere, classified as GHGs, play a critical role in determining the earth's surface temperature. Solar radiation enters the earth's atmosphere from space. A portion of the radiation is absorbed by the earth's surface and a smaller portion of this radiation is reflected back toward space. This absorbed radiation is then emitted from the earth as low-frequency infrared radiation. The frequencies at which bodies emit radiation are proportional to temperature. The earth has a much lower temperature than the sun; therefore, the earth emits lower frequency radiation. Most solar radiation passes through GHGs; however, infrared radiation is absorbed by these gases. As a result, radiation that otherwise would have escaped back into space is instead "trapped," resulting in a warming of the atmosphere. This phenomenon, known as the greenhouse effect, is responsible for maintaining a habitable climate on earth, and is explained graphically below in Exhibit 5.6-1.

Prominent GHGs contributing to the greenhouse effect are carbon dioxide (CO₂), methane, nitrous oxide (N₂O), and fluorinated gases (i.e., hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride). See Exhibit 2 below for a breakdown of each pollutant in the atmosphere. Human-caused emissions of these GHGs in excess of natural ambient concentrations are found to be responsible for intensifying the greenhouse effect and leading to a trend of unnatural warming of the earth's climate, known as global climate change or global warming. It is "extremely likely" (i.e., 95 percent to 100 percent probable) that more than half of the observed increase in global average surface temperature from 1951 to 2010 was caused by the anthropogenic increase in GHG concentrations and other anthropogenic forcings together (Intergovernmental Panel on Climate Change [IPCC] 2014:3, 4).

Climate change is a global problem. GHGs are global pollutants, unlike criteria air pollutants and toxic air contaminants, which are pollutants of regional and local concern. Whereas most pollutants with localized air quality effects have relatively short atmospheric lifetimes (about one day), GHGs have long atmospheric lifetimes (one to several thousand years). GHGs persist in the atmosphere for long enough time periods to be dispersed around the globe. Although the lifetime of any GHG molecule is dependent on multiple variables and cannot be determined with any certainty, it is understood that more CO₂ is emitted into the atmosphere than is sequestered by ocean uptake, vegetation, and other forms of sequestration. Of the total annual human-caused CO₂ emissions, approximately 55 percent is sequestered through ocean and land uptake every year, averaged over the last 50 years, whereas the remaining 45 percent of human-caused CO₂ emissions remains stored in the atmosphere (IPCC 2013:467).

The quantity of GHGs in the atmosphere that ultimately result in climate change is not precisely known, but is enormous; no single project alone would measurably contribute to an incremental change in the global average temperature, or to global, local, or micro climates. Thus, from the standpoint of CEQA, GHG impacts relative to global climate change are inherently cumulative. Effects from global climate change are discussed in further detail below.

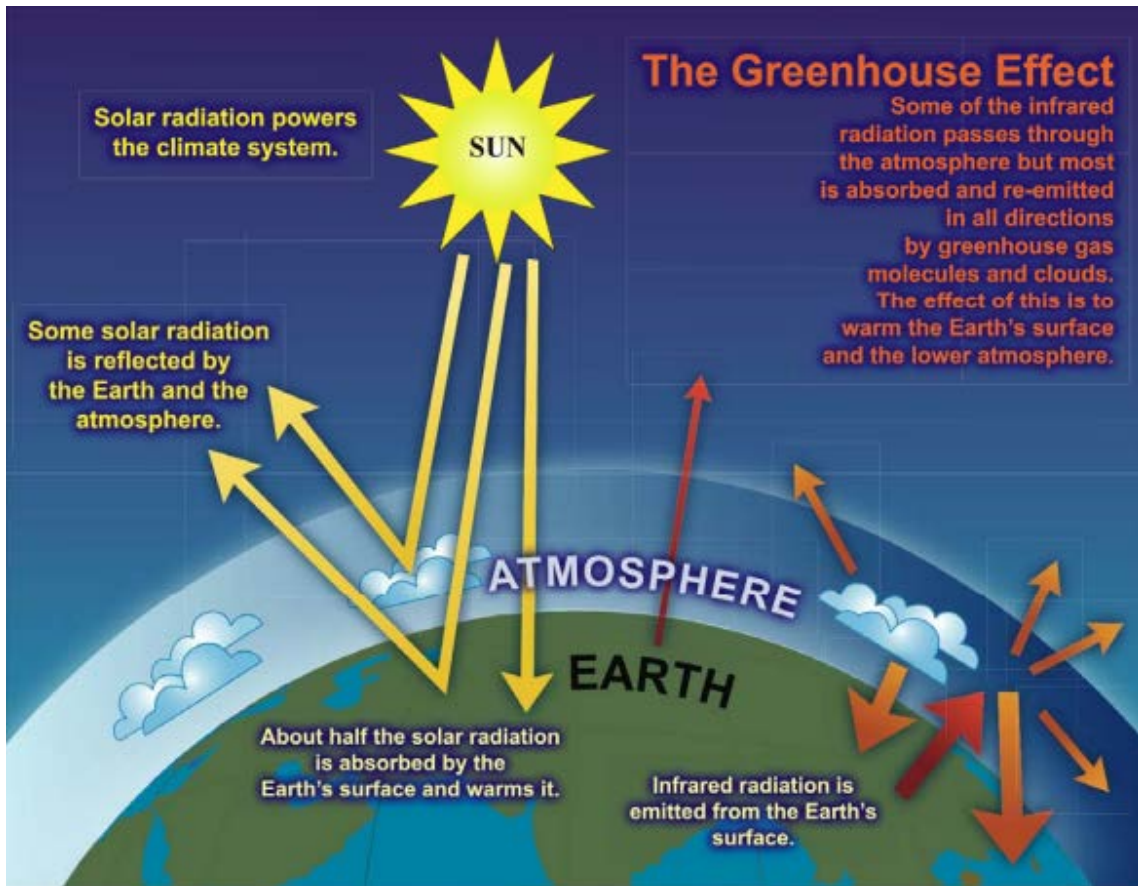


Exhibit 5.6-1
Source: IPCC 2007

The Greenhouse Effect

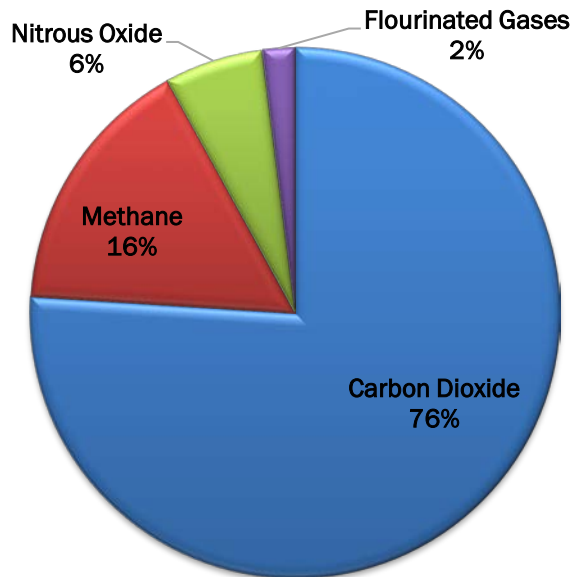


Exhibit 5.6-2
Source: IPCC 2014

Global Emissions by Gas

GREENHOUSE GAS EMISSION SOURCES

GHG emissions are attributable in large part to human activities associated with the transportation; industrial/manufacturing; utility combustion; residential and commercial building emissions and agricultural emissions sectors (California Air Resources Board [ARB] 2014a). In California, the transportation sector is the largest emitter of GHGs, followed by electricity generation (ARB 2016b). Emissions of CO₂ are byproducts of fossil fuel combustion. CH₄, a highly potent GHG, primarily results from off-gassing (the release of chemicals from nonmetallic substances under ambient or greater pressure conditions) and is largely associated with agricultural practices and landfills. N₂O is also largely attributable to agricultural practices and soil management. CO₂ sinks, or reservoirs, include vegetation and the ocean, which absorb CO₂ through sequestration and dissolution (CO₂ dissolving into the water), respectively, two of the most common processes for removing CO₂ from the atmosphere.

EFFECTS OF CLIMATE CHANGE ON THE ENVIRONMENT

According to the IPCC, which was established in 1988 by the World Meteorological Organization and the United Nations Environment Programme, global average temperature is expected to increase by 3 to 7 degrees Fahrenheit (°F) by the end of the century, depending on future GHG emission scenarios (IPCC 2007). According to the California Natural Resources Agency (CNRA), temperatures in California are projected to increase 2 to 5°F by 2050 and by 4 to 9°F by 2100 (CNRA 2009). Cal-Adapt is a climate change scenario planning tool developed by the California Energy Commission (CEC) that downscales global climate model data to local and regional resolution under two emissions scenarios: the A-2 scenario represents a business-as-usual future emissions scenario, and the B-1 scenario represents a lower GHG emissions future. According to Cal-Adapt, annual average temperatures in the project area are projected to rise by 3.6 to 6.3°F by 2090, with the range based on low and high emissions scenarios (Cal-Adapt 2017). The projected annual average number of extreme heat days (i.e., temperatures above 100°F) under the low-emissions scenario is approximately 15 days per year in 2050 and between 19 to 45 days per year at the end of the century. Under the high-emissions scenario, Cal-Adapt predicts that Sacramento County will experience 25 to 31 extreme heat days per year in 2050 and 50 to 67 days per year by 2099 (Cal-Adapt 2016).

Other environmental resources could be indirectly affected by the accumulation of GHG emissions and resulting rise in global average temperature. For example, an increase in the global average temperature is expected to result in a decreased volume of precipitation falling as snow in California and an overall reduction in snowpack in the Sierra Nevada. According to “Our Changing Climate” (CNRA 2012), the snowpack portion of the state’s water supply could potentially decline 30 to 90 percent by the end of the 21st century. An increase in precipitation falling as rain rather than snow also could lead to increased potential for floods because water that would normally be held in the snowpack of the Sierra Nevada until spring would flow into the Central Valley concurrently with winter rainstorm events. This scenario would place more pressure on California’s levee/flood control system.

As the existing climate throughout California changes over time, the ranges of various plant and wildlife species could shift or be reduced, depending on the favored temperature and moisture regimes of each species. In the worst cases, some species would become extinct or be extirpated from the state if suitable conditions are no longer available (CNRA 2012).

Changes in precipitation patterns and increased temperatures are expected to alter the distribution and character of natural vegetation and associated moisture content of plants and soils. An increase in frequency of extreme heat events and drought are also expected. These changes are expected to lead to increased frequency and intensity of wildfires (CNRA 2012).

Another outcome of global climate change is sea level rise. Sea level rose approximately seven inches during the last century and it is predicted to rise an additional seven to 22 inches by 2100, depending on the future levels of GHG emissions (IPCC 2007). CNRA projects that sea levels along California will rise 5 to 24 inches by 2050 and 17 to 66 inches by 2100 (CNRA 2012).

Greenhouse Gas Emissions Inventory

According to the Climate Action Plan for Internal Operations 2016 Update, GHG emissions in 2005 for the community GHG inventory for the City of Sacramento totaled 4,553,051 metric tons (MT) of carbon dioxide equivalent each year (CO₂e/year). The internal operations GHG inventory totaled 78,548 MTCO₂e in 2005, and 59,755 MTCO₂e in 2013, a 24 percent decrease. Breakdowns by emissions sector are presented in Tables 5.6-1 and 5.6-2.

Table 5.6-1 Sacramento 2005 Community GHG Inventory by Emissions Sector

Emissions Sector	MT CO ₂ e	Percent
On-Road Vehicles	1,942,412	43%
Off-Road Vehicle Use	192,768	4%
Commercial and Industrial Buildings	979,777	21%
Residential Buildings	748,792	16%
Waste	401,910	9%
Wastewater Treatment	44,340	1%
Water Related	25,850	1%
High Global Warming Potential GHGs	186,492	4%
Industrial Specific	28,656	1%
Agricultural	2,054	<1%
Total Emissions	4,553,051	100%

Notes: MT CO₂e/year = metric tons of carbon dioxide equivalent per year; GHG = greenhouse gas

Source: City of Sacramento 2016

Table 5.6-2 Sacramento Internal Operations GHG Inventory by Emissions Sector (2005 and 2013)

Emissions Sector	2005	2013	Percent Reduction from 2005
Buildings and Facilities	35,773	15,011	-24%
Water Management ¹		12,043	
Vehicle Fleet	21,927	14,081	-36%
Streetlights and Traffic Signals	6,872	4,870	-29%
Waste-in-Place	14,012	13,750	-2%
Total Emissions	78,584	59,755	-24%
Off-Road Fleet ²		862	NA
Total with Off-Road Fleet		60,617	NA

Notes: Units in metric tons of carbon dioxide equivalent per year; NA = not applicable.

¹ The water management sector includes energy consumption associated with water intake, treatment and distribution, and sewer and drainage system operations. Water-related emissions were included within the buildings and facilities sector in the 2005 internal operations inventory, but have been quantified separately in the 2013 inventory update.

² Off-road emissions were not included in the 2005 inventory.

Source: City of Sacramento 2016

5.6.2 Regulatory Setting

FEDERAL

National Program to Cut Greenhouse Gas Emissions and Improve Fuel Economy for Cars and Trucks

On August 28, 2014, EPA and the Department of Transportation's National Highway Traffic Safety Administration (NHTSA) finalized a new national program that would reduce GHG emissions and improve fuel economy for all new cars and trucks sold in the U.S. (NHTSA 2012). EPA proposed the first-ever national GHG emissions standards under the CAA, and NHTSA proposed Corporate Average Fuel Economy standards under the Energy Policy and Conservation Act. This national program requires automobile manufacturers to build a single light-duty national fleet that meets all requirements under both federal programs and the standards of California and other states. This program will increase fuel economy to the equivalent of 54.5 miles per gallon (mpg) for the fleet of cars and light-duty trucks by model year 2025, and, as of 2016, NHTSA and EPA are developing additional phases to address GHG emission standards for new medium- and heavy-duty trucks (NHTSA 2016). As of November 2013, the Sacramento region saw an increase in plug-in electric vehicle sales of 4 percent in month-over-month sales, exceeding the national average of 3 percent (SACOG 2016).

STATE

Executive Order S-3-05

Executive Order (EO) S-3-05, signed by Governor Arnold Schwarzenegger in 2005, proclaims that California is vulnerable to the impacts of climate change. It declares that increased temperatures could reduce the Sierra Nevada snowpack, further exacerbate California's air quality problems, and potentially cause a rise in sea levels. To combat those concerns, the executive order established total GHG emission targets for the state. Specifically, emissions are to be reduced to the 2000 level by 2010, the 1990 level by 2020, and to 80 percent below the 1990 level by 2050.

Assembly Bill 32, the California Global Warming Solutions Act of 2006

In September 2006, Governor Schwarzenegger signed the California Global Warming Solutions Act of 2006, Assembly Bill (AB) 32 As part of the California Health and Safety Code. AB 32 establishes regulatory, reporting, and market mechanisms to achieve quantifiable reductions in GHG emissions and a cap on statewide GHG emissions. AB 32 requires that statewide GHG emissions be reduced to 1990 levels by 2020. AB 32 also requires that these reductions "...shall remain in effect unless otherwise amended or repealed. Further, AB 32 explains that It is the intent of the Legislature that the statewide greenhouse gas emissions limits continue in existence and be used to maintain and continue reductions in emissions of greenhouse gases beyond 2020, and that the [Air Resources Board] shall make recommendations to the Governor and the Legislature on how to continue reductions of greenhouse gas emissions beyond 2020." [California Health and Safety Code, Division 25.5, Part 3, Section 38551]

Assembly Bill 32 Climate Change Scoping Plan and 2008 Update

In December 2008, ARB adopted its Climate Change Scoping Plan, which contains the main strategies California will implement to achieve reduction of approximately 118 million metric tons (MMT) of CO₂-equivalent (CO₂e) emissions, or approximately 21.7 percent from the State's projected 2020 emission level of 545 MMT of CO₂e under a business-as-usual scenario (this is a reduction of 47 MMT CO₂e, or almost 10 percent, from 2008 emissions). In May 2014, ARB released and has since adopted the *First Update to the Climate Change Scoping Plan* to identify the next steps in reaching AB 32 goals and evaluate progress that has been made between 2000 and 2012 (ARB 2014:4 and 5). According to the update, California is on track to meet the near-term 2020 GHG limit and is well positioned to maintain and continue reductions beyond 2020 (ARB 2014:ES-2). The update also reports the trends in GHG emissions from various emissions sectors (e.g., transportation, building energy, agriculture).

On January 20, 2017, ARB released its proposed 2017 Climate Change Scoping Plan Update, which lays out the framework for achieving the 2030 reductions as established in more recent legislation (discussed below). The proposed 2017 Scoping Plan Update identifies the GHG reductions needed by each emissions sector to achieve a statewide emissions level that is 40 percent below 1990 levels before 2030 consistent with Senate Bill 32.

The proposed update also identifies how GHGs associated with projects could be evaluated under CEQA. Specifically, it states that achieving “no net increase” in GHG emissions is the correct overall objective of projects evaluated under CEQA if conformity with an applicable local GHG reduction plan cannot be demonstrated. ARB recognizes that it may not be appropriate or feasible for every development project to mitigate its GHG emissions to no net increase and that this may not necessarily imply a substantial contribution to the cumulatively significant environmental impact of climate change. At the time of writing this environmental document, ARB has not yet approved its proposed 2017 Scoping Plan Update.

Senate Bill 375

Senate Bill 375 (SB 375), signed by the Governor in September 2008, aligns regional transportation planning efforts, regional GHG emission reduction targets, and land use and housing allocation. SB 375 requires metropolitan planning organizations (MPOs) to adopt a Sustainable Communities Strategy (SCS) or Alternative Planning Strategy, showing prescribed land use allocation in each MPO’s Regional Transportation Plan. ARB, in consultation with the MPOs, is to provide each affected region with reduction targets for GHGs emitted by passenger cars and light trucks in their respective regions for 2020 and 2035.

The Sacramento Area Council of Governments (SACOG) serves as the MPO for Sacramento, Placer, El Dorado, Yuba, Sutter, and Yolo Counties, excluding those lands located in the Lake Tahoe Basin. The project area is in Sacramento County. SACOG adopted its Metropolitan Transportation Plan/Sustainable Communities Strategy (MTP/SCS) 2035 in 2012, and completed an update adopted on February 18, 2016. SACOG was tasked by ARB to achieve a 9 percent per capita reduction compared to 2012 emissions by 2020 and a 16 percent per capita reduction by 2035, which ARB confirmed the region would achieve by implementing its SCS (ARB 2013). The MTP/SCS forecasted land use development by community types: Center and Corridor Communities, Established Communities, Developing Communities, Rural Residential Communities, and Lands Not Identified for Development in the MTP/SCS Planning Period.

Executive Order B-30-15

On April 20, 2015 Governor Edmund G. Brown Jr. signed Executive Order B-30-15 to establish a California GHG reduction target of 40 percent below 1990 levels by 2030. The Governor’s executive order aligns California’s GHG reduction targets with those of leading international governments such as the 28-nation European Union which adopted the same target in October 2014. California is on track to meet or exceed the target of reducing GHG emissions to 1990 levels by 2020, as established in the California Global Warming Solutions Act of 2006 (Assembly Bill 32, discussed above). California’s new emission reduction target of 40 percent below 1990 levels by 2030 is expected to make it possible to reach the ultimate goal of reducing emissions 80 percent below 1990 levels by 2050. This is in line with the scientifically-determined levels needed in the U.S. to limit global warming below 2 degrees Celsius, the warming threshold at which major climate disruptions are projected, such as super droughts and rising sea levels.

Senate Bill 32 and Assembly Bill 197 of 2016

In August 2016, Governor Brown signed SB 32 and AB 197, which serve to extend California’s GHG reduction programs beyond 2020. SB 32 amended the Health and Safety Code to include Section 38566, which contains language to authorize ARB to achieve a statewide GHG emission reduction of at least 40 percent below 1990 levels by no later than December 31, 2030. SB 32 codified the targets established by EO B-30-15 for 2030, which set the next interim step in the State’s continuing efforts to pursue the long-term target expressed in EOs S-3-05 and B-30-15 of 80 percent below 1990 emissions levels by 2050.

Advanced Clean Cars Program

In January 2012, ARB approved the Advanced Clean Cars program which combines the control of GHG emissions and criteria air pollutants, as well as requirements for greater numbers of zero-emission vehicles, into a single package of standards for vehicle model years 2017 through 2025. The new rules strengthen the GHG standard for 2017 models and beyond. This will be achieved through existing technologies, the use of stronger and lighter materials, and more efficient drivetrains and engines. The program's zero-emission vehicle regulation requires battery, fuel cell, and/or plug-in hybrid electric vehicles to account for up to 15 percent of California's new vehicle sales by 2025. The program also includes a clean fuels outlet regulation designed to support the commercialization of zero-emission hydrogen fuel cell vehicles planned by vehicle manufacturers by 2015 by requiring increased numbers of hydrogen fueling stations throughout the state. The number of stations will grow as vehicle manufacturers sell more fuel cell vehicles. By 2025, when the rules will be fully implemented, the statewide fleet of new cars and light trucks will emit 34 percent fewer global warming gases and 75 percent fewer smog-forming emissions than the statewide fleet in 2016 (ARB 2016a).

Senate Bill X1-2, the California Renewable Energy Resources Act of 2011

SB X1-2 of 2011 requires all California utilities to generate 33 percent of their electricity from renewables by 2020. SB X1-2 sets a three-stage compliance period requiring all California utilities, including independently-owned utilities, energy service providers, and community choice aggregators, to generate 20 percent of their electricity from renewables by December 31, 2013; 25 percent by December 31, 2016; and 33 percent by December 31, 2020. SB X1-2 also requires the renewable electricity standard to be met increasingly with renewable energy that is supplied to the California grid from sources within, or directly proximate to, California. SB X1-2 mandates that renewables from these sources make up at least 50 percent of the total renewable energy for the 2011-2013 compliance period, at least 65 percent for the 2014-2016 compliance period, and at least 75 percent for 2016 and beyond. In October 2015, SB 350 was signed by Governor Brown, which requires retail sellers and publicly-owned utilities to procure 50 percent of their electricity from renewable resources by 2030.

California Building Efficiency Standards of 2013 (Title 24, Part 6)

Buildings in California are required to comply with California's Energy Efficiency Standards for Residential and Nonresidential Buildings established by the CEC regarding energy conservation standards and found in Title 24, Part 6 of the California Code of Regulations. These standards were first adopted in 1978 in response to a legislative mandate to reduce California's energy consumption and are updated on an approximately 3-year cycle to allow consideration and possible incorporation of new energy efficient technologies and methods. All buildings for which an application for a building permit is submitted on or after January 1, 2017 must follow the 2016 standards (CEC 2015a). Energy efficient buildings require less electricity; therefore, increased energy efficiency reduces fossil fuel consumption and decreases GHG emissions.

LOCAL

Sacramento Metropolitan Air Quality Management District

Sacramento Metropolitan Air Quality Management District (SMAQMD), is the primary agency responsible for addressing air quality concerns in the City of Sacramento—its role is discussed further in Section 5.2, "Air Quality." SMAQMD also recommends methods for analyzing project-generated GHGs in CEQA analyses and offers a myriad of potential GHG reduction measures for land use development projects to be considered by lead agencies. SMAQMD has developed thresholds of significance to provide a uniform scale to measure the significance of GHG emissions from land use and stationary source projects in compliance with CEQA and AB 32. SMAQMD's goals in developing GHG thresholds include ease of implementation; use of standard analysis tools; and emissions mitigation consistent with AB 32. However, in accordance with SMAQMD guidance, when other local agencies have developed their own thresholds of significance for evaluating GHG emissions, these would take precedence over SMAQMD thresholds.

City of Sacramento

2035 General Plan

The City of Sacramento 2035 General Plan includes the following policy related to reducing GHG emissions in Sacramento (City of Sacramento 2015).

- ▲ Policy ER 6.1.5. The City shall reduce community GHG emissions by 15 percent below 2005 baseline levels by 2020, and strive to reduce community emissions by 49 percent and 83 percent by 2035 and 2050, respectively.
- ▲ Policy ER 6.1.7. The City shall reduce greenhouse gas emissions from new development by discouraging auto-dependent sprawl and dependence on the private automobile; promoting water conservation and recycling; promoting development that is compact, mixed use, pedestrian friendly, and transit oriented; promoting energy-efficient building design and site planning; improving the job/housing ratio in each community; and other methods of reducing emissions.

Sacramento Climate Action Plan

The Sacramento Climate Action Plan (CAP) was adopted on February 14, 2012 by the Sacramento City Council and was incorporated into the 2035 General Plan. The CAP includes GHG emission reduction targets, strategies, and implementation measures developed to help the city reach these targets. Reduction strategies address GHG emissions associated with transportation and land use, energy, water, waste management and recycling, agriculture, and open space. The City's goals related to transportation and energy use are described below.

- ▲ Improve accessibility and system connectivity by removing physical and operational barriers to safe travel.
- ▲ Reduce reliance on the private automobile.
- ▲ Use emerging transportation technologies and services to increase transportation system efficiency.
- ▲ Design, construct, and maintain a universally accessible, safe, convenient, integrated and well-connected pedestrian system that promotes walking.
- ▲ Create and maintain a safe, comprehensive, and integrated transit system as an essential component of a multimodal transportation system.
- ▲ Support the development and provision of privately funded and/or privately-operated transit services that support citywide and regional goals by reducing single-occupant vehicle (SOV) trips, vehicle miles traveled and GHG emissions.
- ▲ The City and other agencies within jurisdiction over roadways within City limits shall plan, design, operate and maintain all streets and roadways to accommodate and promote safe and convenient travel for all users – pedestrians, bicyclists, transit riders, and persons of all abilities, as well as freight and motor vehicle drivers.
- ▲ Enhance the quality of life within existing neighborhoods through the use of neighborhood traffic management and traffic calming techniques, while recognizing the City's desire to provide a grid system that creates a high level of connectivity.
- ▲ Maintain an interconnected system of streets that allows travel on multiple routes by multiple modes, balancing access, mobility and place-making functions with sensitivity to the existing and planned land use context of each corridor and major street segment.

- ▲ Create and maintain a safe, comprehensive, and integrated bicycle system and set of support facilities throughout the city that encourage bicycling that is accessible to all. Provide bicycle facilities, programs and services and implement other transportation and land use policies as necessary to achieve the City's bicycle mode share goal as documented in the Bicycle Master Plan.
- ▲ Provide and manage parking such that it balances the citywide goal of economic development, livable neighborhoods, sustainability, and public safety with the compact multi-modal urban environment prescribed by the General Plan.
- ▲ Provide for the energy needs of the city and decrease dependence on nonrenewable energy sources through energy conservation, efficiency, and renewable resource strategies.

5.6.3 Impacts and Mitigation Measures

This section describes the project's effects in relation to GHG emissions and climate change. The discussion includes the criteria for determining the level of significance of potential effects and a description of the methods and assumptions used to conduct the analysis.

SIGNIFICANCE CRITERIA

The issue of global climate change is inherently a cumulative issue, as the GHG emissions of individual projects cannot be shown to have any material effect on global climate. Thus, the project's impact to climate change is addressed only as a cumulative impact.

CEQA Guidelines Section 15064 and relevant portions of Appendix G recommend that a lead agency consider a project's consistency with relevant, adopted plans, and discuss any inconsistencies with applicable regional plans, including plans to reduce GHG emissions. In Appendix G of the State CEQA Guidelines, two questions are provided to help assess if the project would result in a potentially significant impact on climate change. These questions ask whether the project would:

- ▲ generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment, or
- ▲ conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of GHGs?

In California, counties, cities, and air districts have developed guidance and thresholds of significance for determining significance of GHG emissions that occur within their jurisdiction. The City of Sacramento is the CEQA Lead Agency for the project and is, therefore, responsible for determining whether a particular impact would be considered significant.

SMAQMD has developed thresholds of significance for development projects that occur within the jurisdiction of SMAQMD of which are tied to target year 2020. SMAQMD recommends that lead agencies quantify and disclose project-related GHG emissions and make a significance determination of these emissions. Due to the cumulative effect of GHGs, SMAQMD recommends amortizing a project's construction emissions over the operational lifetime of the project (SMAQMD 2016). The sum of estimated amortized construction emissions and annual operational emissions per year is assumed to reflect the total annual GHG emissions attributable to the project.

As discussed above, recent passage of SB 32 in September 2016 set a new State GHG emissions target for the year 2030 at 40 percent below 2020 levels. For purposes of this EIR, significance has been evaluated based on the project's compliance with the SB 32 target: The project's impact is considered significant if the project were to conflict with or prevent the State from meeting 2030 GHG reduction targets.

Based on the overall objective of the proposed 2017 Scoping Plan Update, a “no net increase” threshold is applied for the purposes of the GHG impact analysis for the project. The intent of this analysis is not to present the use of a no net increase threshold as a generally applied threshold of significance for GHG impacts. Its use in this EIR is related directly to the facts surrounding the project and availability of reliance on other threshold options. A project that results in no net increase in GHG emissions would not result in a substantial increase in GHGs or conflict with local or State plans adopted for the purpose of reducing GHG emissions.

METHODS AND ASSUMPTIONS

GHG emissions associated with the project would be generated during project construction and by operation of the various land uses after construction is complete. Project-related operational emissions of GHG were estimated for the following sources: area sources (e.g., the use of landscape maintenance equipment), energy use associated with residential and nonresidential buildings, water and wastewater treatment and distribution, solid waste, and mobile sources.

Construction Emissions

Construction-related emissions of GHGs were calculated using the California Emissions Estimator Model (CalEEMod) Version 2016.3.1 computer program (CAPCOA 2016), as recommended by the City of Sacramento and SMAQMD. Modeling was based on project-specific information (e.g., size, number of units being built, area to be graded, area to be paved, energy information), where available; reasonable assumptions based on typical construction activities; and default values in CalEEMod that are based on the project’s location and land use type.

Construction of the project was assumed to begin in 2018. Although the actual construction schedule is unknown at this time, the earliest possible date that construction could occur was chosen. This assumption would be considered conservative as construction equipment fleet emissions are expected to decrease in the future with increased emission controls and standards. Project construction is anticipated to occur for a period of approximately seven years. The proposed park area and single family housing is estimated to be constructed at a constant rate over the seven years of construction, with the suburban center and elementary school construction occurring simultaneously in the first year of construction, representing the most intense construction year. For a detailed description of model input and output parameters and assumptions, refer to Appendix E.

Operation Emissions

Operation-related emissions of GHG were also estimated using CalEEMod Version 2016.3.1 with a project build-out year of 2036. Project-related operational emissions of GHGs were estimated for the following sources: area sources (e.g., landscaping-related fuel combustion sources), energy use (i.e., electricity and natural gas consumption), water use, solid waste, and mobile sources. Operational mobile-source GHG emissions were modeled based on the estimated level of vehicle miles traveled (VMT) by residents, employees, and students (DKS 2017). Project-specific VMT estimates were available in the traffic impact analysis conducted for the project (See Section 5.11, “Transportation and Circulation”). Mobile-source emissions were calculated using CalEEMod Version 2016.3.1 with default trip generation rates so the project’s annual VMT matched the traffic study. Indirect emissions associated with electricity and natural gas consumption were estimated using GHG emissions factors for Sacramento Municipal Utility District (SMUD) based on SMUD’s Strategic Directive on Resource Planning (SMUD 2016). The project’s level of electricity and natural gas usage were based on 2016 Title 24-adjusted consumption rates provided by CalEEMod for each land use type. Adjustments were based on the California Energy Commission’s (CEC) estimate that single-family houses are 28 percent more energy efficient than 2013 Title 24 standards and non-residential buildings are 5 percent more efficient than 2013 Title 24 standards (CEC 2015b).

In addition, an Air Quality Mitigation Plan (Appendix D) was prepared for the project to reduce operational oxides of nitrogen and reactive organic gas emissions, which requires several mitigation features that have the added benefit of reducing GHGs. As discussed in further detail in Section 5.2 “Air Quality” and the AQMP included in Appendix D, measures that would reduce GHG emissions include improvements to on-site pedestrian facilities, traffic calming design features, and employee trip reduction programs. Detailed model assumptions and inputs for these calculations can be found in Appendix E.

PROJECT IMPACTS AND MITIGATION MEASURES

Impact 5.6-1: Project-generated greenhouse gas emissions

The project is estimated to generate 5,530 MTCO₂e from construction activities and 27,379 MTCO₂e operational-related emissions at project buildout in 2036. Total project emissions would be 27,600 MTCO₂e/year in 2036 with combined amortized construction emissions. This level of GHG emissions has the potential to result in a considerable contribution to cumulative emissions related to global climate change and conflict with State GHG reduction targets established for 2030 and 2050. This cumulative impact would be significant and the project's contribution would be **cumulatively considerable**.

GHG emissions associated with the project would be generated during construction and operation. Project-related construction activities would result in the generation of GHG emissions from the use of heavy-duty off-road construction equipment, delivery trucks associated with materials transport, and vehicle use during worker commute.

Operation of the project would result in mobile-source GHG emissions associated with vehicle trips to and from the project, and within the project area (i.e., project-generated VMT); area-source emissions from the operation of landscape maintenance equipment; energy-source emissions from the consumption of electricity and natural gas; water-related energy consumption associated with water use and the conveyance and treatment of wastewater; waste-generated emissions from the transport and disposal of solid waste.

Construction activities were assumed to occur over seven years and full build out of the project was assumed to occur by 2036. Emissions were quantified for each year of construction and project operations. Modeling results are shown below in Table 5.6-3.

Table 5.6-3 Project-Generated Greenhouse Gas Emissions

Project Phase	GHG Emissions
Construction GHG Emissions	MT CO ₂ e
2018	917
2019	796
2020	785
2021	773
2022	761
2023	750
2024	748
Total Construction GHG Emissions	5,530
Amortized over 25 Years	221
Operational GHG Emissions	MT CO₂e (MT/year)
Area	46
Energy	10,394
Mobile	14,776
Waste	1,645
Water	518
Total Project Annual GHG Emissions (Amortized construction + Operational)	27,600

Notes: Totals may not add due to rounding.; CO₂e = carbon dioxide equivalent; MT = metric tons
Source: Modeled by Ascent Environmental 2017

As shown in Table 5.6-3 above, the project would generate a total of 5,530 MTCO_{2e} over the duration of construction activities (seven-year duration assumed) and annual operational emissions of 27,379 MTCO_{2e}. Total construction emissions were amortized over the project's 25-year life, consistent with guidance from SMAQMD (SMAQMD 2016). Thus, the level of annual GHG emissions associated with the project, including amortized construction-related emissions, is estimated to be approximately 27,600 MTCO_{2e}/year.

As discussed in the "Significance Criteria" section above, project buildout would occur in 2036.

Because the project would generate 27,600 MTCO_{2e}/year, it could conflict with the State's ability to meet the goals of SB 32 and project-generated GHG emissions would be considered **cumulatively considerable and significant**.

Mitigation Measures:

On-site GHG emission reduction measures

Mitigation Measure 5.6-1a

The project developer shall incorporate the following mitigation measures into the project to reduce operational emissions of GHGs to the extent feasible.

Transportation

- ▲ Include adequate electric wiring and infrastructure in all single-family residential units (shown in building plans) to support a 240-volt electric vehicle charger in the garage or off-street parking area to allow for the future installation of electric vehicle chargers. This connection shall be separate from the connection provided to power an electric clothes dryer.
- ▲ Include electric vehicle charging stations, similar or better than Level 2, in parking areas as part of site design submittals for development of the designated suburban center and elementary school.

Building Energy

- ▲ Achieve as many residential and non-residential zero net energy buildings as feasible, which shall be implemented in the following way:
 - Prior to the issuance of building permits for residential, commercial, and private recreation centers, the project developer or its designee shall submit a Zero Net Energy Confirmation Report (ZNE Report) prepared by a qualified building energy efficiency and design consultant to the City of Sacramento for review and approval. The ZNE Report shall demonstrate that development within the Panhandle PUD project area subject to application of Title 24, Part 6, of the California Code of Regulations has been designed and shall be constructed to achieve ZNE, as defined by CEC in its 2015 Integrated Energy Policy Report, or otherwise achieve an equivalent level of energy efficiency, renewable energy generation or greenhouse gas emissions savings.
- ▲ Where ZNE is deemed infeasible, building energy may also be reduced in the following ways:
 - ▲ Reduce building energy-related GHG emissions through the use of on-site renewable energy (e.g., solar photovoltaic panels) where technologically feasible and at a minimum of 15 percent of the project's total energy demand. Building design, landscape plans, and solar installation shall take into account solar orientation, and building roof size to maximize solar exposure.
 - ▲ Provide incentives to future residents to purchase Energy Star™ appliances (including clothes washers, dish washers, fans, and refrigerators).
 - ▲ Install high efficiency lighting (i.e., light emitting diodes) in all streetlights, security lighting, and all other exterior lighting applications.

- ▲ Provide electrical outlets on the exterior of project buildings to allow sufficient powering of electric landscaping equipment.
- ▲ Install low-flow kitchen faucets that comply with CALGreen residential voluntary measures (maximum flow rate not to exceed 1.5 gallons per minute at 60 psi).
- ▲ Install low-flow bathroom faucets that exceed the CALGreen residential mandatory requirements (maximum flow rate not to exceed 1.5 gallons per minute at 60 psi)
- ▲ Install low-flow toilets that exceed the CALGreen residential mandatory requirements (maximum flush volume less not to exceed 1.28 gallons per flush)
- ▲ Install low-flow showerheads that exceed the CALGreen residential mandatory requirements (maximum flow rate not to exceed 2 gallons per minute at 80 psi)
- ▲ Reduce turf area and use water-efficient irrigation systems (i.e., smart sprinkler meters) and landscaping techniques/design.

Purchase carbon offsets

Mitigation Measure 5.6-1b

In addition to Mitigation Measures 5.6-1a and 5.2-2 (Air Quality Mitigation Plan), the project developer shall offset GHG emissions to zero by funding activities that directly reduce or sequester GHG emissions or, if necessary, obtaining carbon credits.

To the degree a project relies on GHG mitigation measures, the City of Sacramento, SMAQMD, and ARB recommend that lead agencies prioritize on-site design features (Mitigation Measures 5.6-1a and 5.2-2) and direct investments in GHG reductions in the vicinity of the project, to help provide potential air quality and economic co-benefits locally. For example, direct investment in a local building retrofit program can pay for cool roofs, solar panels, solar water heaters, smart meters, energy efficient lighting, energy efficient appliances, energy efficient windows, insulation, and water conservation measures for homes within the geographic area of the project. Other examples of local direct investments include financing installation of regional electric vehicle charging stations, paying for electrification of public school buses, and investing in local urban forests. However, it is critical that any such investments in actions to reduce GHG emissions are real and quantifiable. Where further project design or regional investments are infeasible or not proven to be effective, it may be appropriate and feasible to mitigate project emissions through purchasing and retiring carbon credits issued by a recognized and reputable accredited carbon registry.

The CEQA Guidelines recommend several options for mitigating GHG emissions. State CEQA Guidelines Section 15126.4(C)(3) states that measures to mitigate the significant effects of GHG emissions may include “off-site measures, including offsets that are not otherwise required...” Through the purchase of GHG credits through voluntary participation in an approved registry, GHG emissions may be reduced at the project level. GHG reductions must meet the following criteria:

- ▲ Real—represent reductions actually achieved (not based on maximum permit levels),
- ▲ Additional/Surplus—not already planned or required by regulation or policy (i.e., not double counted),
- ▲ Quantifiable—readily accounted for through process information and other reliable data,
- ▲ Enforceable—acquired through legally-binding commitments/agreements,
- ▲ Validated—verified through accurate means by a reliable third party, and
- ▲ Permanent—will remain as GHG reductions in perpetuity.

In partnership with offset providers, the project developer shall purchase carbon offsets (from available programs that meet the above criteria) of at least 20,800 MTCO₂e/year. It should be noted, however, that these numbers represent an estimate based on reductions achieved through the measures included in Mitigation Measures 5.6-

1a and 5.2-2, and are subject to change depending on alterations in the level of mitigation applied to the project depending on the feasibility of individual measures. Offset protocols and validation applied to the project could be developed based on existing standards (e.g., Climate Registry Programs) or could be developed independently, provided such protocols satisfy the basic criterion of “additionality” (i.e., the reductions would not happen without the financial support of purchasing carbon offsets).

Purchases of offsets would occur once and remain effective throughout the lifetime of the project (i.e., 25 years per SMAQMD guidance). For an offset to be considered viable, it must exhibit “permanence.” To adequately reduce emissions of GHGs, carbon offsets must be able to demonstrate the ability to counterbalance GHG emissions over the lifespan of a project or “in perpetuity.” For example, the purchase of a carbon offset generated by a reforestation project would entail the replanting or maintenance of carbon-sequestering trees, which would continue to sequester carbon over several years, decades, or centuries (Forest Trends 2015). The offsets purchased must offer an equivalent GHG reduction benefit annually i.e., 20,800 MTCO_{2e} or more GHGs reduced annually as opposed to a one-time reduction.

Prior to issuing building permits for development within the project area, the City of Sacramento shall confirm that the project developer or its designee has fully offset the project’s remaining (i.e., post implementation of Mitigation Measures 5.6-1a and 5.2-2) operational GHG emissions over the 25-year project life associated with such building permits by relying upon one of the following compliance options, or a combination thereof:

- ▲ Demonstrate that the project developer has directly undertaken or funded activities that reduce or sequester GHG emissions that are estimated to result in GHG reduction credits (if such programs are available), and retire such GHG reduction credits in a quantity equal to the remaining operational GHG emissions;
- ▲ Provide a guarantee that it shall retire carbon credits issued in connection with direct investments (if such programs exist at the time of building permit issuance) in a quantity equal to the remaining operational GHG emissions;
- ▲ Undertake or fund direct investments (if such programs exist at the time of building permit issuance) and retire the associated carbon credits in a quantity equal to the remaining operational GHG emissions; or
- ▲ If it is impracticable to fully offset operational emissions through direct investments or quantifiable and verifiable programs do not exist, the project developer or its designee may purchase and retire carbon credits that have been issued by a recognized and reputable, accredited carbon registry in a quantity equal to the remaining operational GHG Emissions.

Significance after Mitigation

Implementation of identified actions in Mitigation Measures 5.6-1a and 5.2-2 could reduce GHG emissions by up to 24.6 percent, or approximately 6,800 MTCO_{2e}/year. This reduction would only be applied should all identified actions in Mitigation Measure 5.6-1a and 5.2-2 be taken. Regardless of the implementation of Mitigation Measure 5.6-1a and 5.2-2, the project would still result in GHG emissions that would be considered cumulatively considerable.

Further mitigation of the impact through Implementation of Mitigation Measure 5.6-1b would require the purchase of off-site carbon credits to reduce the remaining operational GHG emissions, estimated to be 20,800 MT CO_{2e}/year. This additional mitigation would offset remaining project GHG emissions, such that the project would not conflict with City of Sacramento’s climate planning efforts, ARB’s proposed 2017 Scoping Plan Update, or established state GHG reduction targets. Thus, the project’s contribution to cumulative GHG emission increase impacts **would not be cumulatively considerable**.

Impact 5.6-2: Impacts of climate change on the project.

The project is not located within an area projected to experience a substantial increase in wildland fire risk or flooding as a result of climate changes in the future. Further, water supply for the project would be adequate. Anticipated changes in future climate patterns are not anticipated to have any substantial adverse effects on the project. Therefore, the impacts of climate change on the project would be **less than significant**.

As discussed previously in this section, there is substantial evidence that human-induced increases in GHG concentrations in the atmosphere have led to increased global average temperatures (climate change) through the intensification of the greenhouse effect, and associated changes in local, regional, and global average climatic conditions.

Although there is a strong scientific consensus that global climate change is occurring and influenced by human activity, there is less certainty as to the timing, severity, and potential consequences of the climate phenomena, particularly at specific locations. Scientists have identified several ways in which global climate change could alter the physical environment in California (CNRA 2012, DWR 2006, IPCC 2014). These include:

- ▲ increased average temperatures;
- ▲ modifications to the timing, amount, and form (rain vs. snow) of precipitation;
- ▲ changes in the timing and amount of runoff;
- ▲ reduced water supply;
- ▲ deterioration of water quality; and
- ▲ elevated sea level.

Several of these changes may translate into a variety of issues and concerns that may affect the project, including:

- ▲ increased frequency and intensity of wildfire as a result of changing precipitation patterns and temperatures;
- ▲ reliability in water supply associated with changes to precipitation and snowmelt patterns; and
- ▲ increased risk of flood associated with sea level rise.

Annual average temperatures in Sacramento County are projected to increase steadily. According to Cal-Adapt, Sacramento County is projected to experience a temperature increase of 1.5 °F by 2050 and 3.5 °F by 2090 under the low-emissions scenario, and an increase of 4.1 °F by 2050 and 6.2 °F by 2090 under the high-emissions scenario, as compared to the 1961 to 1990 baseline period (Cal-Adapt 2016).

Increased temperature is expected to lead to secondary climate change impacts, including increases in the frequency, intensity, and duration of extreme heat days and multi-day heat waves/events in California. Cal-Adapt defines the extreme heat day threshold for Sacramento County as 100 °F or higher. An extreme heat day is defined as a day between April through October where the maximum temperature exceeds the 98th historical percentile of maximum temperature based on daily temperature data from 1961 to 1990 (i.e., 100 °F). From the data collected from 1961 to 1990, Sacramento County has a historical average of four extreme heat days a year. Sacramento County is already experiencing an increase in the frequency of extreme heat days per year with a current average of eight to nine extreme heat days per year from 2010 to 2016, with 18 extreme heat days in 2015 (Cal-Adapt 2016).

Cal-Adapt data shows a range of projected increases in the number of extreme heat days by 2099, all of which are at least four times the historical (1961-1990) average in both emissions scenarios. The projected annual average number of extreme heat days under the low-emissions scenario is approximately 15 days per year in 2050 and between 19 to 45 days per year at the end of the century. Under the high-emissions scenario, Cal-Adapt predicts that Sacramento County will experience 25 to 31 extreme heat days per year in 2050 and 50 to 67 days per year by 2099 (Cal-Adapt 2016).

The project would meet the 2016 Title 24 building energy standards, which require well-insulated buildings and high-efficiency heating, ventilation, and air conditioning units. The project would also plant shade trees throughout the project area, which would assist in mitigating the urban heat island effect that may intensify with the projected increase in extreme heat days.

Fire risk data for the State of California has been projected for the years 2020, 2050, and 2085. The data models the areas within the State that are projected to experience increases in area burned compared to the expected burn rate without climate change. Based on these maps, the project is not located within an area projected to experience greater than expected wildland fire risks (Cal-Adapt 2017a). However, wildfires within the Sierra Nevada and areas outside the County affect air quality in Sacramento County. Wildland fires produce substantial emissions of particulate matter (smoke, soot), which may cause health effects including restricted breathing and aggravation of existing respiratory and cardiovascular diseases in the short-term, and alterations to immune systems and cancer from chronic exposure. Particulate matter from wildfire dissipates throughout the Central Valley degrading air quality conditions for short or extended periods of time. The duration of wildfire-related particulate matter in the County's air is linked to wind patterns originating from the Sacramento-San Joaquin Delta. Colloquially known as the "Delta Breeze," oceanic winds are channeled through the Delta into Sacramento County, and help disperse air pollutants north of the Sacramento Valley; however, during about half of the days from July to September, a phenomenon called the "Schultz Eddy" prevents this from occurring. These natural phenomena affect the severity of wildfire-related air pollution in Sacramento County (SMAQMD 2016). For example, during the summers of 2013 through 2015, several wildfire incidents occurred in Northern California that increased levels of particulate matter within Sacramento County.

Sacramento Metropolitan Fire District (Metro Fire) is a combination of 16 smaller fire departments in the Sacramento area. Metro Fire's Community Wildfire Protection Plan (CWPP) works to improve the resiliency of the Sacramento area to wildfires. This is achieved through identifying community wildfire risk, delineating the wildland/urban interface, implementing vegetation best management practices, and providing education and outreach (Metro Fire 2012).

The American River Parkway (ARP) Plan was adopted by the City of Sacramento, Sacramento County, the City of Rancho Cordova, the Sacramento Area Flood Control District, and the State of California Legislature and guides all uses and activities allowed in the 22-mile long American River Parkway. The American River Parkway Foundation proposed a project to develop an ARP Resource Management Plan (RMP). With funding, the RMP will coordinate with County and City departments and partners in reducing fire fuels, sustaining habitat, removing invasive species, advancing fire resilient plantings/landscape, and amend the ARP Plan as needed to support resource management and wildfire prevention.

The City of Sacramento General Plan 2035 includes the following policies in the Public Health and Safety element related to addressing wildfires and mitigating their risks (City of Sacramento 2015):

- ▲ PHS 2.2.7 Wildland Hazards on City-Owned Spaces. The City shall continue to remove excessive/overgrown vegetation (e.g., trees, shrubs, weeds) and rubbish from City-owned property to prevent and minimize fire risks to surrounding properties.
- ▲ PHS 2.2.8 Wildland Hazards on Private Properties. The City shall continue to require private property owners to remove excessive/overgrown vegetation (e.g., trees, shrubs, weeds) and rubbish to the satisfaction of the Fire Department to prevent and minimize fire risks to surrounding properties.

Through Metro Fire's CWPP, the ARP Plan and RMP, and the policies listed in the City's General Plan, the project is not considered to be located in an area with a substantial risk to wildland fires or hazards as programs and policies are in place to address such risks.

The City of Sacramento would be the responsible water purveyor for the project and has prepared a Water Supply Assessment to demonstrate that the planned water supplies of the City are sufficient to meet the demands of the project in addition to the existing and projected water supply obligations of the City. Water

supply was evaluated for normal, single-dry, and multiple-dry years. The City's 2015 Urban Water Management Plan projects and evaluates water demands for the City's sphere of influence, which includes the project. The estimated project water demand at build-out is 1,941 acre-feet per year. The City's retail water demand for 2020 is anticipated to be 122,229 acre-feet, while the City's water supply for 2020 is estimated to be 275,917 acre-feet, meaning it would be within the City's water supplies for normal, dry year, and multiple-dry year conditions. The City has a contract with the U.S. Bureau of Reclamation which, in conjunction with the City's water rights, provides the City with a long-term reliable and secure surface water supply source.

Further, the Sacramento Groundwater Authority has identified that groundwater supplies in the North American Subbasin is within its sustainable yield and is not expected to approach its average annual sustainable yield with new water demands caused by the project. The surface and groundwater supplies remain reliable and sustainable in the long term and the availability of water to the project would not change due to changes in the climate.

With regards to increases in flood risk, the project is not located in a coastal zone where an increased threat of flooding may occur due to sea level rise (Cal-Adapt 2017b). However, Sacramento County is vulnerable to riverine flooding. Riverine flooding generally occurs as result of prolonged rainfall, or rainfall combined with snowmelt and/or already saturated soils from previous rain events. Riverine flooding can occur anytime from November through April, and is largely caused by heavy and continued rains. Intense storms may overwhelm local waterways, as well as threaten the integrity of flood control structures.

Sacramento County is considered highly likely to experience catastrophic flooding as a result of riverine flooding. Due to the City's relatively flat, generally low-lying terrain and numerous waterways, historically, flooding has constituted the most frequent natural hazard experienced by Sacramento County. While it is uncertain precisely how and to what extent climate change will affect flooding events in Sacramento County, it is reasonable to expect that an increase in flooding could have serious ramifications, because the area is already considerably vulnerable. More rapid and earlier snowmelt, or increased potential for high-intensity storm events, compared to historical trends, could potentially place additional strain on the components of flood control systems (e.g., levees, dams), and increase the likelihood of flooding in Sacramento County. The project area is located in an area zoned A99 by the U.S. Federal Emergency Management Agency, which means that enough progress had been made on the flood protection system at the time of the most recent map update (June 15, 2015) to determine that the area will have protection from the 100-year flood when construction is complete (although it currently does not). Thus, development of the project at the project area would be sufficiently protected by flood risk. Refer to Section 5.8, "Hydrology and Water Quality" for more details about flood protection around the project.

Based on currently-available data, the project is not located within an area projected to experience a substantial increase in wildland fire risk or flooding as a result of climate changes in the future. Further, water supply for the project would be adequate. The project would be able to deal with extreme heat effects through energy-efficient buildings and planting shade trees. Anticipated changes in future climate patterns are not anticipated to have any substantial effects on the project. This impact would be **less than significant**.

Mitigation Measures

No mitigation is required.

5.6.4 Cumulative Impacts and Mitigation Measures

As discussed above, impacts of greenhouse gas emissions and climate change are inherently cumulative because project emissions of GHGs by themselves would not be so substantial as to alter the global climate. Therefore, the analysis expands on project-specific impacts and discusses the project's GHG emissions in the context of the cumulative project list.

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5.7 HAZARDS AND HAZARDOUS MATERIALS

5.7.0 Introduction

This section analyzes the project's anticipated effects related to the potential presence of hazardous materials and conditions in the project area. Potential problems related to hazardous materials include water and soil contamination; health hazards from existing or historic land uses that utilize or generate these materials; and improper disposal of these materials by business, industry, and individual households. Fire protection issues are addressed in Section 5.10, Public Services.

In response to the Notice of Preparation (see Appendix A) comments expressing concern about exposure to electromagnetic fields to future residents from existing on-site powerlines were received. This issue is addressed in this section.

5.7.1 Environmental Setting

Six Phase I Environmental Site Assessments (ESAs) were conducted for parcels on the for parcels in the project area by Wallace, Kuhl & Associates in 2003 and 2005 (Wallace Kuhl and Associates 2003a, 2003b, 2003c, 2005a, 2005b, and 2005c). Together, these surveys cover the entirety of the project area; except the portion currently developed with school facilities. The Phase 1 ESAs investigated and evaluated the environmental condition of the project area and surrounding properties for evidence of potential soil or groundwater contamination resulting from current and former site activities. Each of the Phase 1 ESAs concluded that there was no obvious evidence of hazardous material contamination. A separate Phase 1 ESA for the Grant Joint Union High School District (GJUHSD) High School/Middle School site also concluded that there were no hazardous materials issues (Padre and Associates 2004).

There are two homes and associated outbuildings currently on the northern portion of the project area associated with Krumenacher Ranch, which was a former dairy. No evidence of contamination was identified during site investigations in 2005, although there is potential that remnants of a trash pile are located somewhere on the property (City of Sacramento. 2006). Another residence was previously located near the intersection of East Levee Road and Sorrento Road (City of Sacramento. 2006), but appears to have been removed during construction of the GJUHSD High School/Middle School. There is also an existing residence, and associated septic system and barn, in the central portion of the property. South of this residence, the central portion of the project area was historically used for dry farming. Soil sampling conducted in the central portion of the project area in 2005 found elevated levels of lead, arsenic, and organochlorine pesticides. However, these substances were identified at levels below those considered by the U.S. Environmental Protection Agency (EPA) to be hazardous to human health and the environment.

The southern portion of the project area is fallow and has been used for agriculture, including pasture land and growing hay. These types of land uses do not typically require applications of environmentally persistent pesticides. The potential for significant concentrations of residual agricultural chemicals existing in surficial soils is low. No facilities with known leaky storage tanks have been identified on the project area. The ESAs identified several on-site water wells, as well as on-site septic systems Existing utilities also include overhead wooden pole-mounted and tower-mounted electrical lines.

A 2016 search of databases maintained by DTSC and SWRCB that list sites that require or may require remediation, or that were remediated in the past, identified two sites near the project area that are under active investigation. Both sites are located on West Elkhorn Boulevard, immediately east of the Natomas East Main Drainage Canal.

- ▲ The former RC Collet Asphalt Batch Plant (900 W. Elkhorn Blvd., Rio Linda) was previously contaminated by a leaking underground storage tank. Based on sampling conducted in 2016, the California Leaking Underground Storage Tank Cleanup Fund and Sacramento County Environmental Management Department have determined that the case is eligible for No-Further-Action-Required status (Wallace Kuhl and Associates 2016). The asphalt plant is not considered a potential hazard because the appropriate regulatory agencies have determined that former contamination has been sufficiently remediated.
- ▲ The Central Valley Regional Water Quality Control Board recently recommended additional investigation of the John Taylor Fertilizers site (841 W. Elkhorn Blvd., Rio Linda) to assess the potential for groundwater contamination (Terrell 2016). The fertilizer plant is not considered a substantial hazard because it is separated from the project site by NEMDC, and because the groundwater gradient in the area is to the east.

Lead, Asbestos, and Other Hazardous Materials in Buildings

Hazardous materials are commonly found in building materials that may be affected during demolition activities associated with development of the project area. Prior to 1978, lead compounds were commonly used in interior and exterior paints. Prior to the 1980s, building materials often contained asbestos fibers, which were used to provide strength and fire resistance. In addition, other common items present in buildings, such as electrical transformers, fluorescent lighting, electrical switches, heating/cooling equipment, and thermostats, can contain hazardous materials that may pose a health risk if not handled and disposed of properly. Among these hazardous materials are polychlorinated biphenyls (PCBs), which were used in hundreds of industrial and commercial applications because of their non-flammability, chemical stability, high boiling point, and electrical insulating properties. Equipment on the project area that might contain PCBs includes electrical equipment and thermal insulation material (e.g., fiberglass, felt, foam, or cork). Older, pole-mounted electrical transformers can also contain PCBs.

Health Hazards Associated with Mosquitoes

The project area consists of several water features as well as rice crop activities that can serve as breeding habitat for mosquitoes. Mosquitoes are carriers of several diseases of concern including West Nile virus, malaria, and dengue. The Sacramento-Yolo Mosquito and Vector Control District (MVCD) utilize a variety of abatement efforts to control mosquito populations that include the use of biological agents (mosquito fish) and pesticides.

Emergency Response and Evacuation

At the County level, the Office of Emergency Services oversees the development of emergency plans that apply to the project area. Sacramento County's Evacuation Plan is an annex to the Sacramento County 2008 All-Hazards Emergency Operations Plan. The evacuation plan documents the agreed upon strategy for the County's response to emergencies that involve the evacuation of persons from an impacted area to a safe area. This involves coordination and support for the safe and effective evacuation of the general population, and for those who need additional support to evacuate.

The evacuation plan assumes that the majority of evacuees (80 percent) in an emergency situation would use privately-owned automobiles. Primary evacuation routes are established for each of the seven County Sheriff Districts. These include major interstates, highways, and primary arterials. Agencies supporting the Evacuation Movement Unit include the County Department of Transportation (DOT), Sacramento City DOT (if City is involved), California Department of Transportation (Caltrans), and Regional Transit (Sacramento County 2008).

Wildland Fire Hazard

The majority of the project area consists of agricultural fields, with a small portion of annual grasslands used for grazing along the northern border. The Krumenacher Ranch consists of a homestead, grazing lands with remnant vernal pool grassland topography to the west and agricultural fields to the east. These conditions also exist north and east of the project area. West Elkhorn Boulevard and Sorento Road provide fuel breaks

from off-site wildland fire hazards. On-site habitat conditions present wildland fire hazard potential to existing residences to west and east and businesses to the south.

Electromagnetic Fields

High-voltage power lines traverse the eastern part of the project area, in a north-south direction. Two sets of steel lattice towers supporting double-circuit 230 kilo volt (kV) lines owned by the Western Area Power Administration (WAPA) and a 115-kV line owned by Sacramento Municipal Utility District (SMUD) are located within a 250-foot powerline easement. The primary concern associated with transmission lines are potential adverse health effects because of exposure to electromagnetic fields (EMFs) from overhead power lines.

EMF are invisible lines of force surrounding any electrical wire or device. EMF consist of two components: the electric field (which is the result of voltage) and the magnetic field (which is the result of current flow).

Reports by the National Research Council/National Academy of Sciences, American Medical Association, American Cancer Society, National Institute of Environmental Health Sciences, World Health Organization – International Agency for Research on Cancer, and the California EMF Program conclude that insufficient scientific evidence exists to warrant the adoption of specific health-based EMF mitigation measures (City of Sacramento 2006). The medical and scientific communities generally agree that the available research evidence has not demonstrated that EMF creates a health risk. However, they also agree that the evidence has not dismissed the possibility of such a risk (City of Sacramento 2006).

5.7.2 Regulatory Setting

HAZARDOUS SUBSTANCES DEFINED

Under Title 22 of the California Code of Regulations (CCR), the term hazardous substance refers to both hazardous materials and hazardous wastes, and both are classified according to four properties: toxicity, ignitability, corrosiveness, and reactivity (CCR Title 22, Chapter 11, Article 3). A hazardous material is defined as a substance or combination of substances that may cause or significantly contribute to an increase in serious, irreversible, or incapacitating illness, or may pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, or disposed of, or otherwise managed. Hazardous wastes are hazardous substances that no longer have practical use, such as materials that have been discarded, discharged, spilled, or contaminated or are being stored until they can be disposed of properly (CCR Title 22, Chapter 11, Article 2, Section 66261.10). Soil that is excavated from a site containing hazardous materials is a hazardous waste if it exceeds specific CCR Title 22 criteria. While hazardous substances are regulated by multiple agencies, as described below in Section 5.7.2, Regulatory Framework, cleanup requirements of hazardous wastes are determined on a case-by-case basis according to the agency with lead jurisdiction over the project.

Public health is potentially at risk whenever hazardous materials are, or will, be used. It is necessary to differentiate between the “hazard” of these materials and the acceptability of the “risk” they pose to human health and the environment. A hazard is any situation that has the potential to cause damage to human health and the environment. The risk to health and public safety is determined by the probability of exposure, in addition to the inherent toxicity of a material (California Department of Toxic Substances Control [DTSC] 2016).

Factors that can influence the health effects when human beings are exposed to hazardous materials include: the dose the person is exposed to, the frequency of exposure, the duration of exposure, the exposure pathway (route by which a chemical enters a person’s body), and the individual’s unique biological susceptibility.

FEDERAL

Resource Conservation and Recovery Act

The Resource Conservation and Recovery Act was designed to protect human health and the environment, reduce or eliminate the generation of hazardous waste, and conserve energy and natural resources. EPA has authorized the California Department of Toxic Substances Control (DTSC) to enforce hazardous waste laws and regulations in California. Under the Resource Conservation and Recovery Act, DTSC has the authority to implement permitting, inspection, compliance, and corrective action programs to ensure that people who manage hazardous waste follow state and federal requirements. Requirements place “cradle-to-grave” responsibility for hazardous waste disposal on the shoulders of hazardous waste generators. Generators must ensure that their wastes are disposed of properly, and legal requirements dictate the disposal requirements for many waste streams (e.g., banning many types of hazardous wastes from landfills).

Superfund Amendments and Reauthorization Act

The Superfund Amendments and Reauthorization Act of 1986 (Public Law 99-499; USC Title 42, Chapter 116), also known as the Emergency Planning and Community Right-to-Know Act (EPCRA) of 1986, imposes hazardous materials planning requirements to help protect local communities in the event of accidental release. EPCRA requires states and local emergency planning groups to develop community emergency response plans for protection from a list of extremely hazardous substances (40 CFR 355 Appendix A). In California, EPCRA is implemented through the California Accidental Release Prevention Program.

Hazardous Materials Transportation Act

The U.S. DOT has developed regulations in Titles 10 and 49 of the Code of Federal Regulations (CFR) pertaining to the transport of hazardous substances and hazardous wastes. The Hazardous Materials Transportation Act is administered by the Research and Special Programs Administration of the U.S. DOT. The act provides the U.S. DOT with a broad mandate to regulate the transport of hazardous materials, with the purpose of adequately protecting the nation against the risk to life and property that is inherent in the commercial transportation of hazardous materials. The U.S. DOT regulations that govern the transportation of hazardous materials are applicable to any person who transports, ships, causes to be transported or shipped, or who is involved in any way with the manufacture or testing of hazardous materials packaging or containers.

Occupational Safety and Health Standards

The federal Occupational Safety and Health Administration (OSHA) is the agency responsible for assuring worker safety in the handling and use of chemicals identified in the Occupational Safety and Health Act of 1970 (Public Law 91-596, 9 USC 651 et seq.). OSHA has adopted numerous regulations pertaining to worker safety, contained in CFR Title 29. These regulations set standards for safe workplaces and work practices, including standards relating to the handling of hazardous materials and those required for excavation and trenching.

STATE

Environmental Protection Agency

The California Environmental Protection Agency (Cal-EPA) establishes rules governing the use of hazardous materials and the management of hazardous waste. Within Cal-EPA, DTSC has primary regulatory responsibility, with delegation of enforcement to local jurisdictions that enter into agreements with the state agency, for the management of hazardous materials and the generation, transport, and disposal of hazardous waste under the authority of the Hazardous Waste Control Law.

California Government Code Section 65962.5

California Government Code Section 65962.5 requires DTSC to compile and maintain lists of potentially contaminated sites located throughout the State of California. This “Cortese List” includes hazardous waste

and substance sites from DTSC's database, leaking UST sites from the SWRCB's database, solid waste disposal sites with waste constituents above hazardous waste levels outside of the waste management unit, Cease and Desist Orders and Cleanup and Abatement Orders concerning hazardous wastes, and hazardous waste facilities subject to corrective action pursuant to Section 25187.5 of the Health and Safety Code.

Hazardous Waste Control Act

The Hazardous Waste Control Act regulates the identification, generation, transportation, storage, and disposal of materials the State of California has deemed hazardous.

California Department of Industrial Relations

The California Department of Industrial Relations regulates implementation of worker health and safety in California. The Department of Industrial Relations includes the Division of Occupational Safety and Health, which acts to protect workers from safety hazards through its California OSHA (Cal/OSHA) program and provides consultative assistance to employers. California standards for workers dealing with hazardous materials are contained in Title 8 of the California Code of Regulations and include practices for all industries (General Industrial Safety Orders), and specific practices for construction and other industries. Workers working with hazardous wastes, as might be encountered during excavation of contaminated soil, must receive specialized training and medical supervision according to the Hazardous Waste Operations and Emergency Response regulations. Additional regulations have been developed for construction workers potentially exposed to lead and asbestos. Cal/OSHA enforcement units conduct on-site evaluations and issue notices of violation to enforce necessary improvements to health and safety practices.

California Public Resources Code Section 21151.4

California Public Resources Code (PRC) Section 21151.4 requires the lead agency to consult with any school district with jurisdiction over a school within 0.25-mile of a project about potential impacts on the school if the project might reasonably be anticipated to emit hazardous air emissions, or handle an extremely hazardous substance or a mixture containing an extremely hazardous substance.

Construction General Permit Order 2009-009-DWQ

The State Water Resources Control Board's General Permit regulates storm water runoff from construction sites. Projects that disturb more than 1 acre, as well as those projects that disturb less than one acre but are part of a larger plan of development that in total disturbs more than one acre, are required to obtain coverage under the General Permit for Discharges of Storm Water Associated with Construction Activity. To obtain coverage, dischargers electronically file the Permit Registration Documents, which includes a Notice of Intent and Storm Water Pollution Prevention Plan (SWPPP).

LOCAL

Certified Unified Program Agency

Cal-EPA designates specific local agencies as Certified Unified Program Agencies (CUPAs). Sacramento County's Environmental Management Department (EMD) has been designated as the Sacramento region's CUPA. The program is housed within EMD's Environmental Compliance Division. CUPA Programs are administered throughout the County of Sacramento and its incorporated cities. These programs include:

- ▲ underground storage of hazardous substances,
- ▲ hazardous materials business plan requirements,
- ▲ hazardous waste generator requirements,
- ▲ California Accidental Release Prevention program,
- ▲ Uniform Fire Code hazardous materials management plan, and
- ▲ aboveground storage tanks (Spill Prevention Control and Countermeasures Plan only).

Sacramento County Multi-Hazard Disaster Plan

The Sacramento County Multi-Hazard Disaster Plan (SCMDP) was established to address planned response to extraordinary emergency situations associated with natural disasters and technological incidents. The Plan focuses on operational concepts related to large-scale disasters, which can pose major threats to life and property requiring unusual emergency responses. The Plan was designed to include Sacramento County as part of the California Standardized Emergency Management System (SEMS), which assigns responsibilities to support implementation of the Plan and to ensure successful response during a major disaster. The Plan also established the following emergency management goals:

- ▲ Provide effective life safety measures and reduce property loss;
- ▲ Provide for the rapid resumption of community services and businesses; and
- ▲ Provide accurate documentation and records required for cost recovery efforts.

Sacramento County Area Plan

The Sacramento County Environmental Management Department (SCEMD) established the Sacramento County Area Plan (SCAP) as a guideline for hazardous material related accidents or occurrences. The SCAP is used for making initial decisions at a hazardous materials incident.

City of Sacramento 2035 General Plan

The City of Sacramento 2035 General Plan includes a Public Health and Safety element that establishes policies regarding the handling and clean-up of potentially hazardous substances, as well as emergency response and vector control. Policies that may apply to the project include the following:

- ▲ Policy PHS 3.1.1. Investigate Sites for Contamination. The City shall ensure buildings and sites are investigated for the presence of hazardous materials and/or waste contamination before development for which City discretionary approval is required. The City shall ensure appropriate measures are taken to protect the health and safety of all possible users and adjacent properties.
- ▲ Policy PHS 3.1.3. Household Hazardous Waste Collection Programs. The City shall continue to provide household hazardous waste collection programs to encourage proper disposal of products containing hazardous materials or hazardous wastes.
- ▲ Policy PHS 3.1.4. Transportation Routes. The City shall restrict transport of hazardous materials within Sacramento to designated routes.
- ▲ Policy PHS 4.1.1. Multi-Hazard Emergency Plan. The City shall maintain and implement the Sacramento County Multi-Hazard Emergency Plan to address disasters such as earthquakes, flooding, dam or levee failure, hazardous material spills, epidemics, fires, extreme weather, major transportation accidents, and terrorism.

5.7.3 Impacts and Mitigation Measures

SIGNIFICANCE CRITERIA

For the purposes of this Draft EIR, an impact related to hazards and hazardous materials would be considered significant if it would result in any of the following impacts (based on CEQA Guidelines Appendix G):

- ▲ Create a significant hazard to the public or the environment through the routine transport, use or disposal of hazardous materials.
- ▲ Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.

- ▲ Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances or waste within 0.25 mile of an existing or proposed school.
- ▲ Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment.
- ▲ Impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan.
- ▲ Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.

METHODS AND ASSUMPTIONS

This section analyzes the impacts associated with the project and the risk of upset resulting from hazardous substances, waste contamination, or other potential threats to public safety that may exist in the project area. This analysis is based on information obtained from the Phase I ESAs and searches of publicly-accessible databases maintained by DTSC and SWRCB. The evaluation assumes that construction and development under the project would adhere to the latest federal, State, and local regulations, and conform to the latest required standards in the industry, as appropriate for individual development projects.

While not included in the Panhandle PUD, the future development of the Krumenacher Ranch site is addressed in the impact analysis below.

ISSUES DISMISSED FROM FURTHER CONSIDERATION

The project area is located 2.0 miles from Rio Linda Airport, 3.75 miles from McClellan Airfield, and 4.5 miles from the Sacramento International Airport. The project is outside of the planning areas and noise contours of these airports. Thus, the project would not result in any impacts related to airport facilities and will not be further addressed in this Draft EIR.

PROJECT IMPACTS AND MITIGATION MEASURES

Impact 5.7-1: Create a significant hazard through the routine transport, use, or disposal of hazardous materials

Development and operation of the project would result in transport, use, and disposal of hazardous materials to and from the project area. Adherence to existing regulations and compliance with safety standards related to the transport, use, storage, and disposal of hazardous materials would reduce the hazards associated with these activities. This would be a **less-than-significant** impact.

Planned development would temporarily increase the regional transport, use, storage, and disposal of hazardous materials and petroleum products (e.g., diesel fuel, lubricants, paints and solvents, and cement products containing strong basic or acidic chemicals) that are commonly used at construction sites. Hazardous waste generated during construction may consist of welding materials, fuel and lubricant containers, paint and solvent containers, and cement products containing strong basic or acidic chemicals. Although the transportation of hazardous materials could result in accidental spills, leaks, toxic releases, fire, or explosion, the U.S. DOT Office of Hazardous Materials Safety prescribes strict regulations for the safe transportation of hazardous materials, as described in Title 49 of the CFR. These standard accident and hazardous materials recovery training and procedures are enforced by the State and followed by private State-licensed, certified, and bonded transportation companies and contractors.

In addition, SWRCB Construction General Permit requires spill prevention and containment plans to avoid spills and releases of hazardous materials and wastes into the environment. Inspections would be conducted to verify consistent implementation of general construction permit conditions and best management practices (BMPs) to avoid and minimize the potential for spills and releases, and of the immediate cleanup and response thereto. BMPs include, for example, the designation of special storage areas and labeling, containment berms, coverage from rain, and concrete washout areas. Compliance with established regulations would minimize the potential risk of a spill or accidental release of hazardous materials during construction.

The most likely incidents involving construction-related hazardous materials are generally associated with minor spills or drips. Small fuel or oil spills are somewhat likely, but would have a negligible impact on public health. All hazardous materials would be stored, handled, and disposed of according to the manufacturers' recommendations, and any spills would be cleaned up in accordance with existing regulations. All hazardous materials spills or releases, including petroleum products such as gasoline, diesel, and hydraulic fluid, regardless of quantity spilled, must be immediately reported if the spill has entered or threatens to enter a water of the State, including a stream, lake, wetland, or storm drain, or has caused injury to a person or threatens injury to public health. Immediate notification must be made to the local emergency response agency, or 911 and the Governor's Office of Emergency Services Warning Center. For non-petroleum products, additional reporting may be required if the release exceeds federal reportable quantity thresholds over a release period of 24 hours as detailed in Section 25359.4 of the California Health and Safety Code and Title 40, Section 302.4 of the CFR.

While the residential, commercial, and office mixed-uses that could be developed are not expected to introduce any unusual hazardous materials to the area, some typical hazardous materials would be used in varying amounts during operation of the proposed development. Materials would consist mostly of typical household-type cleaning products and maintenance products. Additionally, grounds and landscape maintenance within the project area could utilize a wide variety of commercial products formulated with hazardous materials (including fuels, cleaners and degreasers, solvents, paints, lubricants, adhesives, sealers, and pesticides/herbicides).

The operation of businesses that use, create, or dispose of hazardous materials is regulated and monitored by federal, State, and local laws and policies to provide a high level of protection to the public and the environment. Hazardous materials are required to be stored in designated areas designed to prevent accidental release to the environment. California Building Code requirements prescribe safe accommodations for materials that present a moderate explosion hazard, high fire or physical hazard, or health hazards. Compliance with all applicable federal and state laws related to the storage of hazardous materials would maximize containment and provide for prompt and effective clean-up if an accidental release occurs.

The project would include activities that use hazardous materials in both the construction and operational phases of the development. Because the hazardous materials use during the construction and operation of the project must comply with federal, State, and local regulations regarding the handling and transportation of such materials, this impact would be **less than significant**.

Mitigation Measures

None required.

Impact 5.7-2: Accidental Release of Hazardous Materials

Demolition activities and development of the project area could result some potential for reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment. However, implementation of existing federal, State, and local regulations pertaining to demolition and handling of hazardous substances would reduce the potential for accidental hazardous material releases. This would be a **less-than-significant** impact.

Existing structures on the site (Krumenacher Ranch) are believed to contain hazardous materials, including asbestos, lead, and heavy metals – primarily because many of the existing structures were constructed when the use of these materials was not heavily restricted. Demolition of structures could result in inadvertent release or improper disposal of debris containing potentially hazardous materials; however, federal, state, and local regulations have been developed to address potential impacts related to the handling and disposal of hazardous materials during demolition. Potential impacts would be minimized through adherence to regulatory standards that prescribe specific methods of material characterization and handling.

Federal and state regulations govern the demolition of structures where materials containing lead and asbestos are present. Asbestos and lead abatement must be performed and monitored by contractors with appropriate certifications from the State Department of Health Services. In addition, Cal/OSHA has regulations concerning the use of hazardous materials, including requirements for safety training, availability of safety equipment, hazardous materials exposure warnings, and emergency action and fire prevention plan preparation. Cal/OSHA enforces the hazard communication program regulations, which include provisions for identifying and labeling hazardous materials, describing the hazards of chemicals, and documenting employee-training programs. All demolition that could result in the release of lead and/or asbestos must be conducted according to Cal/OSHA standards and Sacramento Metropolitan Air Quality Management District Rule 902, Asbestos. Specific actions required by law include the following.

- **Asbestos.** Prior to demolition, all structures would be tested for the presence of asbestos-containing materials. Any asbestos would be removed and disposed of by an accredited contractor in compliance with federal, state, and local regulations. Compliance with these regulations would result in the safe disposal of asbestos-containing materials.
- **Lead-based paint or other coatings.** A survey for indicators of lead-based coatings would be conducted before demolition to further characterize the presence of lead on the project area. For the purposes of compliance with Cal/OSHA regulations, all coated surfaces would be assumed to potentially contain lead. There is also a potential for soil contamination because of deposition of deteriorated (i.e., flaked, peeled, chipped) lead-based paint adjacent to structures where lead-based exterior paints were used. Loose or peeling paint may be classified as a hazardous waste if concentrations exceed total threshold limits. Cal/OSHA regulations require air monitoring, special work practices, and respiratory protection during demolition where even small amounts of lead have been detected.
- **Heavy metals and PCBs.** Spent florescent light bulbs and ballasts, thermostats, and other electrical equipment may contain heavy metals, such as mercury, or PCBs. If concentrations of these materials exceed regulatory standards, they would be handled as hazardous waste in accordance with hazardous waste regulations.

In addition to the hazards associated with demolition, grading and excavation activities may expose construction workers and the public to hazardous substances present in the soil or groundwater that are not anticipated based on information about existing conditions. Potential hazards to human health include ignition of flammable liquids or vapors, inhalation of toxic vapors in confined spaces such as trenches, and skin contact with contaminated soil or water. Preliminary research and limited soil sampling have not identified contamination of project area soils, and none of the Phase I ESAs conducted for various parcels within the project area recommended additional assessment of the property. Any discovered contamination would be subject to review and remediation in coordination with SCEMD and the Regional Water Quality Control Board subject to applicable regional, state, and federal regulations. The septic systems and water wells identified in the project area would be abandoned in accordance with existing regulations, and are not anticipated to present an environmental concern.

If an unidentified underground storage tank were uncovered or disturbed during construction activities, it would be sealed and abandoned in place or removed. Potential risks, if any, posed by underground storage tanks would be minimized by managing the tank according to Sacramento County standards, as enforced and monitored by SCEMD. The extent to which groundwater may be affected depends on the type of contaminant,

the amount released, and depth to groundwater at the time of the release. If groundwater contamination is identified, remediation activities would be required the Regional Water Quality Control Board.

As discussed above, although two sites with the potential to cause groundwater contamination were identified near the project area, neither of these sites are reasonably likely to affect conditions on the project area. The asphalt plant is not considered a potential hazard because the appropriate regulatory agencies have determined that former contamination has been sufficiently remediated. The fertilizer plant is not considered a substantial hazard because it is separated from the project area by NEMDC, and because the groundwater gradient in the area is to the east.

Implementation of the existing federal, State, and local regulations identified above would reduce the potential for accidental hazardous material releases such that this impact would be **less than significant**.

Mitigation Measures

None required.

Impact 5.7-3: Hazards Associated with Mosquitoes

The Panhandle PUD would include detention facilities that could attract mosquitoes and other water-borne vectors. Without specific controls in place, these features could create a nuisance or hazardous condition. This would be a **potentially significant** impact.

The Panhandle PUD site design includes an on-site detention basin. The detention basin (if not properly designed and operated) could attract mosquitoes that could expose project residents to several diseases of concern including West Nile virus, malaria, and dengue. The Sacramento-Yolo Mosquito and Vector Control District requests projects with water features incorporate best management practices or other preventative biological measures to reduce mosquito populations, production rates, or the timing of mosquito hatching. The project does not incorporate any features for the on-site detention basin to address mosquitoes. This impact would be **potentially significant**.

Mitigation Measure 5.7-3 Develop and implement a Vector Control Plan

As part of site-specific design of the Panhandle PUD detention basin and other water/drainage features, a Vector Control Plan shall be developed to the satisfaction of the Sacramento-Yolo Mosquito and Vector Control District. The Vector Control Plan shall specify mosquito control measures to be used (e.g., biological agents, pesticides, larvicides, circulating water), as well as identification of maintenance program to ensure control measures are maintained. Evidence of Sacramento-Yolo Mosquito and Vector Control District's design approval shall be provided to the City of Sacramento prior to improvement plan approval for detention basin and water/drainage features.

Significance after Mitigation

Implementation of the above mitigation measure would reduce potential public health risks consistent with Sacramento-Yolo Mosquito and Vector Control District guidelines. Thus, this impact would be reduced to a **less-than-significant** level.

Impact 5.7-4: Hazards Associated with Electromagnetic Fields

The Panhandle PUD would place residential uses and a school site near existing high-voltage power lines, which are a source of electromagnetic fields. However, the siting of the proposed school facilities would comply with the setback requirements of the California Department of Education. Further, there is no available data that demonstrates there are health risks associated with EMF exposure. Therefore, this has been determined by the City to be a **less-than-significant** impact.

Implementation of the Panhandle PUD would place residential and public school facilities near two sets of steel lattice towers supporting double-circuit 230 kV lines owned by the WAPA and a 115-kV line owned by SMUD. The primary concern associated with transmission lines are possible adverse health effects because of exposure to EMFs from overhead power lines. The proposed Panhandle PUD design would place residential uses within 50 feet of power lines and the proposed elementary school site within 400 feet from power lines (consistent with guidance from California Department of Education). As previously discussed, reports by the National Research Council/National Academy of Sciences, American Medical Association, American Cancer Society, National Institute of Environmental Health Sciences, World Health Organization – International Agency for Research on Cancer, and the California EMF Program conclude that insufficient scientific evidence exists to warrant the adoption of specific health-based EMF mitigation measures (City of Sacramento 2006). The medical and scientific communities generally agree that the available research evidence has not demonstrated that EMF creates a health risk. This impact is considered **less than significant**.

Mitigation Measures

No mitigation measure is required.

Impact 5.7-5: Impair Implementation of, or Physically Interfere with, Adopted Emergency Response or Evacuation Plans

The Panhandle PUD would provide multiple roadway access routes for the project area and would not interfere with emergency response or evacuation plans. This would be a **less-than-significant** impact.

Sacramento County's Evacuation Plan identifies key evacuation routes as major interstates, highways, and major roadways. The plan indicates that specific evacuation routes would be established for individual situations based on the geographical location and magnitude of the emergency, as well as the time of day and day of the week. During an evacuation, County DOT traffic engineers would be able to quickly calculate traffic flow capacity and decide which of the available traffic routes should be used to move people in the correct directions (Sacramento County 2008:5-4).

During construction, it may be necessary to restrict travel on roadways with and adjacent to the project area to facilitate construction activities such as demolition, material hauling, construction, staging, and modifications to existing infrastructure. Such restrictions could include lane closures, lane narrowing, and detours, which would be temporary but could continue for extended periods of time. Lane restrictions, closures, and/or detours could cause an increase in traffic volumes on adjacent roadways. In the event of an emergency, emergency response access or response times could be adversely affected. To minimize interference with emergency response and evacuation, the City requires all development projects to prepare Traffic Management Plans for construction activities, as required by Sections 12.20.020 and 12.20.030 of the Sacramento City Code. Compliance would minimize the potential for construction impacts to interfere with emergency response.

As identified in Exhibit 3-4, the Panhandle PUD would provide a new east-west roadway connections (Faletto Avenue, Club Center Drive, Street "F," Barros Drive, Aimwell Avenue, and Mayfield Avenue). These roadway connections would provide for improved emergency access connection in the project area and would not interfere with emergency response. The project would not modify the existing roadway network such that emergency access along existing roadways would be impaired and would not be anticipated to physically interfere with adopted emergency response plans or procedures. Thus, this impact would be **less than significant**.

Mitigation Measures

None required.

Impact 5.7-6: Expose people or structures to wildland fire hazard

Development of the project area would reduce wildland fire hazards in the area by converting open grassland areas to urban uses. This is a **less-than-significant** impact.

Development of the project area would convert the project area from grassland and agricultural conditions to urban uses that would remove on-site wildland fire hazard. The project would also improve roadway access and extend water supply infrastructure that would improve fire protection services in the area. Thus, this impact is considered **less than significant**.

Mitigation Measures

None required.

5.7.4 Cumulative Setting, Impacts and Mitigation Measures

CUMULATIVE SETTING

Hazardous materials, human health, and safety impacts as described in CEQA Guidelines Appendix G are generally site-specific and not cumulative by nature. The potential cumulative impacts because of the increased use of hazardous materials resulting from proposed development include: air quality, water quality, and fire. The cumulative impacts associated with affected resources, such as air and water, are analyzed in the applicable technical sections of this Draft EIR.

CUMULATIVE IMPACTS AND MITIGATION MEASURES

Impact 5.7-7: Cumulative Hazards and Hazardous Material Impacts

Implementation of the project in combination with potential development in the region would not contribute cumulative hazard impacts as such impacts are site-specific. This contribution would be **less than cumulatively considerable**.

As identified under Impacts 5.7.1 through 5.7.6, the project's public health hazard impacts related to the use, handling, and transportation of hazardous materials and potential exposure to EMFs or mosquito-borne diseases, are associated with site-specific issues that are not connected to cumulative conditions in the region. On a cumulative basis, hazardous impacts would be less-than-significant.

There is no existing significant adverse cumulative condition relating to hazards and hazardous materials in the vicinity of the project and, alone, the incremental impacts of the project would not cause a significant adverse cumulative impact. Further, construction activities associated with the project would not substantially increase the hazard potential in the study area, and operation of the project would not cause a significant adverse cumulative impact. Mitigation is recommended to address the project's site-specific potential mosquito and vector control impacts to a less-than-significant level. As a result, the project **would not have a considerable contribution** such that a new significant cumulative public health hazard impacts would occur.

Mitigation Measures

None required.

5.8 HYDROLOGY AND WATER QUALITY

This section describes watershed features within the project area and addresses potential issues associated with storm drainage and flooding, alteration of drainage patterns, erosion, storm water quality, and groundwater. The analysis is based on available technical data, including the Master EIR prepared for the City of Sacramento 2035 General Plan Update (City of Sacramento 2014) and a drainage study prepared for the Panhandle Planned Unit Development (PUD) (Panhandle Owner's Group 2016) (see Appendix E).

The following comments were received in response to the Notice of Preparation (see Appendix A) that are addressed in this section:

- ▲ the Draft EIR should evaluate impacts on surface water and groundwater quality;
- ▲ various permits, including construction stormwater, municipal storm sewer system, and Clean Water Act permitting;
- ▲ project should be designed with a sufficient setback from toe of levee to allow for anticipated levee improvements for 200-year protection;
- ▲ levee setback area should only include public land uses with restrictions to ensure flood protection facilities not compromised;
- ▲ existing public roadway on top of East Levee Road should be relocated to landside of levee;
- ▲ drainage study is required to identify impact on interior drainage system; and
- ▲ further impacts on existing drainage issues on southeastern corner of project area (Del Paso Road/Sorento Road intersection).

5.8.1 Environmental Setting

HYDROLOGY AND DRAINAGE

Regional Hydrology

The project area is situated in the lower Sacramento River Valley approximately 3.5 miles east of the Sacramento River. The American River, a major tributary to the Sacramento River flows westerly toward the Sacramento River along an alignment that is roughly 2.5 miles south of the annexation area. The confluence of the American River with the Sacramento River is located about 3 miles southwest of the project area (see Exhibit 3-2). Flood control along both of these rivers in the area is provided by levee systems.

Flows in the Sacramento River are, in part, controlled by upstream dams at Lake Shasta, Lake Oroville, Whiskeytown Lake, and several other upstream reservoirs. Flows in the Sacramento River are also regulated by the Sutter Bypass, the Yolo Bypass, and the Sacramento Bypass as they pass through the Sacramento area. During periods of higher flows, excess flow is released into these bypasses to reduce the flow rates within the river itself. Flows in the American River are regulated by nearby Folsom Dam to the east. Peak flows in the Sacramento River and the American River result from a combination of winter rainstorms, winter and spring snowmelt, and releases from upstream dams.

The project area is also located in the lower portions of the watersheds for Dry Creek, Rio Linda Creek, and Magpie Creek. These existing creeks flow through the North Highlands and Rio Linda areas of the Sacramento metropolitan area in Sacramento County. East of the project, these creeks are intercepted by

Steelhead Creek (also known as the Natomas East Main Drainage Canal [NEMDC]) that collects and delivers their flows to the American River to the south.

Climate within and around the project area is characterized by hot, dry summers and moderately cool, wet winters. Average annual rainfall in the City of Sacramento is approximately 17.2 inches. Rainfall depth for a 100-year return period 24-hour storm event is approximately 4.25 inches. The Sacramento area usually experiences the majority of its storm events from early November through early April. Snowfall is rare, seldom lasting for more than 24 hours. For temperature extremes, summer average high temperatures reach 93.2 degrees during the month of July and average low temperatures drop to 37.7 degrees during the month of January (Western Region Climate Center. Date unknown).

Surface Hydrology and Drainage

The project area is in the North Natomas Comprehensive Drainage Plan (CDP) Service Area and Northgate Business Park Drainage Assessment District. Reclamation District 1000 (RD1000) is the principal agency responsible for conveying and pumping storm runoff from the Natomas Basin. Runoff from the urbanized areas of the basin is collected, conveyed, and pumped to RD1000 facilities (i.e., canals). The storm runoff is then conveyed in the RD1000 channel system to the RD1000 pumping facility located on the Garden Highway. At this point, the storm runoff is pumped into the Sacramento River.

In general, drainage in the project area trends east to west, in conformance with local topographic conditions, with the exception of lateral storm drains, interceptor canals, and outfalls. Drainage facilities on the project area include drainage canals, culverts, and two 60-inch drainage pipelines that discharge off-site. In addition to these facilities, a portion of the eastern boundary includes the North Natomas Levee associated with the NEMDC.

Flood Hazards

Natomas Basin Levee System

In December of 2008, the Flood Insurance Rate Maps (FIRMs) for the Natomas Basin were remapped by Federal Emergency Management Agency (FEMA). The area, which was previously understood to offer between 100-year and 500-year protection (Shaded X Zone) was reclassified as within the 100-year flood hazard zone (AE Zone) after the Corps decertified the levee system protecting the basin. The remap required mandatory flood insurance for property owners and meant all new construction or substantial improvements to structures had to meet a 33-foot base flood elevation requirement. Prior to the Corps decertification, the Sacramento Area Flood Control Agency (SAFCA) implemented the Natomas Levee Improvement Program (NLIP) to upgrade the levee system protecting the Natomas Basin. Construction on the NLIP began in 2007.

Following 18 miles of levee improvements efforts by SAFCA and the California Department of Water Resources that began in 2007 and the congressional authorization in June 2014, the Natomas Basin, as of June 2015, is now mapped as Zone A99. In June 2015, the City began processing applications and issuing building permits for projects in the Natomas Basin. Flood insurance is still mandatory.

The principal objective of the NLIP is providing 200-year flood protection to the Natomas Basin. The remaining 24 miles of improvements to the Natomas Basin will be constructed by the USACE under the June 2014 congressional authorization. It is anticipated that USACE will start work in late 2017 along the southern portion of the basin between Gateway Oaks Drive and Northgate Boulevard.

Flood Risk from Dam Failure

For planning purposes, the State of California Office of Emergency Services (OES), with information from the U.S. Bureau of Reclamation and the California Department of Water Resources (DWR), has the responsibility to provide local governments with critical hazard response information, including flooding from dam inundation. The OES dam inundation map for Folsom Dam shows that a majority of the Sacramento area would be inundated with water beyond the capacity of the current flood control levees along the river if the dam failed. Areas in Natomas may also be affected by floodwaters if failure of the earthen dikes north of

Folsom Dam occurred. The Sacramento Municipal Utility District inundation map indicates that a failure of the Rancho Seco Dam would flow to the Laguna Creek Basin and stop approximately at Stockton Boulevard (City of Sacramento 2014).

Due to the distance between the site and large bodies of water, tsunamis and seiches do not present hazards to the project area.

Groundwater and Soils

The project area is located in the southwestern portion of the North American Subbasin (Basin 5-21.64), as defined by the California Department of Water Resources. This basin is designated as “high” prioritization by the California Department of Water Resources under California Statewide Groundwater Elevation Monitoring Program will be the initial prioritization when the Sustainable Groundwater Management Act. Although groundwater extraction is minimal on the project site (i.e., less than 2,500 acre feet in 2015), total groundwater extraction for the City of Sacramento service area that to the east, south, and west of the site are typified by much higher extraction rates (i.e., between 10,001 and 16,000 acre feet in 2015). Groundwater in the area generally flows at a low gradient to the east, where a regionally-extensive cone of depression is associated with groundwater pumping dating back to at least the 1950s. Groundwater elevations in the project area range from roughly 4 to 17 feet below the ground surface (Wallace-Kuhl & Associates 2003).

As described further in Section 5.5, “Geology, Soils, Mineral Resources, and Paleontology,” the project area is undeveloped, generally flat, and averages approximately 20 feet above mean sea level in elevation. Soils on the project site are generally clays, silts, and loams.

WATER QUALITY

Water quality is most affected by land development, erosion, and stormwater runoff. Constituents found in stormwater runoff can vary during a storm event, from event to event within a given area, and from area to area within a given watershed. Variances can be the result of differences in rainfall intensity, occurrence, geographic features, the land use of the area, as well as vehicle traffic and the percentage of impervious surfaces. Furthermore, sediment runoff from construction sites without adequate erosion control measures can contribute sediment and other pollutants to receiving waters.

Section 303(d) of the federal Clean Water Act (CWA) requires the identification of water bodies that do not meet water quality standards or are considered impaired (see Section 15.2, “Regulatory Setting,” below, for a more detailed discussion of the Section 303(d) process). The CWA requires states to develop total maximum daily loads (TMDLs) for waters on the 303(d) list, with oversight by the U.S. Environmental Protection Agency (EPA). A TMDL is a quantifiable assessment of potential water quality issues, contributing sources, and load reductions or control actions needed to restore or protect bodies of water.

Surface Water Quality

The project area does not include any substantial surface water features. However, as discussed above, surface water is discharged to the Sacramento River. The portion of the Sacramento River between Knights Landing in Yolo County and the Delta is designated as an impaired waterway by the State Water Resources Control Board under Section 303d of the Clean Water Act for the pesticides chlordane, dichlorodiphenyltrichloroethane, dieldrin; mercury (associated with abandoned mines within the watershed); polychlorinated biphenyls, and unknown toxicity (State Water Resources Control Board [SWRCB] 2012).

Groundwater Quality

Monitoring of groundwater quality in the City is associated with its utilization as a municipal water source. The Natomas Basin is within the North American Groundwater Subbasin of the Sacramento River. While groundwater quality in the North Natomas area is generally characterized as having good quality, the northern portion of the subbasin has been found to have high levels of total dissolved solids, chloride, sodium, bicarbonate, manganese and arsenic (City of Sacramento/Sacramento LAFCo 2006).

5.8.2 Regulatory Setting

FEDERAL

Clean Water Act

EPA is the lead federal agency responsible for water quality management. The Federal Water Pollution Control Act of 1977 (33 USC 1251 et seq.), commonly referred to as the CWA, is the primary federal law that governs and authorizes water quality control activities by EPA as well as the states. Various elements of the CWA address water quality. These are discussed below.

CWA Water Quality Criteria/Standards

Pursuant to federal law, EPA has published water quality regulations under Title 40 of the Code of Federal Regulations (CFR). Section 303 of the CWA requires states to adopt water quality standards for all surface waters of the United States. As defined by the act, water quality standards consist of designated beneficial uses of the water body in question and criteria that protect the designated uses. Section 304(a) requires EPA to publish advisory water quality criteria that accurately reflect the latest scientific knowledge on the kind and extent of all effects on health and welfare that may be expected from the presence of pollutants in water. Where multiple uses exist, water quality standards must protect the most sensitive use. As described in the discussion of state regulations below, SWRCB and its nine-regional water quality control boards (RWQCBs) have designated authority in California to identify beneficial uses and adopt applicable water quality objectives.

CWA Section 303(d) Impaired Waters List

Under Section 303(d) of the CWA, states must develop lists of water bodies that do not attain water quality objectives after implementation of required levels of treatment by point source dischargers (municipalities and industries). Section 303(d) requires that the state develop a TMDL for each of the listed pollutants. The TMDL is the amount of the pollutant that the water body can receive and still be in compliance with water quality objectives. The TMDL is also a plan to reduce loading of a specific pollutant from various sources to achieve compliance with water quality objectives. EPA must either approve a TMDL prepared by the state or disapprove the state's TMDL and issue its own. The National Pollutant Discharge Elimination System (NPDES) permit limits for listed pollutants must be consistent with the waste load allocation prescribed in the TMDL. After implementation of the TMDL, it is anticipated that the problems that led to placement of a given pollutant on the Section 303(d) list would be remediated.

CWA Section 404

In accordance with Section 404 of the CWA, the U.S. Army Corps of Engineers (USACE) regulates discharge of dredged or fill material into waters of the United States. Waters of the United States and their lateral limits are defined in Title 33, Part 328.3(a) of the Code of Federal Regulations to include navigable waters of the United States, interstate waters, all other waters where the use or degradation or destruction of the waters could affect interstate or foreign commerce, tributaries to any of these waters, and wetlands that meet any of these criteria or that are adjacent to any of these waters or their tributaries. Waters of the United States are often categorized as "jurisdictional wetlands" (i.e., wetlands over which the USACE exercises jurisdiction under Section 404) and "other waters of the United States" when habitat values and characteristics are being described. "Fill" is defined as any material that replaces any portion of a water of the United States with dry land or that changes the bottom elevation of any portion of a water of the United States. Any activity resulting in the placement of dredged or fill material within waters of the United States requires a permit from USACE. In accordance with Section 401 of the Clean Water Act, projects that apply for a USACE permit for discharge of dredged or fill material must obtain water quality certification from the appropriate RWQCB indicating that the project will uphold state water quality standards. Wetland protection elements of the CWA administered by the USACE are further discussed in Section 5.3, "Biological Resources," of this Draft EIR.

CWA Section 401 and 402 National Pollutant Discharge Elimination System

The NPDES permit program was established in the CWA to regulate municipal and industrial discharges to surface waters of the United States. NPDES permit regulations have been established for broad categories of discharges including point source municipal waste discharges and nonpoint source stormwater runoff. Each NPDES permit identifies limits on allowable concentrations and mass emissions of pollutants contained in the discharge. Sections 401 and 402 of the CWA contain general requirements regarding NPDES permits. “Nonpoint source” pollution originates over a wide area rather than from a definable point. Nonpoint source pollution often enters receiving water in the form of surface runoff and is not conveyed by way of pipelines or discrete conveyances. Two types of nonpoint source discharges are controlled by the NPDES program: discharges caused by general construction activities and the general quality of stormwater in municipal stormwater systems. The goal of the NPDES nonpoint source regulations is to improve the quality of stormwater discharged to receiving waters to the maximum extent practicable. The RWQCBs in California are responsible for implementing the NPDES permit system (see the discussion of state regulations below).

National Toxics Rule

In 1992, EPA issued the National Toxics Rule (NTR) (40 CFR 131.36) under the CWA to establish numeric criteria for priority toxic pollutants in 14 states and jurisdictions, including California, to protect human health and aquatic life. The NTR established water quality standards for 42 pollutants for which water quality criteria exist under CWA Section 304(a) but for which the respective states had not adopted adequate numeric criteria. EPA issued the California Toxics Rule (CTR) in May 2000. The CTR establishes numeric water quality criteria for 130 priority pollutants for which EPA has issued Section 304(a) numeric criteria that were not included in the NTR.

Federal Antidegradation Policy

The federal antidegradation policy, established in 1968, is designed to protect existing uses and water quality and national water resources. The federal policy directs states to adopt a statewide policy that includes the following primary provisions:

- ▲ existing in-stream uses and the water quality necessary to protect those uses shall be maintained and protected;
- ▲ where existing water quality is better than necessary to support fishing and swimming conditions, that quality shall be maintained and protected unless the state finds that allowing lower water quality is necessary for important local economic or social development; and
- ▲ where high-quality waters constitute an outstanding national resource, such as waters of national and state parks, wildlife refuges, and waters of exceptional recreational or ecological significance, that water quality shall be maintained and protected.

National Flood Insurance Act

Floodplain Management Executive Order 11988, adopted in May 1977, directs all federal agencies to evaluate potential effects of any actions it may take in the floodplain and to avoid all adverse impacts associated with modifications to floodplains. It also directs federal agencies to avoid encroachment into the 100-year floodplain whenever there is a practicable alternative, and to restore and preserve the natural and beneficial values served by the floodplains.

FEMA oversees floodplain management and runs the National Flood Insurance Program (NFIP) adopted under the National Flood Insurance Act of 1968. FEMA prepares Flood Insurance Rate Maps that delineate the regulatory floodplain to assist local governments with land use and floodplain management decisions to meet the requirements of the NFIP. In general, the NFIP mandates that development is not to proceed within the 100-year regulatory floodplain if the development is expected to increase flood elevation by one foot or more. Also, development is not allowed in designated 100-year floodways (i.e., flood flow channels and areas with sufficient directional flow velocity of 100-year floodwaters).

STATE

California Porter-Cologne Act

California's primary statute governing water quality and water pollution issues with respect to both surface waters and groundwater is the Porter-Cologne Water Quality Control Act of 1970 (Porter-Cologne Act). The Porter-Cologne Act grants the SWRCB and each of the nine RWQCBs power to protect water quality, and is the primary vehicle for implementation of California's responsibilities under the CWA. The applicable RWQCB for the project is the Sacramento RWQCB. The SWRCB and the Lahontan RWQCB have the authority and responsibility to adopt plans and policies, regulate discharges to surface and groundwater, regulate waste disposal sites, and require cleanup of discharges of hazardous materials and other pollutants. The Porter-Cologne Act also establishes reporting requirements for unintended discharges of any hazardous substances, sewage, or oil or petroleum products.

Each RWQCB must formulate and adopt a water quality control plan (Basin Plan) for its region. The Basin Plans must conform to the policies set forth in the Porter-Cologne Act and established by the SWRCB in its state water policy. The Porter-Cologne Act also provides that a RWQCB may include within its Basin Plan water discharge prohibitions applicable to particular conditions, areas, or types of waste.

General Permit for Stormwater Discharges Associated with Construction Activity

The SWRCB adopted the statewide NPDES General Construction Permit in August 1999. The state requires that projects disturbing more than 1 acre of land during construction file a Notice of Intent with the RWQCB to be covered under this permit. Construction activities subject to the General Construction Permit include clearing, grading, stockpiling, and excavation. Dischargers are required to eliminate or reduce non-stormwater discharges to storm drainage systems and other waters. A stormwater pollution prevention plan (SWPPP) must be developed and implemented for each site covered by the permit. The SWPPP must include the best management practices (BMPs) designed to prevent construction pollutants from contacting stormwater and to keep products of erosion from moving offsite into receiving waters throughout construction and life of the project; the BMPs must address source control and, if necessary, pollutant control.

State Nondegradation Policy

In 1968, as required under federal antidegradation policy, the SWRCB adopted a nondegradation policy aimed at maintaining high quality for waters in California. The nondegradation policy states that the disposal of wastes into state waters shall be regulated to achieve the highest water quality consistent with maximum benefit to the people of the state and to promote the peace, health, safety, and welfare of the people of the state. The policy provides as follows:

- (a) Where the existing quality of water is better than required under existing water quality control plans, such quality would be maintained until it has been demonstrated that any change would be consistent with maximum benefit to the people of the state and would not unreasonably affect present and anticipated beneficial uses of such water.
- (b) Any activity which produces waste or increases the volume or concentration of waste and which discharges to existing high-quality waters would be required to meet waste discharge requirements.

California Water Code

The California Water Code is enforced by DWR. The mission of the DWR is "to manage the water resources of California in cooperation with other agencies, to benefit the State's people, and to protect, restore, and enhance the natural and human environments." DWR is responsible for promoting California's general welfare by ensuring beneficial water use and development statewide. The 200-year floodplain is defined by Water Code Section 9602 as the minimum urban level of flood protection in the Sacramento-San Joaquin Valley. Water Code Section 9621 requires counties to collaborate with cities to develop flood emergency plans.

Central Valley Flood Protection Act

In 2007, the California Legislature passed a package of several related flood bills, which included a requirement to prepare a Central Valley Flood Protection Plan (CVFPP). Additional requirements for the CVFPP were added in the California Central Valley Flood Protection Act of 2008 (Senate Bill 5), which also defined objectives, codified in California Water Code Section 9616, for reducing the risk of flooding in the Central Valley. The 2007 and 2008 legislation requires DWR to prepare, and update every five years, the CVFPP. The plan is intended to describe both structural and nonstructural means for improving the performance of the levees, weirs, bypasses, reservoirs, and other State Plan of Flood Control facilities. The Central Valley Flood Protection Act requires that urban and urbanizing areas within the planning area make certain findings related to the provision of a minimum 200-year level of flood protection before making certain land use decisions.

Government Code Sections 65865, 65962, and 66474

These statutes pertain to areas within a flood hazard area and serve to limit their development, except where certain findings can be made related to provision of a 200-year level of flood protection in urban and urbanizing areas or a 100-year level of flood protection in nonurbanized areas.

State of California Building Code

The State of California Building Code (CBC) contains requirements for constructing structures in flood hazard areas. Flood hazard areas are established as areas of special flood hazard as identified by the Federal Emergency Management Agency's Flood Insurance Study as adopted by the local authority having jurisdiction where the project is located, as amended, or revised with the accompanying FIRM. The CBC contains standards for the construction of new buildings, structures, and portions of buildings and structures, including substantial improvements and restoration of substantial damage to buildings and structures. These structures are to be designed and constructed to resist the effects of flood hazards and flood loads (CBC Section 1612A).

Low Impact Development – Sustainable Stormwater Management

On January 20, 2005, the SWRCB adopted sustainability as a core value for all California Water Boards' activities and programs, and directed RQWCB staff to consider sustainability in all future policies, guidelines, and regulatory actions. As part of the effort to promote sustainability, the RWQCBs are advancing Low Impact Development (LID) principles in California in various ways. LID is a sustainability-promoting practice that benefits water supply and contributes to water quality protection. Unlike traditional stormwater management, LID uses site design and stormwater 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 has been a proven approach in other parts of the country and is seen in California as an alternative to conventional stormwater management.

LOCAL

City of Sacramento 2035 General Plan

The Utilities, Environmental Resources, and Environmental Constraints Elements of the City of Sacramento 2035 General Plan provide a number of goals and policies aimed at improving hydrology and water quality and reducing flooding potential. The following policies are relevant to review of the project:

Utilities Element

- ▲ Policy U 4.1.1: Adequate Drainage Facilities. The City shall ensure that all new drainage facilities are adequately sized and constructed to accommodate stormwater runoff in urbanized areas.
- ▲ Policy U 4.1.2: Master Planning. The City shall implement a master plan program to:

- identify facilities needed to prevent 10-year event street flooding and 100-year event structure flooding,
 - ensure that public facilities and infrastructure are designed pursuant to approved basin master plans,
 - ensure that adequate land area and any other elements are provided for facilities subject to incremental sizing (e.g., detention basins and pump stations), and
 - consider the use of “green infrastructure” and Low Impact Development (LID).
- ▲ Policy U 4.1.4: Watershed Drainage Plans. The City shall require developers to prepare watershed drainage plans for proposed developments that define needed drainage improvements per City standards, estimate construction costs for these improvements, and comply with the City’s National Pollutant Discharge Elimination System (NPDES) permit.
 - ▲ Policy U 4.1.5: Green Stormwater Infrastructure. The City shall encourage “green infrastructure” design and Low Impact Development (LID) techniques for stormwater facilities (i.e., using vegetation and soil to manage stormwater) to achieve multiple benefits (e.g., preserving and creating open space, improving runoff water quality).
 - ▲ Policy U 4.1.6: New Development. The City shall require proponents of new development to submit drainage studies that adhere to City stormwater design requirements and incorporate measures, including “green infrastructure” and Low Impact Development (LID) techniques, to prevent on- or off-site flooding.

Environmental Resources Element

- ▲ Policy ER 1.1.3: Stormwater Quality. The City shall control sources of pollutants and improve and maintain urban runoff water quality through storm water protection measures consistent with the City’s National Pollution Discharge Elimination System (NPDES) Permit.
- ▲ Policy ER 1.1.4: New Development. The City shall require new development to protect the quality of water bodies and natural drainage systems through site design (e.g., cluster development), source controls, storm water treatment, runoff reduction measures, best management practices (BMPs) and Low Impact Development (LID), and hydromodification strategies consistent with the city’s NPDES Permit.
- ▲ Policy ER 1.1.5: Limit Stormwater Peak Flows. The City shall require all new development to contribute no net increase in stormwater runoff peak flows over existing conditions associated with a 100-year storm event.
- ▲ Policy ER 1.1.6: Post-Development Runoff. The City shall impose requirements to control the volume, frequency, duration, and peak flow rates and velocities of runoff from development projects to prevent or reduce downstream erosion and protect stream habitat.

Environmental Constraints Element

- ▲ Policy EC 2.1.11: New Development. The City shall require evaluation of potential flood hazards prior to approval of development projects and shall regulate development in urban and urbanizing areas per state law addressing 200-year level of flood protection.
- ▲ Policy EC 2.1.24: Flood Risk Notification. The City shall annually notify owners of residential development protected from flooding by a levee and/or subject to inundation in the event of levee failure of the risk.
- ▲ Policy EC 2.1.25: Deed Notification. The City shall require, for areas protected by levees, all new developments to include a notice within the deed that the property is protected by flooding from a levee and that the property can be subject to flooding if the levee fails or is overwhelmed.

North Natomas Community Plan

The North Natomas Community Plan (NNCP) establishes that drainage systems should be designed to detain the surface runoff on the land in detention basins before releasing it slowly and in a controlled manner to the Sacramento River. The detention basins and canal corridors are to be developed as conjunctive uses with parks, linear parkways, utility corridors, and other compatible land uses. The NNCP also establishes that a minimum of 200-year flood protection will be achieved to reduce personal injury and property damage in the event of a flood and to enable residents to obtain affordable flood insurance. The following NNCP drainage system polices are relevant to the project:

Utilities Element

- ▲ Policy NN.U 1.1: Drainage System Capacity. The City shall ensure that the drainage system will not be designed or approved with a capacity greater than that required to serve the projected population and land uses identified in the community plan or County land use plans north of Elkhorn canal.
- ▲ Policy NN.U 1.5: Drainage Facilities. The City shall require that all phased drainage facilities be part of the CDP and approved prior to implementation.
- ▲ Policy NN.U 1.6: Development Agreements. The City shall require that all phased drainage facilities are implemented in accordance with the Finance Plan. Development agreements formalizing financial commitments for the CDP shall be in place prior to approval of any phased incremental development.
- ▲ Policy NN.U 1.7: Operational Drainage Facilities. The City shall ensure that adequate drainage facilities are in place and operational before each new increment of development is approved for construction.

There are no policies specific to North Natomas that supplement the citywide General Plan policies for flood hazards.

Reclamation District 1000

RD1000 is a State-Legislature-created special district that has been providing flood protection and public safety to the Natomas Basin since 1911. RD1000 is responsible for maintaining over 40 miles of levees surrounding the perimeter of the Natomas Basin to keep floodwaters from the Sacramento River, American River, Natomas East Main Drain Canal, Pleasant Grove Creek Canal, and Natomas Cross Canal out of the basin. RD1000 also operates and maintains hundreds of miles of canals and seven pump stations to collect and safely discharge stormwater runoff within the Natomas basin back into the river.

City of Sacramento Code

Chapter 15.104 (Floodplain Management Regulations)

The City's Floodplain Management Ordinance regulates development that is or might be dangerous to health, safety, and property by requiring at the time of initial development or substantial improvement methods of protection against flood damage in areas vulnerable to flooding. It regulates impacts such as filling; grading or erosion; alteration of natural floodplains, stream channels or watercourses; the imposition of barriers that increase flood hazards; or any other impacts that aggravate or cause flood hazards. Adoption of this chapter of the City Code was required in order for the City to participate in the National Flood Insurance Program, and it regulates activities within Special Flood Hazard Areas established by FEMA as being areas in the floodplain that are subject to inundation by a flood having a 1 percent chance of being equaled or exceeded in a given year (100-year return period), including Zones A, AO, AH, A1-30, AE, A99, AR, AR/A1-30, AR/AE, AR/AO and AR/AH.

In March 2015, the City of Sacramento passed an ordinance amending Chapter 15.104 of the Sacramento City Code relating to floodplain management regulations for the portion of the Natomas Basin within the city under a Zone A99 flood designation. The ordinance would limit residential growth by calendar year for the Natomas Basin:

- ▲ Building permits for up to 1,500 residential dwelling units per calendar year,
 - 1,000 single-family units per year; single family dwelling unit building types, and
 - 500 multiple-family units per year

Rollover unit counts from unused allowance in calendar year 2015, could be added to the allowed number for the 2016 calendar year. In addition, projects that meet certain findings may exceed the cap established by the ordinance subject to City Council approval.¹ Property owners need to maintain flood insurance until one hundred (100) year protection is achieved and FEMA changes the basin's designation on the FIRM from Zone A99 to Zone X.

Chapter 15.88 (Grading, Erosion, and Sediment Control)

The City's Grading Ordinance sets forth rules and regulations to control land disturbances, landfill, soil storage, pollution, and erosion and sedimentation resulting from construction activities. Provisions contained therein are intended to avoid pollution of watercourses with nutrients, sediments, or other materials generated or caused by surface water runoff. The ordinance was also adopted as a part of the City's compliance requirements for the City's NPDES Permit.

City of Sacramento Storm Drainage Design Standards

Section 11 of the City Standards provides requirements pertaining to hydrology and storm drainage facilities, including chapters that address general requirements, design runoff, conveyance facilities, detention ponds, regional water quality control, pump stations, and submittal requirements.

5.8.3 Impacts and Mitigation Measures

SIGNIFICANCE CRITERIA

For the purposes of this Draft EIR, a hydrologic or flooding impact of the project would be considered significant if it would result in any of the following impacts (based on CEQA Guidelines Appendix G):

- ▲ violate any water quality or waste discharge requirements;
- ▲ substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site;
- ▲ substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;
- ▲ create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff;
- ▲ otherwise substantially degrade water quality;
- ▲ place housing within a 100-year flood hazard area as mapped on a Federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map;
- ▲ place within a 100-year flood hazard area structures which would impede or redirect flood flows;

¹ The City Council would need to find that: (a) allowing the units is consistent with protecting the public health and safety; (b) allowing the units is consistent with the actions already taken or underway to mitigate potential damage relating to new development in a special flood hazard area; and (c) allowing the units promotes the orderly development and wise use of the City's floodplains. (Sacramento City Code, § 15.104.065, subd. (B)(2).)

- ▲ expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam;
- ▲ inundation by seiche, tsunami, or mudflow; or
- ▲ significantly degrade groundwater quality directly or indirectly.

METHODS AND ASSUMPTIONS

The hydrology and water quality analysis is based on a review and utilization of the Drainage System Modeling Report for the Natomas Panhandle (Panhandle Owner's Group 2016). This report evaluates the effectiveness of the proposed backbone infrastructure based on 100-year and 10-year event analysis. The modeling and design criteria used is consistent with the City of Sacramento's storm drainage design standards and assumes: that all building pads would be a minimum of 1.0 feet above the 100-year water surface or 1.5 feet above the overland release elevation; the 10-year water surface elevation is a minimum of 6 inches below all drainage inlets; and infill drainage systems would not result in increased flooding that does harm. Further, there is an additional requirement by RD1000 to provide a maximum site discharge of 0.1 cubic foot per second per acre of development because the project is located within the Natomas Basin.

While not included in the Panhandle PUD, the future development of the Krumenacher Ranch site is addressed in the impact analysis below.

ISSUES DISMISSED FROM FURTHER CONSIDERATION

The Panhandle Area is not located along any coast line or shore line of a major water body where potential hazards from a seiche or tsunami could occur. In addition, the project area is relatively flat and would not expose the project to hazards from mudflows. Thus, these impacts are not further addressed in this Draft EIR. Potential impacts to groundwater resources associated with increased water supply demands of the project are addressed Section 5.13, "Utilities."

PROJECT IMPACTS AND MITIGATION MEASURES

Impact 5.8-1: Storm Water Runoff Generation and Surface Water Drainage Patterns

Development of the project may increase storm water runoff rates generated within and downstream of the project when compared with existing conditions. While the project includes necessary drainage improvements to properly handle onsite storm water flows, phased development of the site could potentially result in temporary drainage impacts if the necessary drainage facilities are not in place at the time of site development. Development could also worsen existing drainage and local flooding issues at the intersection of Del Paso Road and Sorento Road. This impact would be **potentially significant**.

When land is in a natural or undeveloped condition, soils, mulch, vegetation, and plant roots absorb rainwater. This absorption process is called infiltration or percolation. Much of the rainwater that falls on natural or undeveloped land slowly infiltrates the soil and is stored either temporarily or permanently on the surface or in underground layers of soil. When the soil becomes completely saturated with water or the rate of rainfall exceeds the infiltration capacity of the soil, the rainwater begins to flow over the surface of land to low lying areas, ditches, channels, streams, and rivers. Rainwater that flows off a site is defined as storm water runoff.

The infiltration and runoff process is altered when a site is developed with urban uses. Houses, buildings, roads, and parking lots introduce asphalt, concrete, and roofing materials to the landscape. These materials are relatively impervious, which means that they absorb less rainwater. Grading associated with development also eliminates many of the low-lying areas that may have been providing a degree of surface storage. As impervious surfaces are added to the ground conditions and surface drainage becomes more

efficient and more concentrated, the natural infiltration and storage processes are reduced. As a result, the volume and flow rate of storm water runoff increases. The effect of these increases in runoff rates and volumes are more pronounced during storms of lower magnitude and higher frequency. This is because of reductions in initial abstraction (infiltration and surface storage) and time of concentration (travel times).

The primary drainage improvement for the project would consist of an on-site stormwater detention basin on the west side of the project area north of Club Center Drive (see Exhibit 3-4). The detention basin would provide storage to allow outflows to be metered at a reduced rate to discharge to existing twin 60-inch pipes that drain runoff from the site to the canal that runs parallel to Truxel Road, with no offsite improvements required. The detention basin would be sized to contain the 100-year, 10-day runoff volume assuming a maximum pumping rate of 0.10 cubic feet/acre for the project area as well as for the on-site East Natomas Education Complex. Water quality control features would also be incorporated in the basin design.

The detention basin would serve both to control the release of storm water flows into the existing surface water drainage facilities and to facilitate storm water treatment. In addition, as required by the City's Stormwater Management Plan, and the City's NPDES storm water permit, the project would incorporate BMPs to reduce runoff containing urban pollutants. The modeling and analysis in the Drainage System Modeling Report for the Natomas Panhandle (Panhandle Owner's Group 2016) indicate that the proposed storm water system would comply with applicable City of Sacramento standards with respect to the water surface elevations generated during 10-year flows. The analysis also determined that the proposed detention basin would have the capacity to detain both the 100-year, 24-hour event and the 100-year 10-day event. Thus, implementation of these improvements would accommodate increased drainage flows from Panhandle PUD buildout. However, phased development of the site could potentially result in temporary drainage impacts if the necessary drainage facilities are not in place at the time of site development. Development could also worsen existing drainage and local flooding issues at the intersection of Del Paso Road and Sorento Road. This would be a **potentially significant** impact.

Mitigation Measure 5.8-1: Demonstrate compliance with Drainage Report

As part of approval of each small lot final map and/or each subsequent project, the project developer shall demonstrate to the City that drainage facilities are consistent with the Drainage System Modeling Report for the Natomas Panhandle (Panhandle Owner's Group 2016), and adequately attenuate increased drainage flows consistent with City standards. The analysis will also demonstrate that existing flooding issues at the intersection of Del Paso Road/Sorento Road will not be worsen by site development. This demonstration may take the form of plans and/or reports.

Significance after Mitigation

Implementation of onsite drainage improvements as described in the Drainage System Modeling Report for the Natomas Panhandle and implementation of Mitigation Measure 5.8.1 would ensure drainage impacts are adequately address and mitigate this impact to **less than significant**. This mitigation measure would be consistent with North Natomas Community Plan Policy NN.U. 1.7 regarding the timing of drainage improvements with development.

Impact 5.8-2: Surface Water Quality

Development of the project would introduce sediments and constituent pollutants typically associated with construction activities and urban development into storm water runoff. These pollutants would have the potential of degrading downstream storm water quality. This impact would be **potentially significant**.

Construction

Construction activities associated with development of the project area would result in land-disturbing activities such as grading, excavation, and trenching that could expose soils to erosion and lead to deterioration of surface water quality. In addition, accidents and improper use of fuels, oils, and other construction-related hazardous materials pose a threat to water quality. The following regulatory

mechanisms would control construction activities and minimize, to the maximum extent practicable, the degradation of water quality.

To reduce or eliminate construction-related water quality effects, the City of Sacramento's Grading Ordinance would require future public or private contractors to comply with the requirements of the City's Stormwater Quality Improvement Plan (SQIP). The City's SQIP and the *Stormwater Quality Design Manual for the Sacramento Region* include BMPs to be implemented to mitigate impacts from new development. In addition, before the onset of any construction activities, where the disturbed area is 1 acre or more in size, the City would require any public or private contractors to obtain coverage under the NPDES General Construction Permit and include erosion and sediment control plans.

The City operates under a Phase I NPDES permit for stormwater municipal discharges to surface waters (NPDES No. CAS082597). The permit requires that the City impose water quality and watershed protection measures for all development projects. The intent of the waste discharge requirements in the permit is to attain water quality standards and protection of beneficial uses consistent with the Central Valley RWQCB's Basin Plan. The NPDES permit prohibits dischargers from causing violations of applicable water quality standards or resulting in conditions that create a nuisance or water quality impairment in receiving waters. A key component of the NPDES permit is the implementation of the SQIP, which consists of six Minimum Control elements 1) public education and outreach, 2) commercial/industrial control, 3) detection and elimination of illicit discharges, 4) construction stormwater control, 5) post-construction stormwater control for new development and redevelopment 6) pollution prevention/good housekeeping for municipal operations).

The City would also require contractors' erosion and sediment control plans to include BMPs to minimize the potential for, and effects from, spills of hazardous, toxic, or petroleum substances during construction activities for all contractors. Examples of non-storm water BMPs include preventing illicit discharges and implementing good practices for vehicle and equipment maintenance, cleaning and fueling operations, such as using drip pans under vehicles. Waste and materials management BMPs include implementing practices and procedures to prevent pollution from materials used on construction sites. Examples of materials management BMPs include:

- ▲ good housekeeping activities such as storing materials covered and elevated off the ground, in a central location,
- ▲ securely locating portable toilets away from the storm drainage system and performing routine maintenance,
- ▲ providing central locations for concrete wash out and performing routine maintenance,
- ▲ providing several dumpsters and trashcans throughout the construction site for litter/floatable management, and
- ▲ covering and/or containing stockpiled materials and overall good housekeeping on the site.

The City would routinely inspect the construction area to verify that the measures specified in the erosion and sediment control plan are properly implemented and maintained. The City would notify contractors immediately if there is a noncompliance issue and would require compliance. If a spill occurs, the contractor's superintendent would notify the City, and the contractor would take action to contact the appropriate safety and clean-up crews to ensure that the Spill Prevention and Control Program is followed. In addition, as part of the project, the City would respond and investigate any spills reported at construction sites. A written description of reportable releases would be submitted to the CVRWQCB and the California Department of Toxic Substances Control (DTSC) by the contractor or owner. If an appreciable spill occurs and results determine that construction activities have adversely affected surface water or groundwater quality, a detailed analysis would be performed to the specifications of DTSC to identify the likely cause of contamination. This analysis would include recommendations for reducing or eliminating the source or mechanisms of contamination. Based on this analysis, contractors would select and implement measures to control contamination, with a performance

standard that surface and/or groundwater quality must be returned to baseline conditions. These measures would be subject to approval by the City and/or the RWQCB.

Adherence to the regulations described above would reduce the potential for the project to substantially degrade water quality or violate water quality orders. In addition, established general plan policies require: the City to meet water quality requirements of the Phase 1 NPDES Permit; construction contractors to comply with erosion and sediment control and stormwater discharge regulations; watershed education to City staff; and preparation of watershed drainage plans. Compliance with City requirements would ensure that project construction water quality impacts are reduced to a **less-than-significant** level.

Operation

New development within the project area would increase local runoff production, and could introduce constituents into storm water that are typically associated with urban runoff. These constituents include sediments, heavy metals (such as lead, zinc, and copper), petroleum hydrocarbons, pesticides, and fertilizers.

New development within the project area would also increase the flow rates and velocities of storm runoff conveyed through project development areas. The increase in site runoff production and velocities of drainage flow produced by the site development may increase the corresponding sediment discharge capacity and conveyance of sediments through the site during storm events. Pollutants are generally components of the sediment discharge associated with drainage flows. Storm drainage originating from the site would be released and transported through downstream properties and pumped and delivered to the Sacramento River by RD1000 facilities.

The City has identified a range of BMPs and measurable goals to address the stormwater discharges in the city. A key component of this compliance is implementation of the SQIP new development element that requires stormwater quality treatment and/or BMPs to be incorporated in the project design phase. Post-construction stormwater quality controls for new development require use of source control, runoff reduction, and treatment control measures set forth in the Stormwater Quality Design Manual for the Sacramento Region (latest edition). This includes use of regional water quality control features (i.e., proposed on-site detention basin) for large developments, use of treatment-control measures, including swales, filter strips, media filters and infiltration, and housekeeping practices (e.g., spill prevention, proper storage measures and clean-up procedures).

The project currently does not provide details on how it would address operational water quality. As a result, it is unknown whether the project would meet the requirements of the City's Stormwater Quality Design Manual. Therefore, this would be a **potentially significant** impact.

Mitigation Measure 5.8-2: Design drainage facilities to include water quality control features

Drainage facilities shall be designated to meet or exceed storm water quality requirements set forth in City Standards pertaining to regional storm water quality control in association with NPDES Stormwater Permit No. CA502597. Water quality control may consist of pollutant source control, water quality treatment through Best Management Practices or a combination of both measures. Water quality control features as part of drainage facilities shall be reviewed and approved by the City before approval of improvement plans for the site.

Significance after Mitigation

Implementation of the above mitigation measure would ensure compliance with City water quality requirements, consistency with the City's NPDES permit associated with stormwater quality control, and mitigation of potential operational-related water quality impacts to a **less-than-significant** level.

Impact 5.8-3 Flood Risk from Levee Failure

The project may conflict with planned improvements to the North Natomas Levee associated with the NEMDC to provide flood protection. This impact would be **potentially significant**.

The project area is located within the Natomas Basin that is zoned A99 by FEMA, which means that enough progress had been made on the flood protection system at the time of the most recent map update to determine that the area will have protection from the 100-year flood when construction is complete. As described above, the 2035 General Plan also includes policies related to levee requirements, new development evaluations, and regional flood management planning efforts. Development projects are not to be approved unless flood risk is consistent with plans that are aimed to provide a 200-year flood protection standard for the entire city (Policy EC 2.1.11) and would be consistent with on-going planning associated with the CVFPB, as well as on-going planning to address flooding-related effects of global climate change. The completion of the NLIP would provide 200-year flood protection for the Natomas Basin (consistent with Policy EC 2.1.11).

As noted above, the City of Sacramento amended Chapter 15.104 of the Sacramento City Code relating to floodplain management regulations for the portion of the Natomas Basin within the city under a Zone A99 flood designation. The ordinance limits residential growth by calendar year for the Natomas Basin to minimize public health and safety hazards from flooding while remaining levee improvements are completed. Property owners in the project would need to maintain flood insurance until 100-year protection is achieved and FEMA changes the basin's designation on the FIRM from Zone A99 to Zone X. Future project property owners would participate in funding of the NLIP through the Natomas Basin Local Assessment District.

The northern portion of the project area is located adjacent to the North Natomas Levee that is associated with the NEMDC. This levee is planned for improvement associated with the SAFCA NLIP, Phase 4b Landside Improvements Project (Phase 4b Project), which was evaluated in the Phase 4b EIS/EIR (State Clearinghouse No. 2009112025). SAFCA and RD1000 identified that the project should include a 150-foot setback from the centerline of the levee for construction and levee access for maintenance (RD1000 2016). The project design currently does not provide this setback in its site plan. Therefore, the project may conflict with planned improvements to the North Natomas Levee associated with the NEMDC. This impact would be **potentially significant**.

Mitigation Measure 5.8-3: Provision of 150-foot setback from centerline of the Natomas Levee

As part of approval of each small lot final map and/or each subsequent project, the project developer shall designate a 150-foot setback from centerline of the Natomas Levee. The landside of the levee shall be designated as open space or other uses that would not damage the levee and will provide access to Reclamation District 1000 and the Sacramento Area Flood Control for levee improvements and maintenance.

Significance after Mitigation

Implementation of the above mitigation measure would provide an adequate setback for maintenance and improvements for the Natomas Levee to implement of the NLIP. Further, project development would be subject to building permit limitations under Chapter 15.104 of the City Code and would be required to maintain flood insurance until at least 100-year protection is achieved under the NLIP. Thus, this impact would be reduced to a **less-than-significant** level.

Impact 5.8-4 Groundwater Quality

It is possible that shallow groundwater beneath the proposed onsite detention basins could interact with pollutants associated with urban runoff that would be captured within the detention basins. Pollutants could be released in the underlying groundwater basin and could result in contamination of wells used for consumptive uses. This impact would **potentially significant**.

The project would include a stormwater detention basin on the west side of the project area north of Club Center Drive (see Exhibit 3-4). The detention basin would provide storage to allow metered release to existing drainage infrastructure and would include features for water quality control consistent with City requirements.

As previously noted above, groundwater levels in the project area occur at 4 to 17 feet below the ground surface. Cosumnes silt loam is mapped in the area of the proposed detention basin site (NRCS 2016).

Although these soils have slow infiltration rates, the depth to groundwater in the project area is relatively shallow and there is potential for surface water held in the detention basin to come into contact with the groundwater table. This may be of concern because stormwater runoff can collect common urban pollutants, such as oils, and herbicides.

Several technical studies have been conducted regarding water quality control feature impacts on groundwater (e.g., City of Fresno Nationwide Urban Runoff Project and *California Storm Water Best Management Practices Handbook* prepared by the Stormwater Quality Task Force). These studies have identified that water quality control features such as detention and infiltration basins have been successful in controlling water quality and avoiding groundwater quality impacts (metals and organic compounds associated with stormwater are typically lost within the first few feet of the soil of the basins). This is because pollutants are likely to become attached to the surface soil particles and are not likely to travel deep into subsurface soil and water layers.

A detailed evaluation of the conditions and design of the proposed onsite detention basin has not been conducted. Therefore, the site-specific conditions of shallow groundwater could create a situation where pollutants could be released into the underlying groundwater basin. Further, given the eastern gradient of groundwater flow and the active groundwater pumping occurring in the region, any potential contamination could affect existing municipal, industrial, and private residential wells that draw water for consumptive use. This impact would be **potentially significant**.

Mitigation Measure 5.8-4: Evaluate depth to groundwater and incorporate appropriate features into detention basin design

As part of the final design of the project detention basin, soil borings shall be taken at representative locations within the detention basin to analyze the subsurface soils that are present and the elevation of the subsurface water table. If these soil borings identify shallow groundwater within 2 feet of the proposed bottom elevation of the detention basin, or within the detention basin, a liner and/or additional water quality control features such as vegetation shall be incorporated into the design of the detention basin to prohibit the migration of surface water contamination into the groundwater table, subject to City review and approval.

Significance after Mitigation

Implementation of the above mitigation measure would ensure that groundwater quality is protected and would mitigate the impact to **less than significant**.

5.8.4 Cumulative Setting, Impacts, and Mitigation Measures

CUMULATIVE SETTING

As previously described, the project is located within the 27,000-square mile Sacramento River watershed, which includes the Sacramento and American rivers. The cumulative setting includes consideration of this watershed as well as the Natomas area regarding area flood concerns.

CUMULATIVE IMPACTS AND MITIGATION MEASURES

Impact 5.8-5: Cumulative Water Quality Impacts

The project in combination with planned and proposed development in the region could contribute to potential cumulative impacts to surface and groundwater quality from construction and operation activities. However, with implementation of City stormwater quality requirements and mitigation measures proposed, the project's contribution to cumulative water quality impacts **would not be cumulatively considerable**.

Overall water quality in the region has degraded over time, as natural habitat has been converted to urban uses, and these uses have resulted in runoff of various pollutants into the adjacent waterways. A variety of programs have been implemented with the goal of halting degradation of water quality and reversing this trend. Several state and federal agencies are involved in these programs, many of which come from the federal Clean Water Act. Nonetheless, a cumulative adverse water quality condition exists. Construction of the project, as well as construction of the related projects, would result in surface disturbance through ground scraping, grading, trenching, and compaction associated with typical development activities. Existing vegetation would be removed, thereby increasing the potential for erosion. Operational activities and proposed land uses (e.g., roadways, driveways) would generate atmospheric pollution, tire-wear residues, petroleum products, and oil and grease which would be carried in stormwater runoff. These constituents could enter the storm drainage system and adversely affect water quality.

Implementation of Mitigation Measures 5.8-2 would reduce the project's contribution to the cumulative effect on water quality to a less-than-considerable level. In addition, other projects would be required to comply with federal and state water quality regulations and prepare project-specific Stormwater Pollution Prevention Plans that would include site-specific BMPs and any other necessary site-specific Waste Discharge Requirements or waivers under the Porter-Cologne Act. In accordance with federal and state stormwater regulations, new construction and significant redevelopment must maintain pre-project hydrology and incorporate proper pollutant source controls, minimize pollutant exposure outdoors, and treat stormwater runoff through proper post-construction BMPs when source control or exposure protection are insufficient for reducing pollutant loads. Therefore, project construction and operation, and the construction and operation of related projects, would reduce site-specific water quality impacts such that cumulatively adverse water quality impacts would not occur and the project would not have a considerable contribution such that a new significant cumulative impact would occur.

As noted above under impacts 5.8.2 and 5.8.4, development of the Panhandle area could result in significant surface water and groundwater quality impacts from construction and operation activities. This could contribute to regional non-point (e.g., storm water and agricultural run-off) and point source (e.g., wastewater treatment plant effluent discharges) pollution of the watershed that may inhibit beneficial uses of the Sacramento River identified in the Basin Plan. Mitigation measure 5.8-4 would ensure that the on-site detention basin is designed to protect groundwater quality. Therefore, the project **would not have a considerable contribution** such that a new significant cumulative impact to groundwater quality would occur.

Mitigation Measures

No mitigation is required.

Impact 5.8-6 Cumulative Flood Hazards

The project in combination with planned and proposed development in the region could contribute to potential impacts to cumulative flood hazards. However, with implementation of mitigation measures proposed, the project's contribution to cumulative flooding and drainage impacts **would not be cumulatively considerable**.

Development of the project in combination with development of the related projects would result in the addition of impervious surfaces, which would increase stormwater runoff that can result in downstream flooding. However, in accordance with federal, state, and local storm water regulations, new construction and significant redevelopment must maintain pre-project hydrology and incorporate proper pollutant source controls, minimize pollutant exposure outdoors, and treat storm water runoff through proper post-construction BMPs when source control or exposure protection are insufficient for reducing pollutant loads. Therefore, before any construction-related ground disturbance, final drainage plans would be required to demonstrate that all runoff would be appropriately conveyed and would not leave the project sites at rates exceeding pre-project runoff conditions. In addition, the implementation of Mitigation Measure 5.8-1 would further reduce the project's contribution to storm water runoff in the project vicinity. As noted above under Impact 5.8.1, implementation of proposed drainage improvements would fully mitigate the project's increase in drainage flows during peak flow conditions and existing regulations require all proposed developments to

demonstrate that the projects would not contribute to offsite draining. Therefore, the project **would not have a considerable contribution** to cumulative stormwater drainage impacts.

As identified under Impact 5.8.3, the project is located within the Natomas Basin that is currently zoned A99 by FEMA. While approval of the project would add additional residents and structures to this flood hazard condition, the project is subject to Chapter 15.104 of the Sacramento City Code relating to floodplain management regulations under a Zone A99 flood designation. The ordinance limits residential growth by calendar year for the Natomas Basin to minimize public health and safety hazards from flooding while remaining levee improvements are completed. Property owners in the project would need to maintain flood insurance until 100-year protection is achieved and FEMA changes the basin's designation on the FIRM from Zone A99 to Zone X. Future project property owners would participate in funding of the NLIP through the Natomas Basin Local Assessment District. Planned completion of the NLIP would result in a 200-year flood protection for the project and the Natomas Basin and no significant flood hazard in future year conditions.

Mitigation Measures

No mitigation is required.

5.9 NOISE AND VIBRATION

This section presents definitions of common noise descriptors; descriptions of applicable noise regulations, acoustic fundamentals, and existing ambient noise conditions; and an analysis of potential short- and long-term noise impacts associated with implementation of the project.

The following comment was received in response to the Notice of Preparation (see Appendix A) that is addressed in this section:

- ▲ nuisance impacts on residential areas adjoining the project area.

5.9.1 Characteristics of Environmental Noise

Prior to discussing the noise setting for the project, background information on sound, noise, vibration, and common noise descriptors is needed to provide context and a better understanding of the technical terms and regulations referenced throughout this section.

SOUND, NOISE, AND ACOUSTICS

Sound can be described as the mechanical energy of a vibrating object transmitted by pressure waves through a liquid or gaseous medium (e.g., air) to a hearing organ, such as a human ear. Noise is defined as loud, unexpected, or annoying sound.

In the science of acoustics, the fundamental model consists of a sound (or noise) source, a receiver, and the propagation path between the two. The loudness of the noise source and obstructions or atmospheric factors affecting the propagation path to the receiver determines the sound level and characteristics of the noise perceived by the receiver. The field of acoustics deals primarily with the propagation and control of sound.

FREQUENCY

Continuous sound can be described by frequency (pitch) and amplitude (loudness). A low-frequency sound is perceived as low in pitch. Frequency is expressed in terms of cycles per second, or hertz (Hz) (e.g., a frequency of 250 cycles per second is referred to as 250 Hz). High frequencies are sometimes more conveniently expressed in kilohertz, or thousands of hertz. The audible frequency range for humans is generally between 20 Hz and 20,000 Hz.

SOUND PRESSURE LEVELS AND DECIBELS

The amplitude of pressure waves generated by a sound source determines the loudness of that source. Sound pressure amplitude is measured in micro-Pascals (mPa). One mPa is approximately one hundred billionth (0.0000000001) of normal atmospheric pressure. Sound pressure amplitudes for different kinds of noise environments can range from less than 100 to 100,000,000 mPa. Because of this huge range of values, sound is rarely expressed in terms of mPa. Instead, a logarithmic scale is used to describe sound pressure level (SPL) in terms of decibels (dB).

ADDITION OF DECIBELS

Because decibels are logarithmic units, SPL cannot be added or subtracted through ordinary arithmetic. Under the decibel scale, a doubling of sound energy corresponds to a 3-dB increase. In other words, when two identical sources are each producing sound of the same loudness, the resulting sound level at a given

distance would be 3 dB higher than if only one of the sound sources was producing sound under the same conditions. For example, if one automobile produces an SPL of 70 dB when it passes an observer, two cars passing simultaneously would not produce 140 dB; rather, they would combine to produce 73 dB. Under the decibel scale, three sources of equal loudness together produce a sound level 5 dB louder than one source.

A-WEIGHTED DECIBELS

The decibel scale alone does not adequately characterize how humans perceive noise. The dominant frequencies of a sound have a substantial effect on the human response to that sound. Although the intensity (energy per unit area) of the sound is a purely physical quantity, the loudness or human response is determined by the characteristics of the human ear.

Human hearing is limited in the range of audible frequencies as well as in the way it perceives the SPL in that range. In general, people are most sensitive to the frequency range of 1,000–8,000 Hz, and perceive sounds within that range better than sounds of the same amplitude in higher or lower frequencies. To approximate the response of the human ear, sound levels of individual frequency bands are weighted, depending on the human sensitivity to those frequencies. Then, an “A-weighted” sound level (expressed in units of A-weighted decibels [dBA]) can be computed based on this information.

The A-weighting network approximates the frequency response of the average young ear when listening to most ordinary sounds. When people make judgments of the relative loudness or annoyance of a sound, their judgment correlates well with the A-scale sound levels of those sounds. Thus, noise levels are typically reported in terms of A-weighted decibels or dBA. Table 5.9-1 describes typical A-weighted noise levels for various noise sources. All noise levels stated in this analysis are A-weighted and expressed in dBA.

Table 5.9-1 Typical A-Weighted Noise Levels

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
	– 110 –	Rock band
Jet fly-over at 1,000 feet	– 100 –	
Gas lawn mower at 3 feet	– 90 –	
Diesel truck at 50 feet at 50 miles per hour	– 80 –	Food blender at 3 feet, Garbage disposal at 3 feet
Noisy urban area, daytime, Gas lawn mower at 100 feet	– 70 –	Vacuum cleaner at 10 feet, Normal speech at 3 feet
Commercial area, Heavy traffic at 300 feet	– 60 –	
Quiet urban daytime	– 50 –	Large business office, Dishwasher next room
Quiet urban nighttime	– 40 –	Theater, large conference room (background)
Quiet suburban nighttime	– 30 –	Library, Bedroom at night
Quiet rural nighttime	– 20 –	
	– 10 –	Broadcast/recording studio
Lowest threshold of human hearing	– 0 –	Lowest threshold of human hearing

Source: Caltrans 2013a: Table 2-5

HUMAN RESPONSE TO CHANGES IN NOISE LEVELS

As discussed above, the doubling of sound energy results in a 3-dBA increase in sound. However, given a sound level change measured with precise instrumentation, the subjective human perception of a doubling of loudness will usually be different from what is measured.

Under controlled conditions in an acoustical laboratory, the trained, healthy human ear is able to discern 1-dBA changes in sound levels when exposed to steady, single-frequency (“pure-tone”) signals in the mid-frequency (1,000–8,000 Hz) range. In typical noisy environments, changes in noise of 1–2 dBA are generally not perceptible. However, it is widely accepted that people are able to begin to detect sound level increases of 3 dBA in typical noisy environments. Further, a 5-dBA increase is generally perceived as a distinctly noticeable increase, and a 10-dBA increase is generally perceived as a doubling of loudness. Therefore, a doubling of sound energy (e.g., doubling the volume of traffic on a highway) that would result in a 3-dBA increase in sound would generally be perceived as barely detectable.

5.9.2 Vibration

Vibration is the periodic oscillation of a medium or object with respect to a given reference point. Sources of vibration include natural phenomena (e.g., earthquakes, volcanic eruptions, sea waves, landslides) and those introduced by human activity (e.g., explosions, machinery, traffic, trains, construction equipment). Vibration sources may be continuous, (e.g., operating factory machinery) or transient in nature (e.g., explosions). Vibration levels can be depicted in terms of amplitude and frequency, relative to displacement, velocity, or acceleration.

Vibration amplitudes are commonly expressed in peak particle velocity (PPV) or root-mean-square (RMS) vibration velocity. PPV and RMS vibration velocity are normally described in inches per second (in/sec) or in millimeters per second (mm/s). PPV is defined as the maximum instantaneous positive or negative peak of a vibration signal. PPV is typically used in the monitoring of transient and impact vibration and has been found to correlate well to the stresses experienced by buildings (FTA 2006:7-5, Caltrans 2013b:6).

Although PPV is appropriate for evaluating the potential for building damage, it is not always suitable for evaluating human response. It takes some time for the human body to respond to vibration signals. In a sense, the human body responds to average vibration amplitude. The RMS of a signal is the average of the squared amplitude of the signal, typically calculated over a 1-second period. As with airborne sound, the RMS velocity is often expressed in decibel notation as vibration decibels (VdB), which serves to compress the range of numbers required to describe vibration (FTA 2006:7-5). This is based on a reference value of 1 micro inch per second.

The typical background vibration-velocity level in residential areas is approximately 50 VdB. Ground vibration is normally perceptible to humans at approximately 65 VdB. For most people, a vibration-velocity level of 75 VdB is the approximate dividing line between barely perceptible and distinctly perceptible levels (FTA 2006:7-7).

Typical outdoor sources of perceptible ground vibration are construction equipment, steel-wheeled trains, and traffic on rough roads. If a roadway is smooth, the ground vibration is rarely perceptible. The range of interest is from approximately 50 VdB, which is the typical background vibration-velocity level, to 100 VdB, which is the general threshold where minor damage can occur in fragile buildings. Construction activities can generate sufficient ground vibrations to pose a risk to nearby structures. Constant or transient vibrations can weaken structures, crack facades, and disturb occupants (FTA 2006:7-5).

Construction vibrations can be transient, random, or continuous. Transient construction vibrations are generated by blasting, impact pile driving, and wrecking balls. Continuous vibrations result from vibratory pile drivers, large pumps, and compressors. Random vibration can result from jackhammers, pavement breakers, and heavy construction equipment. Table 5.9-2 describes the general human response to different ground vibration-velocity levels.

Table 5.9-2 Human Response to Different Levels of Ground Noise and Vibration

Vibration-Velocity Level	Human Reaction
65 VdB	Approximate threshold of perception.
75 VdB	Approximate dividing line between barely perceptible and distinctly perceptible. Many people find that transportation-related vibration at this level is unacceptable.
85 VdB	Vibration acceptable only if there are an infrequent number of events per day.

Notes: VdB = vibration decibels referenced to 1 μ inch/second and based on the root mean square (RMS) velocity amplitude.
Source: FTA 2006:7-8

5.9.3 Common Noise Descriptors

Noise in our daily environment fluctuates over time. Some fluctuations are minor, but some are substantial. Some noise levels occur in regular patterns, but others are random. Some noise levels fluctuate rapidly, but others fluctuate slowly. Some noise levels vary widely, but others are relatively constant. Various noise descriptors have been developed to describe time-varying noise levels. The following are the noise descriptors used throughout this section.

Equivalent Continuous Sound Level (L_{eq}): L_{eq} represents an average of the sound energy occurring over a specified period. In effect, L_{eq} is the steady-state sound level containing the same acoustical energy as the time-varying sound that actually occurs during the same period. The 1-hour A-weighted equivalent sound level ($L_{eq(1h)}$) is the energy average of A-weighted sound levels occurring during a 1-hour period and is the basis for noise abatement criteria used by Caltrans and Federal Highway Administration (FHWA).

Percentile-Exceeded Sound Level (L_{xx}): L_{xx} represents the sound level exceeded for a given percentage of a specified period (e.g., L_{10} is the sound level exceeded 10 percent of the time, and L_{90} is the sound level exceeded 90 percent of the time).

Maximum Sound Level (L_{max}): L_{max} is the highest instantaneous sound level measured during a specified period.

Minimum Sound Level (L_{min}): L_{min} is the lowest instantaneous sound level measured during a specified period.

Day-Night Level (L_{dn}): L_{dn} is the energy average of A-weighted sound levels occurring over a 24-hour period, with a 10-dB “penalty” applied to A-weighted sound levels occurring during nighttime hours between 10 p.m. and 7 a.m.

Community Noise Equivalent Level (CNEL) or Day-Evening-Night Level (L_{den}): Similar to L_{dn} , CNEL or L_{den} is the energy average of the A-weighted sound levels occurring over a 24-hour period, with a 10-dB penalty applied to A-weighted sound levels occurring during the nighttime hours between 10 p.m. and 7 a.m. and a 5-dB penalty applied to the A-weighted sound levels occurring during evening hours between 7 p.m. and 10 p.m.

SEL (single-event (impulsive) noise level) – A receiver’s cumulative noise exposure from a single impulsive-noise event, which is defined as an acoustical event of short duration and which involves a change in sound pressure above some reference value.

5.9.4 Sound Propagation

When sound propagates over a distance, it changes in level and frequency content. The manner in which noise reduces with distance depends on the following factors.

GEOMETRIC SPREADING

Sound from a localized source (i.e., a point source) propagates uniformly outward in a spherical pattern. The sound level attenuates (or decreases) at a rate of 6 dBA for each doubling of distance from a point source. Roads and highways consist of several localized noise sources on a defined path and hence can be treated as a line source, which approximates the effect of several point sources, thus propagating at a slower rate in comparison to a point source. Noise from a line source propagates outward in a cylindrical pattern, often referred to as cylindrical spreading. Sound levels attenuate at a rate of 3 dBA for each doubling of distance from a line source.

GROUND ABSORPTION

The propagation path of noise from a source to a receiver is usually very close to the ground. Noise attenuation from ground absorption and reflective-wave canceling adds to the attenuation associated with geometric spreading. Traditionally, the excess attenuation has also been expressed in terms of attenuation per doubling of distance. This approximation is usually sufficiently accurate for distances of less than 200 feet. For acoustically hard sites (i.e., sites with a reflective surface between the source and the receiver, such as a parking lot or body of water), no excess ground attenuation is assumed. For acoustically absorptive or soft sites (i.e., those sites with an absorptive ground surface between the source and the receiver, such as soft dirt, grass, or scattered bushes and trees), an excess ground-attenuation value of 1.5 dBA per doubling of distance is normally assumed. When added to the cylindrical spreading, the excess ground attenuation results in an overall drop-off rate of 4.5 dBA per doubling of distance. This would hold true for point sources, resulting in an overall drop-off rate of up to 7.5 dBA per doubling of distance.

ATMOSPHERIC EFFECTS

Receivers located downwind from a source can be exposed to increased noise levels relative to calm conditions, whereas locations upwind can have lowered noise levels, as wind can carry sound. Sound levels can be increased at large distances (e.g., more than 500 feet) from the source because of atmospheric temperature inversion (i.e., increasing temperature with elevation). Other factors such as air temperature, humidity, and turbulence can also have significant effects.

SHIELDING BY NATURAL OR HUMAN-MADE FEATURES

A large object or barrier in the path between a noise source and a receiver can substantially attenuate noise levels at the receiver. The amount of attenuation provided by shielding depends on the size of the object and the frequency content of the noise source. Natural terrain features (e.g., hills and dense woods) and human-made features (e.g., buildings and walls) can substantially reduce noise levels. Walls are often constructed between a source and a receiver specifically to reduce noise. A barrier that breaks the line of sight between a source and a receiver will typically result in at least 5 dBA of noise reduction. Taller barriers provide increased noise reduction. Vegetation between the source and receiver is rarely effective in reducing noise because it does not create a solid barrier.

5.9.5 Environmental Setting

SENSITIVE LAND USES

Noise-sensitive land uses are generally considered to include those uses where noise exposure could result in health-related risks to individuals, as well as places where quiet is an essential element of their intended purpose. Residential dwellings are of primary concern because of the potential for increased and prolonged exposure of individuals to both interior and exterior noise levels. Additional land uses such as parks, schools, historic sites, cemeteries, and recreation areas are also generally considered sensitive to increases in exterior noise levels. Places of worship and transient lodging, and other places where low interior noise

levels are essential, are also considered noise-sensitive. Those noted above are also considered vibration-sensitive land uses in addition to commercial and industrial buildings where vibration would interfere with operations within the building, including levels that may be well below those associated with human annoyance. In addition, buildings of older age are more prone to vibration-induced damage.

Existing noise-sensitive receptors near the project area consist primarily of residential land uses located along its northern, western and southeastern boundaries. Natomas Charter School is located adjacent to the southwestern boundary of the project area, along Del Paso Road. Noise-sensitive land uses are identified in Exhibit 5.9-1. One sensitive receptor (northside of West Elkhorn Boulevard on Exhibit 5.9-1) is located within the County and near the project.

EXISTING AMBIENT NOISE

Regional noise sources include traffic-related noise on roadways and highways, airplanes flying overhead, and noise associated with typical residential development (e.g., people talking, dogs barking, children playing, yard maintenance equipment).

As discussed above, sound is affected by distance from the source, surrounding obstacles, and atmospheric properties. Thus, regional noise sources would not typically interfere or combine with noise sources within or near the project area. Therefore, noise sources and levels that would affect the project or nearby sensitive receptors are discussed below.

Local Setting

The sound levels in most communities fluctuate, depending on the activity of nearby and distant noise sources, time of the day, or season of the year. To characterize the existing environment, noise measurements were taken at various locations within the project site. A total of four short-term (15-minute) measurements were taken at four different locations, shown in Exhibit 5.9-1. Measurement location numbers identified in Exhibit 5.9-1 correspond to the measurement location numbers indicated in Table 5.9-3, which presents the results of the short-term ambient noise measurements. As shown in Table 5.9-3, the noise measurements captured sound generated from a variety of sources, including: roadway traffic, and industrial and residential activities. These noise sources are typical in the project area.

Noise level measurements were conducted in accordance with American National Standards Institute standards using a Larson Davis Laboratories (LDL) Model 820 precision integrating sound level meter. The sound level meter was calibrated before and after use with an LDL Model CAL200 acoustical calibrator. Meteorological conditions during the measurement period were adequate for reliable noise measurements, with clear skies, temperatures ranging from 80 degrees Fahrenheit (°F) to 85°F and no precipitation.

Table 5.9-3 Summary of Sound Level Noise Measurements

Measurement Site	Date	Time/Duration	Primary Noise Sources	Leq	Lmin	Lmax
ST-1	10/13/2016	3:22 p.m./15 min	Air traffic, Traffic along Club Center Drive.	44.8	36.3	58.5
ST-2	10/10/2016	2:00 p.m./15 min	Traffic along Del Paso Road, Construction at Natomas Charter School, Commercial activity across Del Paso Road	69.8	50.2	78.6
ST-3	10/10/2016	2:29 p.m./15 min	Traffic along West Elkhorn Boulevard and East Levee Road	74.7	46.8	88.6
ST-4	10/10/2016	2:58 p.m./15 min	Traffic along Sorento Road and Barros Drive	52.1	39.7	89.9

Source: Measurements conducted by Ascent Environmental in 2016.

Based on the measurements conducted, average daytime noise levels (L_{eq}) in the project area generally range from the mid-40s to the mid-70s, depending primarily on distance from nearby roadways and shielding of noise provided by nearby existing structures. The dominant daytime noise source in the project area is vehicular traffic on area roadways. Ambient daytime noise levels along the northern boundary of the project area, as measured at Site ST-3 shown in Exhibit 5.9-1, are also influenced by nearby existing industrial land uses, including activities conducted at the John Taylor Fertilizer plant, Syar Concrete, and Granite Construction Company, which are generally located east of the Panhandle Area along Elkhorn Boulevard. Occasionally, intermittent noise from amplified public address systems used at the Sacramento Auto Auction associated with sales events also contributes to daytime ambient noise levels. The Syar Concrete facility and the Sacramento Auto Auction site are identified on Exhibit 5.9-1.

EXISTING TRAFFIC NOISE

Table 5.9-4 summarizes the modeled existing traffic noise levels at 100 feet from the centerline of each major roadway in the project vicinity and lists distances from each roadway centerline to the 65, 60, and 55 CNEL traffic noise contours. Traffic noise modeling results are based on existing average daily traffic (ADT) volumes and were obtained from the project-specific traffic analysis conducted by DKS Associates and summarized in Section 5.11, "Transportation and Circulation," and in Appendix H of this DEIR.

As shown in Table 5.9-4, the Del Paso Road and Elkhorn Boulevard 60 CNEL contours would extend into a portion of the project site. In these areas, the City's noise standard for residential land uses is 60 CNEL. As shown in Exhibit 5.9-2, the 60-dBA contour for Del Paso Road and Elkhorn Boulevard covers portions of the southern and northern portion of the project area, respectively.

EXISTING CORONAL NOISE

In addition to stationary and roadway traffic noise sources, an electrical power-transmission line easement transects the project area, running in a north-south direction. During inclement weather conditions, corona noise generated by the electrical power-transmission lines may be detectable. Audible power line noise occurs because of corona discharge, characterized as a random crackling or hissing sound and is most noticeable with extra-high voltage lines of 345 kilovolt (kV), or above. Corona is the breakdown of air very near conductors and occurs when the electric field is locally intensified by irregularities on the conductor surface, such as the accumulation of moisture. Consequently, corona noise is most notable during inclement weather conditions (e.g., fog and rain). The highest noise levels typically generated by high-voltage lines during fair weather conditions would be below ambient noise level at ground level. During rain or fog, however, corona noise levels generated by high-voltage lines average approximately 46 dBA at approximately 50 feet from the power line (PG&E 2002).

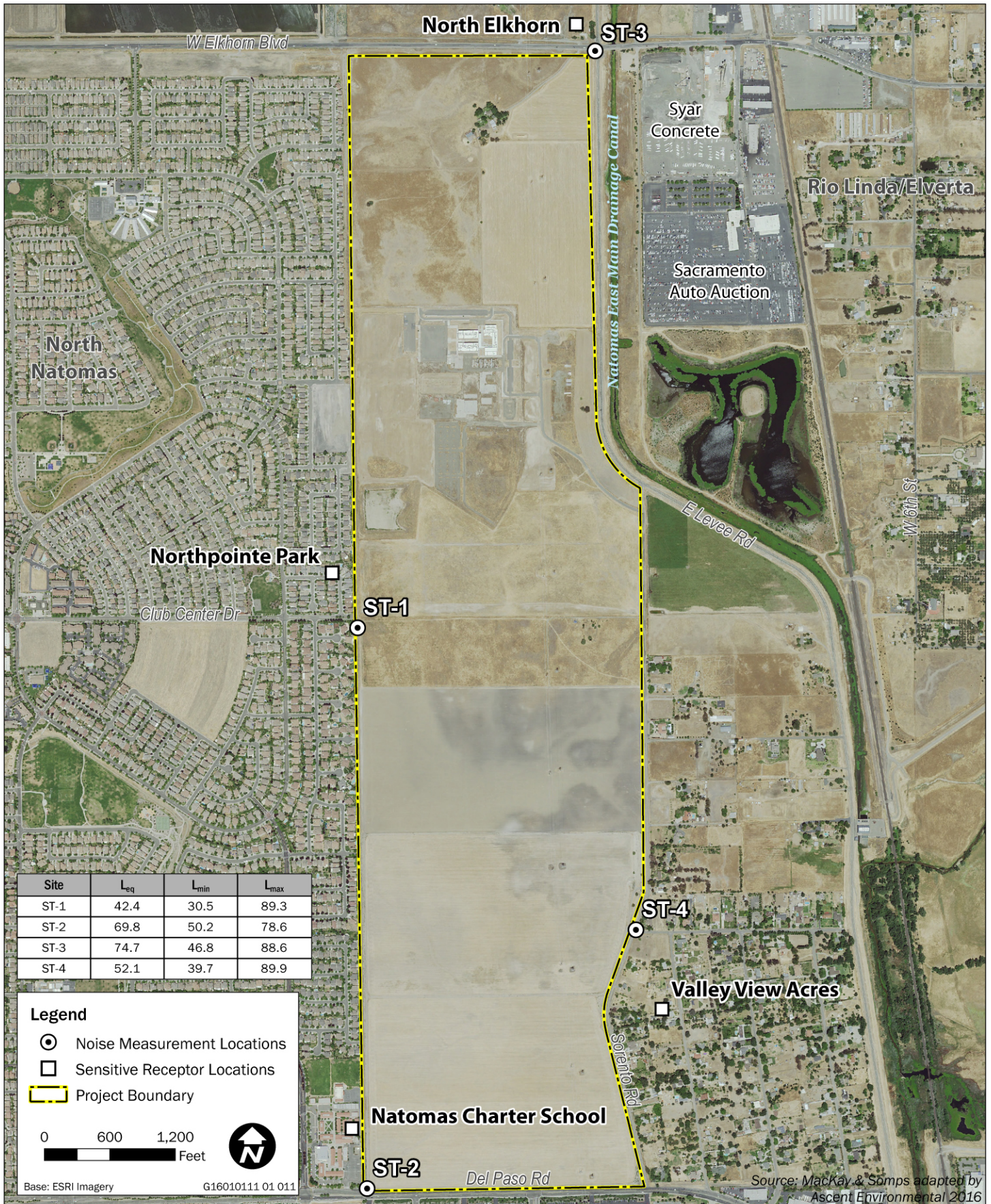


Exhibit 5.9-1

Noise Measurement Locations



Table 5.9-4 Summary of Modeled Existing Traffic Noise Levels

Roadway Segment/Segment Description	CNEL at 100 feet from Roadway Centerline	Distance (feet) from Roadway Centerline to CNEL Contour		
		65	60	55
Elkhorn Boulevard, SR-99 to E Commerce Way	64.7	95	205	442
Elkhorn Boulevard, Commerce Way to Northborough Drive	64.3	90	195	419
Elkhorn Boulevard, Northborough Drive to Natomas Boulevard	64.1	86	186	401
Elkhorn Boulevard, Natomas Boulevard to Sageview Drive	64.7	96	207	446
Elkhorn Boulevard, Sageview Drive to E Levee Road	64.3	90	193	416
Elkhorn Boulevard, E Levee Road to Marysville Boulevard	64.4	91	196	423
Natomas Boulevard, N Bend Drive to Club Center Drive	66.2	121	260	560
Natomas Boulevard, Club Center Drive to Elkhorn Boulevard	63.1	75	161	347
Del Paso Road, Truxel Road to Gateway Park Boulevard	65.2	104	224	482
Del Paso Road, Gateway Park Boulevard to Blackrock Drive	65.5	107	231	498
Del Paso Road, Blackrock Drive to National Drive	65.1	102	220	474
Del Paso Road, National Drive to Northgate Boulevard	65.1	102	219	473
Northgate Boulevard, Del Paso Rd to North Market Boulevard	64.2	89	191	411
Northgate Boulevard, North Market Boulevard to I-80	66.1	118	254	546
Main Ave, Northgate Boulevard to Norwood Avenue	63.4	79	170	365
Sageview Drive, Elkhorn Boulevard to Bridgecross Drive	54.6	20	44	94
Bridgecross Drive, East of Honor Parkway	50.1	10	22	47
Regency Park Circle, North of Club Center Drive	52.9	15	33	72
Danbrook Drive, South of Club Center Drive	52.7	15	33	70
Sorento Road (North of Del Paso Boulevard)	44.2	4	9	19
Club Center Drive (Danbrook Drive to Danbrook Drive)	54.0	18	40	85

Notes: CNEL = Community Noise Equivalent Level

All modeling assumes average pavement, level roadways (less than 1.5% grade), constant traffic flow, and does not account for shielding of any type or finite roadway adjustments. All noise levels are reported as A-weighted noise levels. For additional details, refer to Section 5.11, "Transportation and Circulation," and Appendix H for detailed traffic data, and traffic-noise modeling input data and output results.

Source: Data modeled by Ascent Environmental in 2017

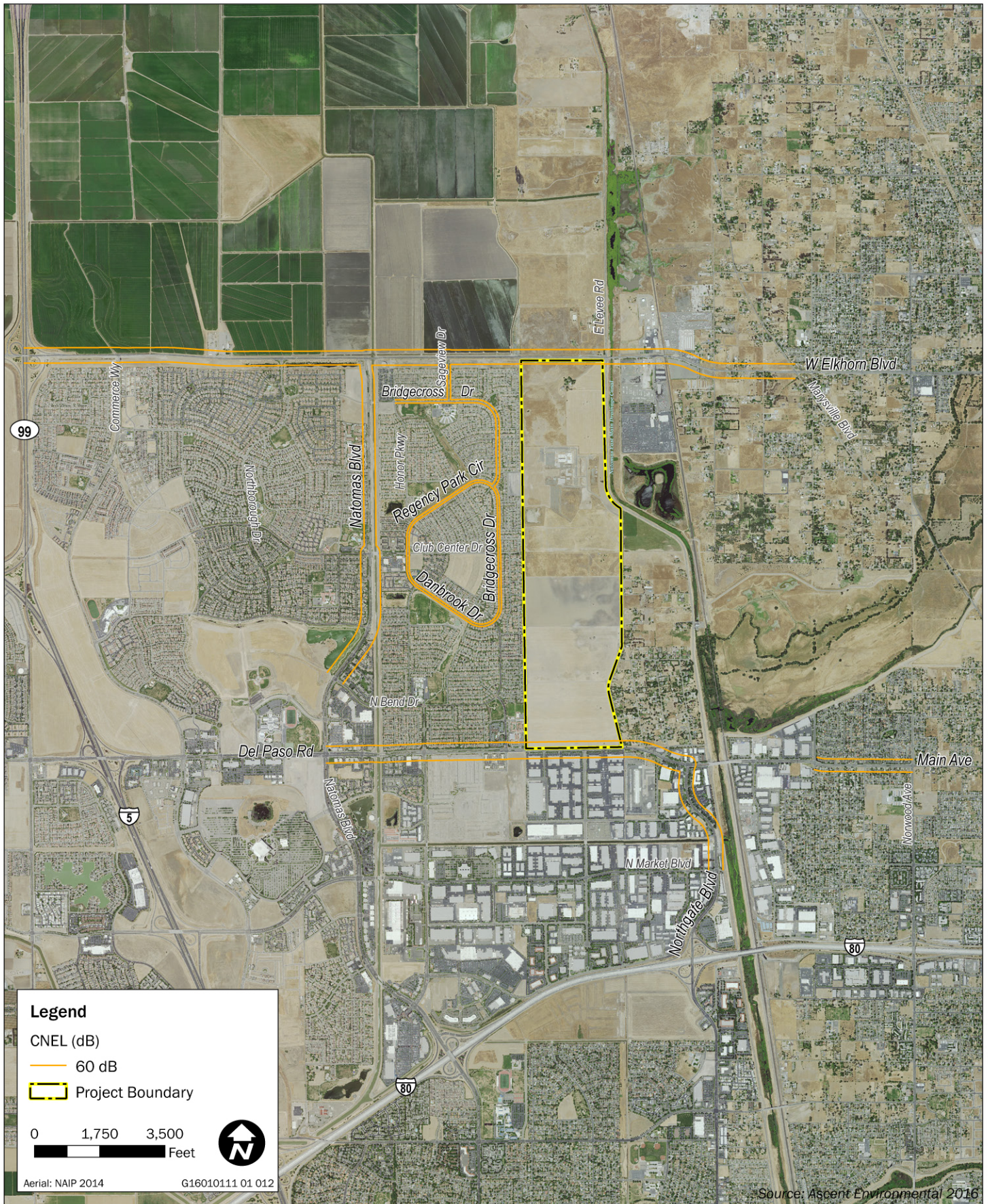


Exhibit 5.9-2

Noise Contours



5.9.6 Regulatory Setting

FEDERAL

The U.S. Environmental Protection Agency (EPA) Office of Noise Abatement and Control was originally established to coordinate Federal noise control activities. After its inception, EPA's Office of Noise Abatement and Control issued the Federal Noise Control Act of 1972, establishing programs and guidelines to identify and address the effects of noise on public health, welfare, and the environment. In 1981, EPA administrators determined that subjective issues such as noise would be better addressed at more local levels of government. Consequently, in 1982 responsibilities for regulating noise control policies were transferred to state and local governments. However, noise control guidelines and regulations contained in EPA rulings in prior years remain in place by designated federal agencies where relevant.

STATE

The State of California *General Plan Guidelines 2013* (Guidelines) promotes use of L_{dn} or CNEL for evaluating noise compatibility of various land uses with the expected degree of noise exposure. The designation of a level of noise exposure as "normally acceptable" for a given land use category implies that the expected interior noise would be acceptable to the occupants without the need for any special structural acoustic treatment. The Guidelines identify the suitability of various types of building construction relative to the range of customary outdoor noise exposures. The Guidelines provide each local community some leeway in setting local noise standards that allow for the variability in individual perceptions of noise in that community.

California Department of Transportation

In 2013, Caltrans published the Transportation and Construction Vibration Manual, which provides general guidance on vibration issues associated with construction and operation of projects in relation to human perception and structural damage. Table 5.9-5 below presents recommendations for levels of vibration that could result in damage to structures exposed to continuous vibration.

Table 5.9-5 Caltrans Recommendations Regarding Vibration Levels

PPV (in/sec)	Effect on Buildings
0.4-0.6	Architectural damage and possible minor structural damage
0.2	Risk of architectural damage to normal dwelling houses
0.1	Virtually no risk of architectural damage to normal buildings
0.08	Recommended upper limit of vibration to which ruins and ancient monuments should be subjected
0.006-0.019	Vibration unlikely to cause damage of any type

Notes: PPV (in/sec) = Peak Particle Velocity (inches per second)

Source: Caltrans 2013b

LOCAL

City of Sacramento 2035 General Plan

The Noise section of the *Sacramento 2035 General Plan* (City of Sacramento 2015) contains the following policies and standards related to noise that may be applicable to the project:

- ▲ EC 3.1.1 Exterior Noise Standards. The City shall require noise mitigation for all development where the projected exterior noise levels exceed those shown in Table EC 1 [as shown in Table 5.9-6 of this EIR], to the extent feasible.

Table 5.9-6 Exterior Noise Compatibility Standards for Various Land Uses

Land Use Type	Highest Level of Noise Exposure that is Regarded as “Normally Acceptable” ^a (L _{dn} ^b or CNEL ^c)
Residential—Low Density Single Family, Duplex, Mobile Homes	60 dBA ^{d,e}
Residential—Multi-family ^g	65 dBA
Urban Residential Infill ^h and Mixed-Use Projects ^{ij}	70 dBA
Transient Lodging—Motels, Hotels	65 dBA
Schools, Libraries, Churches, Hospitals, Nursing Homes	70 dBA
Auditoriums, Concert Halls, Amphitheaters	Mitigation based on site-specific study
Sports Arena, Outdoor Spectator Sports	Mitigation based on site-specific study
Playgrounds, Neighborhood Parks	70 dBA
Golf Courses, Riding Stables, Water Recreation, Cemeteries	75 dBA
Office Buildings—Business, Commercial and Professional	70 dBA
Industrial, Manufacturing, Utilities, Agriculture	75 dBA

Notes:

- ^a As defined in the Guidelines, “Normally Acceptable” means that the “specified land use is satisfactory, based upon the assumption that any building involved is of normal conventional construction, without any special noise insulation requirements.”
- ^b L_{dn} or Day Night Average Level is an average 24-hour noise measurement that factors in day and night noise levels.
- ^c CNEL or Community Noise Equivalent Level measurements are a weighted average of sound levels gathered throughout a 24-hour period.
- ^d Applies to the primary open space area of a detached single-family home, duplex, or mobile home, which is typically the backyard or fenced side yard, as measured from the center of the primary open space area (not the property line). This standard does not apply to secondary open space areas, such as front yards, balconies, stoops, and porches.
- ^e dBA or A-weighted decibel scale is a measurement of noise levels.
- ^f The exterior noise standard for the residential area west of McClellan Airport known as McClellan Heights/Parker Homes is 65 dBA.
- ^g Applies to the primary open space areas of townhomes and multi-family apartments or condominiums (private rear yards for townhomes; common courtyards, roof gardens, or gathering spaces for multi-family developments). These standards shall not apply to balconies or small attached patios in multistoried multi-family structures.
- ^h With land use designations of Central Business District, Urban Neighborhood (Low, Medium, or High) Urban Center (Low or High), Urban Corridor (Low or High).
- ⁱ All mixed-use projects located anywhere in the City of Sacramento
- ^j See notes d and g above for definition of primary open space areas for single-family and multi-family developments.

Source: OPR 2003

- EC 3.1.2 Exterior Incremental Noise Standards. The City shall require noise mitigation for all development that increases existing noise levels by more than the allowable increment shown in Table EC 2 [as shown in Table 5.9-7 of this EIR], to the extent feasible.

Table 5.9-7 Exterior Incremental Noise Impact Standards for Noise-Sensitive Uses (dBA)

Residences and Buildings where People Normally Sleep ¹		Institutional Land Uses with Primarily Daytime and Evening Uses ²	
Existing L _{dn}	Allowable Noise Increment	Existing Peak Hour L _{eq}	Allowable Noise Increment
45	8	45	12
50	5	50	9
55	3	55	6
60	2	60	5
65	1	65	3
70	1	70	3
75	0	75	1
80	0	80	0

Notes:

^a This category includes homes, hospitals, and hotels where a nighttime sensitivity to noise is assumed to be of utmost importance.

^b The category includes schools, libraries, theaters, and churches where it is important to avoid interference with such activities as speech, meditation, and concentration on reading material.

Source: FTA 2006

- EC 3.1.3 Interior Noise Standards. The City shall require new development to include noise mitigation to assure acceptable interior noise levels appropriate to the land use type: 45 L_{dn} (with windows closed) for residential, transient lodgings, hospitals, nursing homes and other uses where people normally sleep; and 45 L_{eq} (peak hour with windows closed) for office buildings and similar uses.
- EC 3.1.5 Interior Vibration Standards. The City shall require construction projects anticipated to generate a significant amount of vibration to ensure acceptable interior vibration levels at nearby residential and commercial uses based on the current City or Federal Transit Administration (FTA) criteria.
- EC 3.1.6 Effects of Vibration. The City shall consider potential effects of vibration when reviewing new residential and commercial projects that are proposed in the vicinity of rail lines or light rail lines.
- EC 3.1.7 Vibration. The City shall require an assessment of the damage potential of vibration-induced construction activities, highways, and rail lines in close proximity to historic buildings and archaeological sites and require all feasible measures be implemented to ensure no damage would occur.
- EC 3.1.8 Operational Noise. The City shall require mixed-use, commercial, and industrial projects to mitigate operational noise impacts to adjoining sensitive uses when operational noise thresholds are exceeded.
- EC 3.1.10 Construction Noise. The City shall require development projects subject to discretionary approval to assess potential construction noise impacts on nearby sensitive uses and to minimize impacts on these uses, to the extent feasible.
- EC 3.1.11 Alternatives to Sound Walls. The City shall encourage the use of design strategies and other noise reduction methods along transportation corridors in lieu of sound walls to mitigate noise impacts and enhance aesthetics.

City of Sacramento Code (Chapter 6.68, Noise Control)

Section 8.68.060 of the City of Sacramento Code contains exterior noise standards for specific zoning districts (Table 5.9-8) (City of Sacramento, 2016).

8.68.060 Exterior noise standards.

- A. The following noise standards, unless otherwise specifically indicated in this article, shall apply to all agricultural and residential properties.
1. From seven a.m. to ten p.m. the exterior noise standard shall be fifty-five (55) dBA.
 2. From ten p.m. to seven a.m. the exterior noise standard shall be fifty (50) dBA.
- B. It is unlawful for any person at any location to create any noise which causes the noise levels when measured on agricultural or residential property to exceed, for the duration of time set forth following, the specified exterior noise standards in any one hour by:

Table 5.9-8 Exterior Noise Standards

Cumulative Duration of the Intrusive Sound	Allowance Decibels
Cumulative period of 30 minutes per hour	0
Cumulative period of 15 minutes per hour	+5
Cumulative period of 5 minutes per hour	+10
Cumulative period of 1 minute per hour	+15
Level not to be exceeded for any time per hour	+20

- C. Each of the noise limits specified in subsection B of this section shall be reduced by five dBA for impulsive or simple tone noises, or for noises consisting of speech or music.
- D. If the ambient noise level exceeds that permitted by any of the first four noise limit categories specified in subsection B of this section, the allowable noise limit shall be increased in five dBA increments in each category to encompass the ambient noise level. If the ambient noise level exceeds the fifth noise level category, the maximum ambient noise level shall be the noise limit for that category.

8.68.080 Exemptions.

The following activities shall be exempted from the provisions of this chapter:

- A. School bands, school athletic and school entertainment events. School entertainment events shall not include events sponsored by student organizations;
- B. Activities conducted on parks and public playgrounds, provided such parks and public playgrounds are owned and operated by a public entity;
- C. Any mechanical device, apparatus or equipment related to or connected with emergency activities or emergency work;
- D. Noise sources due to the erection (including excavation), demolition, alteration or repair of any building or structure between the hours of seven a.m. and six p.m., on Monday, Tuesday, Wednesday, Thursday, Friday and Saturday, and between nine a.m. and six p.m. on Sunday; provided, however, that the operation of an internal combustion engine shall not be exempt pursuant to this subsection if such engine is not equipped with suitable exhaust and intake silencers which are in good working order. The director of building inspections, may permit work to be done during the hours not exempt by this subsection in the case of urgent necessity and in the interest of public health and welfare for a period

not to exceed three days. Application for this exemption may be made in conjunction with the application for the work permit or during progress of the work;

- G. Noise sources associated with maintenance of street trees and residential area property provided said activities take place between the hours of seven a.m. and six p.m.;
- H. Tree and park maintenance activities conducted by the city department of parks and community services; provided, however, that use of portable gasoline powered blowers within two hundred (200) feet of residential property shall comply with the requirements of Section 8.68.150 of this chapter.

Sacramento County General Plan

The Noise Element of the *Sacramento County General Plan* (Sacramento County 2011) contains the following policies and standards related to noise that may be applicable to the project's noise relationship to adjoining areas not in the City:

- ▲ Policy NOI-6. Where a project would consist of or include non-transportation noise sources, the noise generation of those sources shall be mitigated so as not exceed the interior and exterior noise level standards of Table 5.9-9 at existing noise-sensitive areas in the project vicinity.
- ▲ Policy NOI-7. The "last use there" shall be responsible for noise mitigation. However, if a noise-generating use is proposed adjacent to lands zoned for uses which may have sensitivity to noise, then the noise-generating use shall be responsible for mitigating its noise generation to a state of compliance with the Table 3 standards at the property line of the generating use in anticipation of the future neighboring development.

In addition to the policies listed above, Sacramento County has established noise standards for land uses affected by non-transportation noise, as shown in Table 5.9-9; transportation noise, as shown in Table 5.9-10; and the significant incremental increase in traffic noise, as shown in Table 5.9-11.

Table 5.9-9 Non-Transportation Noise Standards Median (L₅₀)/Maximum (L_{max})¹

Receiving Land Use	Outdoor Area ²		Interior ³
	Daytime	Nighttime	Day/Night
All Residential	55/75	50/70	35/55
Transient Lodging ⁴	55/75	-	35/55
Hospitals & Nursing Homes ^{5,6}	55/75	-	35/55
Theaters & Auditoriums ⁶	-	-	30/50
Churches, Meeting Halls, Schools, Libraries, etc. ⁶	55/75	-	35/60
Office Buildings ⁶	60/75	-	45/65
Commercial Buildings ⁶	-	-	45/65
Playgrounds, Parks, etc. ⁶	65/75	-	-
Industry ⁶	60/80	-	50/70

Notes: L₅₀= noise level that occurs 50% of the time during measurement duration; L_{max}= the maximum instantaneous noise level

¹ Standards in this table shall be reduced by 5 dBA for sounds consisting primarily of speech or music, and for recurring impulsive sounds. If the existing ambient noise level exceeds the standards of this table, then the noise level standards shall be increased at 5 dBA increments to encompass the ambient.

² The primary outdoor activity area associated with any given land use at which noise-sensitivity exists and the location at which the County's exterior noise level standards are applied.

³ The primary outdoor activity area associated with any given land use at which noise-sensitivity exists and the location at which the County's exterior noise level standards are applied.

⁴ Outdoor activity areas of transient lodging facilities are not commonly used during nighttime hours.

Table 5.9-9 Non-Transportation Noise Standards Median (L₅₀)/Maximum (L_{max})¹

Receiving Land Use	Outdoor Area ²		Interior ³
	Daytime	Nighttime	Day/Night
<p>⁵ Hospitals are often noise-generating uses. The exterior noise level standards for hospitals are applicable only at clearly identified areas designated for outdoor relaxation by either hospital staff or patients.</p> <p>⁶ Hospitals are often noise-generating uses. The exterior noise level standards for hospitals are applicable only at clearly identified areas designated for outdoor relaxation by either hospital staff or patients.</p> <p>⁷ Where median (L₅₀) noise level data is not available for a particular noise source, average (L_{eq}) values may be substituted for the standards of this table provided the noise source in question operates for at least 30 minutes of an hour. If the source in question operates less than 30 minutes per hour, then the maximum noise level standards shown would apply.</p> <p>Source: Sacramento County 2011</p>			

Table 5.9-10 Noise Standards for New Uses Affected by Traffic and Railroad Noise

New Land Use	Sensitive ¹ Outdoor Area (L _{dn})	Sensitive ² Interior Area (L _{dn})	Notes
All Residential	65	45	5
Transient Lodging	65	45	3, 5
Hospitals and Nursing Homes	65	45	3, 4, 5
Theaters and Auditoriums	–	35	3
Churches, Meeting Halls, Schools, Libraries, etc.	65	40	3
Office Buildings	65	45	3
Commercial Buildings	–	50	3
Playgrounds, Parks, etc.	70	–	–
Industry	65	50	3

Notes:

- ¹ Sensitive areas are defined in acoustic terminology section.
- ² Interior noise level standards are applied within noise-sensitive area of the various land uses, with windows and doors in the closed positions.
- ³ Where there are no sensitive exterior spaces proposed for these uses, only the interior noise level standard shall apply.
- ⁴ Hospitals are often noise-generating uses. The exterior noise level standards for hospitals are applicable only at clearly identified areas designated for outdoor relaxation by either hospital staff or patients.
- ⁵ If this use is affected by railroad noise, a maximum (L_{max}) noise level standard of 70 dBA shall be applied to all sleeping rooms to reduce the potential for sleep disturbance during nighttime train passages.

Source: FTA 2006

Table 5.9-11 Significance Increase in Transportation Noise

Pre-Project Noise Environment (L _{dn})	Significant Increase
Less than 60 dBA	5+ dBA
60-65 dBA	3+ dBA
Greater than 65 dBA	1.5+ dBA

Notes: L_{dn}= day-night average noise level

Source: Sacramento County 2011

Sacramento County Code

Section 6.68.070 of the Sacramento County Code contains exterior noise standards for specific zoning districts (Table 5.9-12) (Sacramento County 2016).

Table 5.9-12 Exterior Noise Standards

Noise Area	County Zoning Districts	Time Period	Exterior Noise Standard
1	RE-1, RD-1, RE-2, RD-2, RE-3, RD-3, RD-4, R-1-A, RD-5, R-2, RD-10, R-2A, RD-20, R-3, R-D-30, RD-40, RM-1, RM-2, A-1-B, AR-1, A-2, AR-2, A-5, AR-5	7 a.m.-10 p.m.	55 dBA
		10 p.m.-7 a.m.	50 dBA

Source: Sacramento County 2016

Section 6.68.090 of the Sacramento County Code provides the following exemption to the exterior noise standards:

Noise sources associated with construction, repair, remodeling, demolition, paving or grading of any real property, provided said activities do not take place between the hours of eight p.m. and six a.m. on weekdays and Friday commencing at eight p.m. through and including seven a.m. on Saturday; Saturdays commencing at eight p.m. through and including seven a.m. on the next following Sunday and on each Sunday after the hour of eight p.m. Provided, however, when an unforeseen or unavoidable condition occurs during a construction project and the nature of the project necessitates that work in process be continued until a specific phase is completed, the contractor or owner shall be allowed to continue work after eight p.m. and to operate machinery and equipment necessary until completion of the specific work in progress can be brought to conclusion under conditions which will not jeopardize inspection acceptance or create undue financial hardships for the contractor or owner.

5.9.7 Impacts and Mitigation Measures

SIGNIFICANCE CRITERIA

Based on the Appendix G of the State CEQA Guidelines, noise policies and standards in the City and County of Sacramento General Plans and Municipal Codes, and Caltrans and FTA vibration standards, the project would result in a significant impact related to noise or vibration if it would:

- ▲ expose persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;
- ▲ expose persons to or generation of excessive groundborne vibration or groundborne noise levels;
- ▲ result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project;
- ▲ result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without project;
- ▲ for a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, expose people residing or working in the project area to excessive noise levels;
- ▲ for a project within the vicinity of a private airstrip, expose people residing or working in the project area to excessive noise levels; or

- ▲ conflict or create an inconsistency, with any applicable plan, policy, or regulation adopted for the purpose of avoiding or mitigating environmental effects related to noise and vibration.

METHODS AND ASSUMPTIONS

To assess potential construction and operational noise impacts, sensitive receptors and their relative exposure were identified. Noise levels of specific equipment expected to be used during site construction and operation were determined and resultant noise levels at sensitive receptors were calculated assuming a noise attenuation rate of 6 dBA per doubling of distance from the source.

The Krumenacher Ranch site is not proposed for development as part of this project. For the purposes of this analysis, the Krumenacher Ranch site was assumed to be developed with residential land uses in the future.

To address the checklist questions in Appendix G of the CEQA Guidelines, the following City, County, and State noise and vibration standards were used to determine whether implementation of the project would result in a significant noise impact:

Short-term Construction Noise Impacts: Short-term construction noise impacts would be considered significant if construction-generated noise would exceed City or County noise standards (City of Sacramento Municipal Code Section 8.68.060 Exterior Noise Standards, County of Sacramento Municipal Code Section 6.68.070 Exterior Noise Standards) during evening or nighttime hours (i.e., outside of hours considered exempt [7:00 a.m. to 6:00 p.m. Monday through Saturday and 9:00 a.m. to 6:00 p.m. on Sunday]). This impact analysis also includes consideration of noise impacts to dwelling units that become inhabited on the site while other on-site land uses are under construction.

Long-term Traffic Noise Impacts: Long-term traffic noise impacts would be considered significant if project-generated traffic would:

- ▲ cause noise-sensitive receptors located in the City to be exposed to traffic noise levels that exceed the City's applicable exterior CNEL standard, as listed in Table 5.9-6;
- ▲ result in a traffic noise level increase at a noise-sensitive receptor located in the City that exceeds the City's applicable incremental increase standard, as listed in Table 5.9-7;
- ▲ cause noise-sensitive receptors located in the County to be exposed to traffic noise levels that exceed the applicable County transportation CNEL standards, as listed in Table 5.9-10; or
- ▲ result in a traffic noise level increase at a noise-sensitive receptor located in the County that exceeds the County's applicable incremental increase standard for transportation noise, as listed in Table 5.9-11.

Long-term Stationary-Source Noise Impacts: Long-term stationary-source noise impacts would be considered significant if predicted noise levels would exceed City or County noise standards (City of Sacramento Municipal Code Section 8.68.060 Exterior Noise Standards, County of Sacramento Municipal Code Section 6.68.070 Exterior Noise Standards).

Land Use Compatibility:

Land use compatibility noise impacts would be considered significant if predicted traffic noise impacts would exceed the City of Sacramento General Plan exterior noise standard for low density residential of 60 L_{dn} /CNEL or the City's exterior noise standards for schools, neighborhood parks, and commercial land uses of 70 L_{dn} /CNEL.

Additionally, land use compatibility noise impacts would be considered significant if predicted stationary noise levels would exceed City daytime and nighttime stationary-source noise standards for single-family residential dwellings of 55 and 50 L_{eq} , respectively. Intermittent noise levels at residential land uses are not to exceed 75 L_{max} in the daytime and 70 L_{max} at night.

ISSUES DISMISSED FROM FURTHER CONSIDERATION

No major sources of vibration would be part of the project and project construction would not include vibration-intensive activities such as blasting or pile driving. Thus, the project would not result in excessive vibration or vibration levels such that any receptors would be adversely affected and vibration-related impacts are not discussed further in this Draft EIR.

The project site is not located within two miles of an active public or private airstrip. The closest airport is Rio Linda Airport, a small public use airport located east of the project site. Sacramento International Airport is located approximately 4.5 miles from the project site. Thus, the project would not result in the exposure of people residing or working in the project area to excessive aircraft-related noise levels. This issue is not discussed further in this Draft EIR.

PROJECT IMPACTS AND MITIGATION MEASURES

Impact 5.9-1: Short-term construction noise impacts

Short-term construction-generated noise levels could result in a substantial increase in ambient noise levels at future on-site and existing off-site sensitive land uses that could generate substantial and exceed applicable noise standards. Thus, this would be a **significant** impact.

Construction of the proposed uses within the Panhandle Planned Unit Development (PUD) (e.g., residential and commercial uses, schools, parks, internal roadways and on-site infrastructure improvements) would result in construction noise that is generally short-term and temporary in nature.

Proposed construction activities would result in noise from heavy-duty construction equipment (measured from the property line of the site). Construction noise in any one particular area would be temporary and would include noise from activities such as excavation, site preparation, truck hauling of material, pouring of concrete, and use of power hand tools. Pile driving or rock blasting is not anticipated to occur as part of project construction. Construction noise typically occurs intermittently and varies depending on the nature of the construction activities being performed. Noise is generated by construction equipment, including excavation equipment, material handlers, and portable generators.

When noise levels generated by construction operations are being evaluated, activities occurring during the more noise-sensitive evening and nighttime hours are of increased concern. Because exterior ambient noise levels typically decrease during the late evening and nighttime hours as community activities (e.g., industrial activities, vehicle traffic) decrease, construction activities performed during these more noise-sensitive periods of the day can result in increased annoyance and potential sleep disruption for occupants of nearby sensitive receptors.

Based on the types of construction activities associated with the project (e.g., paving, earth moving, trenching, structure erection) it is expected that the primary sources of noise would include backhoes, dozers, graders, excavators, dump trucks, pavers and various trucks (e.g., job trucks, water trucks, fuel trucks). Noise levels generated by these types of construction equipment are shown in Table 5.9-13.

Table 5.9-13 Noise Emission Levels from Construction Equipment

Equipment Type	Typical Noise Level (dBA) at 50 feet
Backhoe	80
Dozer	85
Grader	85
Dump Truck	84
Paver	85
Excavator	85
Trucks	74-88

Notes: Assumes all equipment is fitted with a properly maintained and operational noise control device, per manufacturer specifications. Noise levels listed are manufacture-specified noise levels for each piece of heavy construction equipment.

Source: FTA 2006

Based on the information provided in Table 5.9-13, and accounting for typical usage factors of individual pieces of equipment and activity types, if the five loudest pieces of noise equipment were operated simultaneously, the combined noise level could be as high as 92 L_{max} at 50 feet from the construction site. The sensitive receptors identified in Exhibit 5.9-1 to the east and west of the project site are located within 50 feet of the project site boundary, and thus, could experience noise levels as high as 92 L_{max} when construction activities are occurring on the portion of the project site immediately adjacent to these sensitive receptors. Additionally, on-site residences that are constructed and inhabited before other portions of the project are complete could also experience similar noise levels.

Thus, sensitive receptors could experience construction-generated noise levels that exceed the City and County daytime exterior noise standards of 55 L_{eq} and 75 L_{max} . Additionally, noise generated by construction activity could exceed City and County nighttime noise standards of 50 L_{eq} and 70 L_{max} , if such construction activities were to occur during the more noise-sensitive nighttime hours.

Applying the City of Sacramento Code, *Section 8.68.080 Exemptions* for project construction, noise is exempt during the timeframes of 7:00 a.m. and 6:00 p.m., Monday through Saturday, and 9:00 a.m. through 6:00 p.m. on Sunday. However, nighttime construction activities are not exempt and would be subject to the City and County nighttime noise standards. Thus, depending on the activities being performed, as well as the duration and hours during which activities occur, construction generated noise levels at nearby existing or proposed residences could violate applicable noise standards. Additionally, activities occurring during the evening and nighttime hours, when people are more sensitive to noise, could result in increased levels of annoyance and sleep disruption to occupants of nearby residences. As a result, noise-generating construction activities would be considered to have a **significant** impact.

Mitigation Measure 5.9-1a: Implement construction-noise reduction measures.

To minimize noise levels during construction activities, the City shall require the project developer and their construction contractors to comply with the following measures during all construction work:

- ▲ All construction equipment and equipment staging areas shall be located as far as feasible 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 manufacturer's recommendations. Equipment engine shrouds shall be closed during equipment operation.

- ▲ 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) where feasible and consistent with building codes and other applicable laws and regulations.
- ▲ Construction activities shall comply with the requirements of the City of Sacramento Municipal Code.
- ▲ To the maximum extent feasible, construction activity shall take place within the City of Sacramento construction noise exemption timeframes (i.e., 7:00 a.m. and 6:00 p.m., Monday through Saturday, and between 9:00 a.m. and 6:00 p.m. Sunday).

Mitigation Measure 5.9-1b: Implement construction-noise reduction measures during noise-sensitive time periods

For all construction activity that would take place outside of the City of Sacramento construction noise exemption timeframes (i.e., 7:00 a.m. and 6:00 p.m., Monday through Saturday, and between 9:00 a.m. and 6:00 p.m. Sunday), and that is anticipated to generate more than 50 L_{eq} or 70 L_{max} at 50 feet, the City shall require the project developer and their construction contractors to comply with the following measures:

- ▲ Consistent with Section 8.68.080, Exemptions, of the City of Sacramento Code, obtain an exemption to Article II Noise Standards for nighttime construction. Exemption applications for work to be performed during the hours not exempt by Section 8.68.080 shall be approved by the City's director of building inspections and shall not exceed three days. Application for this exemption may be made in conjunction with the application for work permit or during the construction process.
- ▲ Implement noticing to adjacent landowners and implement conditions included in the exemption, if approved by the City's director of building inspections.
- ▲ Install temporary noise curtains as close as feasible to the boundary of the construction site blocking the direct line of sight between the source of noise and the nearest noise-sensitive receptor(s). Temporary noise curtains shall consist of durable, flexible composite material featuring a noise barrier layer bounded to sound-absorptive material on one side. The noise barrier layer shall consist of rugged, impervious, material with a surface weight of at least one pound per square foot.
- ▲ Noise-reducing enclosures and techniques shall be used around stationary noise-generating equipment (e.g., concrete mixers, generators, compressors).
- ▲ Operate heavy-duty construction equipment at the lowest operating power possible.

Significance after Mitigation

Implementation of mitigation measures 5.9-1a and 5.9-1b would provide substantial reductions in day and nighttime construction noise levels by ensuring proper equipment use; locating equipment away from sensitive land uses; and requiring the use of enclosures, shields, and noise curtains. These mitigation measures are consistent with City General Plan Policy EC 3.1.10 that require the minimization of construction on nearby sensitive receptors. However, construction activities could occur immediately adjacent to existing residential uses to the west and east of the project area (within 50 feet), as well as on-site residences that are constructed and inhabited before other portions of the project are complete. Although, noise reduction would be achieved with implementation of mitigation measures 5.9-1a and 5.9-1b, reductions of up to 38 dBA would be required during some of the more intensive nighttime construction (e.g., during the most intense construction periods, and during roadway construction and improvement projects), to comply with the City and County nighttime standards of 50 L_{eq} and 70 L_{max} . Reductions of this magnitude are not expected to be achieved under all circumstances with implementation of mitigation measures 5.9-1a and 5.9-1b. No other feasible mitigation is available; therefore, this impact would remain **significant and unavoidable**.

Impact 5.9-2: Exposure of existing sensitive receptors to excessive traffic noise levels and/or substantial increases in traffic noise

Implementation of the project could expose existing sensitive receptors to substantial increases in transportation noise levels that exceed the City and County of Sacramento noise standards, and result in project-generated transportation noise levels that exceed City and County of Sacramento allowable noise increment standards. Therefore, this impact would be **significant**.

Project-generated vehicle trips would result in an increase in ADT volumes on affected roadway segments and an increase in traffic source noise levels. To analyze the impact of operation project-generated transportation noise sources, traffic noise levels under existing and existing-plus-project conditions were modeled for affected roadway segments. For further details on traffic volumes and conditions, see Section 5.11, "Transportation and Circulation."

Table 5.9-14 summarizes the modeled traffic noise levels at the nearest off-site sensitive receptors from the roadway centerlines under existing and existing plus project conditions, along with the overall net change in noise level as a result of the added traffic generated by the project. The modeling accounts for noise attenuation provided by existing sound walls, where present.

Table 5.9-14 Summary of Modeled Traffic Noise Levels under Existing and Existing Plus Project Conditions

Segment Description	Exterior CNEL/ L_{dn} Noise Standard (dBA) ^{1,2}	Allowable Exterior CNEL Noise Standard Increment (dBA)	CNEL (dBA) at Nearest Sensitive Receptor ⁴		Change (dBA)
			Existing No Project	Existing +Project	
Elkhorn Boulevard (SR 99 to East Commerce Way)	60	3	51.7	51.9	0.2
Elkhorn Boulevard (East Commerce Way to Northborough Drive)	60	3	51.4	51.6	0.2
Elkhorn Boulevard (Northborough Drive to Natomas Boulevard)	60	3	51.1	51.3	0.2
Elkhorn Boulevard (Natomas Boulevard to Sageview Drive)	60	3	51.8	51.7	-0.1
Elkhorn Boulevard (Sageview Drive to E. Levee Road)	60, 65 ³	3	63.5	64.8	1.3
Elkhorn Boulevard (E. Levee Road to Marysville Boulevard)	65 ³	1.5	68.1	68.8	0.7
Natomas Boulevard (North Bend Drive to Club Center Drive)	60	1	62.3	62.5	0.2
Natomas Boulevard (Club Center Drive to Elkhorn Boulevard)	60	2	59.2	58.9	-0.3
Del Paso Road (Truxel Road to Gateway Park Boulevard)	60	2	59.4	59.6	0.2
Del Paso Road (Gateway Park Boulevard to Black Rock Drive)	60	2	59.6	60.9	1.3
Del Paso Road (Black Rock Drive to National Drive)	70	3	64.3	63.8	-0.5
Del Paso Road (National Drive to Northgate Boulevard)	60	1	64.3	65.5	1.2
Northgate Boulevard (Del Paso Road to North Market Boulevard)	70	3	63.4	64.1	0.7
Northgate Boulevard (North Market Boulevard to I-80)	70	3	65.2	65.7	0.5
Main Avenue (Northgate Boulevard to Norwood Avenue)	60	1	64.5	64.5	0.0
Sageview Drive (Elkhorn Boulevard to Bridgecross Drive)	60	2	55.6	49.9	-5.7
Bridgecross Drive (East of Honor Parkway)	60	2	56.1	55.8	-0.3
Regency Park Circle (North of Club Center Drive)	60	2	55.4	55.6	0.2
Danbrook Drive (South of Club Center Drive)	60	2	58.7	57.4	-1.3
Sorento Road (North of Del Paso Road)	60	8	43.4	55.3	11.9
Club Center Drive (Danbrook Drive to Danbrook Drive)	60	3	53.2	54.7	1.5

Table 5.9-14 Summary of Modeled Traffic Noise Levels under Existing and Existing Plus Project Conditions

Segment Description	Exterior CNEL/ L_{dn} Noise Standard (dBA) ^{1,2}	Allowable Exterior CNEL Noise Standard Increment (dBA)	CNEL (dBA) at Nearest Sensitive Receptor ⁴		Change (dBA)
			Existing No Project	Existing +Project	

Notes: CNEL = Community Noise Equivalent Level; dBA = A-weighted decibels;

¹ 60 CNEL – Standard for Single Family Residential Exterior Noise Standard per City of Sacramento General Plan.

² 70 CNEL– Standard for Commercial Standard Exterior Noise Standard per City of Sacramento General Plan.

³ 65 L_{dn} – Standard for All Residential Land Uses at Sensitive Outdoor Area per County of Sacramento General Plan.

⁴ Accounts for 5 dBA decrease in noise levels where existing sound walls are located.

Refer to Section 5.11, “Transportation and Circulation,” and Appendix G for detailed traffic data, and traffic-noise modeling input data and output results.

Source: Data modeled by Ascent Environmental, Inc. in 2017

Interior noise levels would not exceed the standard of 45 CNEL, given that the typical construction of this type of home provides at least 24 dBA exterior-to-interior attenuation (EPA 1978:11). Therefore, exterior noise levels would need to be at least 69 dBA for the interior noise standards to be exceeded, which based on the traffic noise modeling shown in Table 5.9-14, no existing residences would experience noise surpassing that level.

As shown in Table 5.9-14, project-generated traffic would result in an exceedance of the City exterior incremental noise standards for noise-sensitive uses (see Table 5.9-7) for the following roadway segments:

- ▲ Del Paso Road (National Drive to Northgate Boulevard), and
- ▲ Sorento Road (north of Del Paso Road)

As shown in Table 5.9-14, project-generated traffic would result in an exceedance of the City exterior noise compatibility standards (see Table 5.9-6) for the segment of Del Paso Road (Gateway Park Boulevard to Black Rock Drive) that currently complies with City of Sacramento noise standards:

Thus, project-generated traffic would result in the exceedance of the City of Sacramento General Plan standards for the existing noise-sensitive land uses along these roadway segments. Therefore, existing sensitive receptors could potentially be exposed to noise levels that exceed applicable City of Sacramento noise standards. This impact would be **significant**.

Mitigation Measure 5.9-2: Reduce noise exposure to existing sensitive receptors from project-generated traffic

The project developer shall in coordination with the City implement the following measures to reduce the effect of noise levels generated by on-site stationary noise sources:

- ▲ Construct outdoor sound barriers at the following locations:
 - Between the segment of Del Paso Road from Sorento Road to Carey Road, and the ground level receptors directly north of this segment of roadway.
 - Between the segment of Sorento Road from Del Paso Road to East Levee Road, and the ground level receptors directly east of this segment of roadway.

The applicant in coordination with the City shall offer the owners of all the residences with addresses along this roadway segment the installation of a sound barrier along the property line of their affected residential properties. At a minimum, the sound barriers shall be just tall enough to break the line of sight between vehicles traveling along this segment of roadway and the existing sensitive receptors to the east of the roadway. The sound barriers shall be constructed of solid material (e.g., wood, brick,

adobe, an earthen berm, boulders, or combination thereof). The reflectivity of each sound barrier shall be minimized to ensure that traffic noise reflected off the barrier does not contribute to an exceedance of applicable noise standards at other off-site receptors. The level of sound reflection from a barrier can be minimized with a textured or absorptive surface or with vegetation on or next to the barrier. All barriers shall blend into the overall landscape and have an aesthetically pleasing appearance that agrees with the character of the surrounding area, and not become the dominant visual element of the area. The owners of the affected properties may choose to refuse this offer; however, the offer shall be made available to subsequent owners of the property if change of ownership occurs before project construction is complete. If an existing owner refuses these measures, a deed notice must be included with any future sale of the property to comply with California state real estate law, which requires that sellers of real property disclose "any fact materially affecting the value and desirability of the property" (California Civil Code, Section 1102.1[a]) and shall indicate that the applicant agrees to install a sound barrier, as described above.

- ▲ The majority of residences along the east side of the segment of Sorento Road from Del Paso Road to East Levee Road have ingress and egress points (driveways) along the roadway of concern, thus, preventing continuous sound barriers from being constructed. Therefore, in addition to the sound barriers described above, the applicant in coordination with the City shall offer the owners of all the residences with driveways along this roadway segment the installation of solid driveway gates to provide additional noise attenuation where sound barriers are not able to be constructed. The driveway gates must be constructed of solid material (e.g., wood, metal, or combination thereof) and designed to ensure maximum noise attenuation. The owners of the affected properties may choose to refuse this offer; however, the offer shall be made available to subsequent owners of the property if change of ownership occurs before project construction is complete. If an existing owner refuses these measures, a deed notice must be included with any future sale of the property to comply with California state real estate law, which requires that sellers of real property disclose "any fact materially affecting the value and desirability of the property" (California Civil Code, Section 1102.1[a]) and shall indicate that the applicant agrees to install a driveway gate, as described above.

Because a sound wall already exists along Del Paso Road on the roadway segments that would experience an exceedance of the City exterior noise compatibility standards, no feasible mitigation measures have been identified.

Significance after Mitigation

Existing sensitive receptors along Sorento Road between Del Paso Road and East Levee Road, and Del Paso Road between Sorento Road and Carey Road could experience noise levels that exceed City of Sacramento incremental noise standards for noise-sensitive land uses. The addition of project-generated traffic to the surrounding roadway network could also lead to noise increases that would result in the exceedance of the City of Sacramento exterior noise compatibility standard of 60 CNEL for low density residential receptors along Del Paso Road from Gateway Park Boulevard to Black Rock Drive.

As recommended by Mitigation Measure 5.9-2, the construction of a sound barrier that is just tall enough to break the line of sight between vehicles traveling on a roadway and ground level receptors results in at least 5 dBA of noise reduction and can achieve an approximate 1 dBA additional reduction for each 2 feet of height above where the sound barrier breaks the line of sight (with a maximum theoretical total reduction of 20 dBA) (FHWA 2010:56). Thus, construction of the sound barrier as detailed in Mitigation Measure 5.9-2 would ensure that the exterior incremental noise increases along Del Paso Road from Sorento Road to Carey Road as a result of project-generated traffic noise would not exceed the City of Sacramento allowable noise increment standard (1 dBA). Additionally, Mitigation Measure 5.9-2 includes the provision of landscaping and a barrier design consistent with the character of the surrounding area to avoid aesthetic impacts for views along the roadway segments to which it applies.

The implementation of Mitigation Measure 5.9-2 would reduce noise levels at the sensitive receptors adjacent to, and east of Sorento Road between Del Paso Road and East Levee Road. However, it cannot be ensured that Mitigation Measure 5.9-2 would reduce the incremental noise increase to below the City of

Sacramento allowable noise increment standard (8 dBA) as it would require noise barriers within the front yards of residences that may elect not to participate in the mitigation.

Additionally, exterior noise levels at existing noise-sensitive residences along the roadway segment of Del Paso Road from Gateway Park Boulevard to Black Rock Drive, along which sound barriers already exist, could only be remediated by relocating roadways, providing additional buffer zones, etc., but in the case of the project, this would not be feasible. Thus, as a result of the project, existing sensitive land uses (i.e., residences located along Del Paso Road from Gateway Park Boulevard to Black Rock Drive, and along Sorento Road from Del Paso Road to East Levee Road) could be exposed to exterior noise levels that exceed applicable City of Sacramento noise standards. This impact would remain **significant and unavoidable**.

Impact 5.9-3: Exposure of existing sensitive receptors to new or additional operational project-generated stationary noise sources

The project would result in the development of commercial land uses in proximity to existing sensitive receptors. Noise sources generally associated with commercial/retail land uses include vehicular and human activity in parking lots, and loading dock and delivery activities. Based on the modeled reference noise levels, no existing residential off-site receptors would experience commercial-related noise levels that exceed the City and County's daytime and nighttime L_{eq} or maximum intermittent noise (L_{max}) levels standards. This impact would be **less than significant**.

This impact assesses the long-term exposure of existing sensitive receptors to increased operational-source noise levels from proposed land use development.

The project includes development of commercial land uses in the Suburban Center site. This commercial site would be located along the southern boundary of the project area, adjacent to Del Paso Road, as shown in Exhibit 3-4. However, the specific types of commercial uses to be developed are yet to be determined. Noise generated at commercial land uses can vary substantially and can include occasional parking lot-related noise (e.g., opening and closing of vehicle doors, people talking) and loading dock operations (e.g., use of forklifts, hydraulic lifts). Noise commonly associated with commercial land uses, such as loading dock activities, including idling trucks, vehicle backup alarms, decompression of truck brakes, forklifts, and material loading and unloading activities can generate noise levels of approximately 71 L_{eq} and 86 L_{max} at a distance of 50 feet. Based on these reference noise levels, the City and County's daytime L_{eq} exterior noise standards (55 L_{eq}) for residential receptors could be exceeded within approximately 200 feet from the loading dock and the nighttime L_{eq} noise standards (50 L_{eq}) could be exceeded within approximately 325 feet from a loading dock. Additionally, the City and County's daytime L_{max} noise standards (75 L_{max}) could be exceeded within approximately 130 feet from the acoustic center of the loading dock and the nighttime L_{max} noise standards (70 L_{max}) would be exceeded within approximately 205 feet from the acoustic center of a loading dock.

The nearest off-site noise-sensitive land uses near proposed on-site commercial land uses would include the residential dwellings located east of the project site along Sorento Road and north of Del Paso Road (Valley View Acres), and Natomas Charter School, located adjacent to and west of the project site. Proposed commercial land uses would be located in excess of approximately 1,500 feet from the Natomas Charter School and would be shielded by intervening proposed residential land uses. Proposed commercial development would be located over 600 feet from the nearest existing off-site residential land uses (Valley View Acres). The project design also includes the provision of a landscaped wall and 18.5-foot landscaping setback from the west side of Sorento Road.

Based on the reference noise levels identified above, no existing residential off-site receptors would experience commercial-related noise levels that exceed the City and County's daytime and nighttime L_{eq} noise standards. Maximum intermittent noise levels at these same receptors would be approximately 60 L_{max} , or less. This would be a **less-than-significant** impact.

Mitigation Measures

No mitigation is required.

Impact 5.9-4: Compatibility of Proposed Land Uses with Projected Levels of Noise Exposure

The project proposes a mix of various land uses, including residential, commercial, park, and school uses. Traffic and stationary noise sources in the vicinity of the project may expose noise-sensitive uses within the project site to excessive noise levels, resulting in land use conflicts related to noise. Implementation of the project could expose future planned sensitive receptors to transportation and stationary source noise levels that exceed the City of Sacramento noise standards. Therefore, this impact would be **significant**.

Noise exposure to traffic noise and non-traffic noise are discussed separately below.

Exposure of New Sensitive Receptors to Traffic Noise

The City of Sacramento General Plan exterior noise standard for low density residential is 60 L_{dn}/CNEL while the City’s exterior noise standards for schools, neighborhood parks, and commercial land uses is 70 L_{dn}/CNEL.

To determine land use compatibility, predicted traffic noise contours (in CNEL) for existing major roadways bordering the project site, and new major collector roadways internal to the project site were modeled for future cumulative-plus-project conditions. The modeling was based on data contained within the project’s traffic analysis found in Appendix H. Table 5.9.15 summarizes predicted distances to the 60, 65, and 70 CNEL contours for the major roadway segments, along Elkhorn Boulevard, Del Paso Road, Club Center Drive, and Street “G” that would impact the project land uses. The predicted noise contour distances do not take into account shielding or reflection of noise from existing terrain or existing/future structures.

Table 5.9-15 Summary of Modeled Traffic Noise Contour Distances Under Cumulative-Plus-Project Conditions

Roadway Segment/Segment Description	Distance (feet) from Roadway Centerline to CNEL (dBA)		
	70	65	60
Existing External Roadways			
Elkhorn Boulevard (Sageview Drive to East Levee Road)	68	146	314
Del Paso Road (National Drive to Northgate Boulevard)	67	145	313
Proposed Internal Roadways			
Club Center Drive (Street “A” to Del Paso Road)	17	37	80
Street “G” (Elkhorn Boulevard to Sandmark Drive)	19	42	90

Notes: CNEL = Community Noise Equivalent Level; dBA = A-weighted decibels.

For additional details, refer to Section 5.11, “Transportation and Circulation,” and Appendix G for detailed traffic data, and traffic-noise modeling input data and output results.

Source: Data modeled by Ascent Environmental, Inc. in 2017

As noted earlier in this report, the project includes a mix of land uses, including commercial, neighborhood parks, elementary, middle and high schools, and residential development. Predicted traffic noise levels at most proposed land uses would not be anticipated to exceed applicable City noise standards for land use compatibility (see Table 5.9-6). However, proposed residential land uses located adjacent to major roadways, particularly those noted in Table 5.9-15, could potentially be located within the projected 60 L_{dn} traffic noise contours. As a result, predicted noise levels at proposed residential land uses located near major roadways could potentially exceed the City’s exterior noise standard of 60 L_{dn}/CNEL (see Table 5.9-15).

The location of the proposed elementary school and existing East Natomas Education Complex are located approximately 950 and 2,300 feet, respectively from the major roadways in vicinity of the project of Del Paso Road and Elkhorn Boulevard. Additionally, the segment of Street "G" that would run adjacent to the existing East Natomas Education Complex is not anticipated to experience ADT volumes such that on-site noise would exceed 70 CNEL at the school site. Thus, it is not anticipated that traffic noise would exceed the City's exterior noise standard of 70 L_{dn} /CNEL at these sites.

Proposed commercial uses could potentially be located adjacent to Del Paso Road and within the projected 70 L_{dn} traffic noise contours. Additionally, the location of specific park uses within the park have yet to be determined and could be located in close proximity to Del Paso Road or Elkhorn Boulevard, and thus could be located within the projected 70 L_{dn} traffic noise contours. As a result, predicted noise levels at proposed commercial and park land uses located near major roadways could potentially exceed the City's exterior noise standard of 70 L_{dn} /CNEL (see Table 5.9-6).

Exposure of New Sensitive Receptors to Existing and New Stationary Noise Sources

The City's daytime and nighttime stationary-source noise standards for single-family residential dwellings are based on exterior noise standards of 55 and 50 L_{eq} , respectively. Intermittent noise levels at residential land uses are not to exceed 75 L_{max} in the daytime and 70 L_{max} at night.

Proposed Commercial Land Uses

On-site commercial uses would be located directly adjacent to residential uses proposed within the project area. The operational noise levels associated with the proposed commercial land uses could potentially exceed the City's maximum allowable exterior noise standards at future on-site noise-sensitive receptors, particularly those residences proposed for construction adjacent to and surrounding the proposed commercial land uses, and the proposed nearby elementary school. In addition, increases in single-event noise levels, such as backup alarms from material delivery trucks, occurring during evening and nighttime hours could result in increased levels of disturbance and sleep disruption to occupants of nearby residential dwellings.

Thus, considering the close proximity to existing sensitive receptors (e.g., single family residences surrounding the project area), it is possible that new proposed commercial loading docks or new parking lots could exceed the City of Sacramento's hourly daytime and nighttime allowable noise levels.

Nearby Industrial Land Uses

The dominant daytime noise source in the vicinity of the project site is vehicular traffic on area roadways. To a somewhat lesser extent, ambient daytime noise levels along the northern boundary of the project area are also influenced by nearby existing industrial land uses, including activities conducted at John Taylor Fertilizer plant, Syar Concrete, and Granite Construction Company, which are generally located east of the project area along Elkhorn Boulevard. Intermittent noise from amplified public address systems also contributes to daytime ambient noise levels, on an occasional basis, associated with sales events conducted at Sacramento Auto Auction, which is located east of the project area.

Noise generated by the nearby industrial sources is primarily associated with the use of on-site material handling and processing equipment, which typically occurs during the daytime hours of 7:00 a.m. to 3:00 p.m. However, during peak periods of production, operational activities at the nearby asphalt and concrete batch plants can occur during the early morning hours, beginning as early as approximately 5:00 a.m., extending until approximately 6:00 p.m.

Based on data obtained for similar facilities, maximum operational noise levels at the nearby asphalt and concrete plants are predicted to be approximately 80 L_{eq} within approximately 50 feet of the plant (City of Sacramento 2006). It is important to note that proposed on-site residential land uses would be partially shielded from these nearest stationary noise sources by the existing levee that extends along the eastern boundary of the project site to an average height of approximately 10 feet. Assuming an average attenuation rate of 6 dBA per doubling of distance from the source, predicted maximum exterior stationary-source noise levels at the nearest potential residential land uses on the Krumenacher Ranch parcel, located

approximately 900 feet west of the property boundary of the Syar Concrete facility, and along the eastern property line of the project area would be approximately 42 L_{eq} , or less.

During the daytime hours, predicted stationary noise levels would be largely masked by traffic noise emanating from Elkhorn Boulevard. Predicted stationary-source noise levels at these nearest residential dwellings may be detectable, particularly during the quieter early morning hours; however, predicted noise levels would not exceed the City's daytime or nighttime exterior noise standards of 55 and 50 L_{eq} , respectively. Assuming an average attenuation rate of 24 L_{eq} , with windows closed (EPA 1978:11), predicted interior noise levels at the nearest residential dwellings would be approximately 18 L_{eq} , or less. Thus, predicted noise level would not exceed the City's minimum acceptable exterior or interior noise standards.

Intermittent noise generated by nearby existing sources would include use of exterior public address system at the Sacramento Auto Auction, as well as back-up beepers from equipment and trucks operating at the nearby industrial land uses are discussed above. Maximum intermittent noise levels associated with the loading of trucks and hoppers at material processing plants can range from approximately 77 to 84 L_{max} at 40 feet. Noise from backup beepers and public address systems can reach levels of approximately 90 L_{max} at 10 feet (City of Sacramento 2006). Based on these maximum noise levels, maximum predicted intermittent noise levels at the nearest potential residential dwellings located approximately 450 feet west of the land uses in question, would be approximately 57 L_{max} . Thus, predicted intermittent noise levels would not exceed the City's minimum acceptable exterior or interior noise standards.

Coronal Noise

In addition to off-site stationary noise sources, corona noise generated by the nearby on-site electrical power-transmission lines may be detectable at nearby residential dwellings during inclement weather conditions. Corona is the breakdown of air very near conductors and occurs when the electric field is locally intensified by irregularities on the conductor surface, such as the accumulation of moisture. As a result, corona noise is most noticeable in the vicinity of electrical transmission towers. The highest noise levels typically generated by high-voltage lines during fair weather conditions would be below ambient noise level at ground level. During rain or fog, however, corona noise levels generated by high-voltage lines average approximately 46 L_{eq} at approximately 50 feet from the power line (PG&E 2002). The powerlines are located within a 200-foot easement, thus the minimum setback distance from potential sensitive receptors to the centerline of the easement would be 100 feet. Attenuating the noise levels out from the power lines by 100 feet, the predicted noise levels at project sensitive receptors from the power lines could reach 40 L_{eq} , thus, not exceed the City's minimum acceptable exterior or interior noise standards.

Summary

Predicted traffic noise levels at proposed residential, commercial, and potential park uses located near Del Paso Road and Elkhorn Boulevard could exceed the City's exterior noise standards. Additionally, the noise generated by the proposed commercial land uses could result in the City's noise standards being exceeded because of the new stationary-source generated noise level on the project site.

Therefore, because of potential exposure to traffic noise and new on-site stationary noise sources, land use compatibility as it related to noise would be **significant**.

Mitigation Measure 5.9-4a: Reduce transportation noise exposure to sensitive receptors

For new sensitive receptors developed as part of the project and that would be located within 282 feet of the centerline of Del Paso Road, within 278 feet of the centerline of Del Paso Road, within 80 feet of the centerline of Club Center Drive, or within 90 feet of the centerline of Street "G" (i.e., the distance from the centerline that is estimated, based on the noise modelling, to result in exceedance of the City of Sacramento exterior noise compatibility standard of 60 CNEL for low density residential), any or all of the following design criteria shall be adhered to:

- ▲ Where feasible, locate new sensitive receptors such that the outdoor activity area (e.g., balcony or porch) is on the opposite side of the structure from major roadways such that the structure itself would provide a barrier between transportation noise and the outdoor activity areas.
- ▲ Locate new sensitive receptors with other buildings/structures between the sensitive land use and nearby major roadways.
- ▲ If new sensitive receptors cannot be oriented or shielded by other structures, then design and building materials shall be chosen such that, at a minimum, 25 dBA of exterior-to-interior noise attenuation would be achieved, so that interior noise levels comply with the City of Sacramento interior noise standard of 45 L_{dn} .
- ▲ Setback sensitive receptors from major roadways at a distance that will not result in the exceedance of the City of Sacramento exterior noise compatibility standard of 60 CNEL for low-density residential land uses.

If, and only if, implementation of the above measures do not reduce transportation-related noise levels to comply with the City of Sacramento exterior noise compatibility standard of 60 CNEL for low density residential, then as part of improvement plans for land uses along Del Paso Road, Elkhorn Boulevard, National Drive and Club Center Drive, landscaped noise barriers that demonstrate compliance with City noise standards (interior and exterior) shall be implemented. The project developer will be required to demonstrate compliance with this mitigation measure and whether noise barriers are ultimately required.

Mitigation Measure 5.9-4b: Reduce noise exposure to existing sensitive receptors from proposed stationary noise sources.

The project developer shall implement the following measures to reduce the effect of noise levels generated by on-site stationary noise sources:

- ▲ Loading docks shall be located and designed so that noise emissions do not exceed the stationary noise source criteria established in this analysis (i.e., exterior daytime [7:00 a.m. to 10:00 p.m.] standards of 55 L_{eq} / 75 L_{max} and the exterior nighttime [10:00 p.m. to 7:00 a.m.] standards of 50 L_{eq} / 70 L_{max} ; or interior noise standards of 45 L_{dn}) at any planned sensitive receptor. At the time of approval of special permits and/or development plan review, the project developer shall provide to the City a specialized noise study to evaluate specific design and ensure compliance with City of Sacramento noise standards. Reduction of loading dock noise can be achieved by locating loading docks as far away as feasible from noise-sensitive land uses, constructing noise barriers between loading docks and noise-sensitive land uses, or using buildings and topographic features to provide acoustic shielding for noise-sensitive land uses. Final design, location, and orientation shall be dictated by findings in the noise study, if applicable.

Significance after Mitigation

Implementation of Mitigation Measure 5.9-4b would require that all stationary noise sources are oriented, located, and designed in such a way that reduces noise exposure to ensure that stationary noise sources would comply with City of Sacramento noise standards for sensitive receptors. Implementation of mitigation measures 5.9-4a and 5.9-4b would substantially reduce predicted noise levels at proposed land uses consistent with City noise standards. With incorporation of available mitigation measures, such as noise barriers, landscaped berms, building orientation and noise insulation building measures, predicted traffic noise levels at on-site residential land uses would not be anticipated to exceed the City noise standards. As a result, this impact would be reduced to a **less-than-significant** level.

5.9.8 Cumulative Setting, Impacts, and Mitigation

CUMULATIVE SETTING

Noise is a localized occurrence and attenuates with distance. For construction and stationary source impacts, only the immediate area around a site would be included in the cumulative context. For example, construction and stationary source impacts related to noise dissipate/attenuate quickly as the distance between the site and the receptor increases.

CUMULATIVE IMPACTS AND MITIGATION MEASURES

Impact 5.9-5: Cumulative construction noise impacts

Project construction-noise could result in a cumulatively considerable contribution to significant cumulative noise impacts if it were to occur concurrently with future construction activities located at nearby development. This cumulative impact would be significant and the project's contribution **would be cumulative considerable**.

The nature of construction noise effects are such that project-related construction activities would have to occur simultaneously and in close proximity to those of other projects for a cumulative effect to occur. The land directly surrounding the project area on the southeast, south, and west is already developed and, therefore, it is not anticipated that construction activities would occur in these areas. However, development is planned directly north and east of the project site (Natomas North Precinct Master Plan and Suburban Neighborhood Low designated land area, respectively). Thus, a cumulative construction noise impact could occur. These projects would likely utilize construction noise reduction measures similar to Mitigation Measures 5.9-1a and 5.9-1b, but there are no assurances these measures would be implemented.

Construction of the project would generate noise localized to the project area. As such, if construction-noise at the project were to occur concurrently with future construction activities located at nearby development, the project could combine and result in a **considerable contribution to the cumulative impact**. Implementation of Mitigation Measures in 5.9-1a and 5.9-1b, would include a variety of construction-noise reduction measures; however, these measures would not be sufficient to avoid significant construction noise impacts associated with the project. Thus, the incremental contribution of the project to this significant cumulative impact would remain **cumulatively considerable** and **significant and unavoidable**.

Mitigation Measures

No additional feasible mitigation is available.

Impact 5.9-6: Cumulative Traffic Noise

Cumulative noise levels could be affected by additional buildout of surrounding land uses and increases in vehicular traffic on affected roadways, thus resulting in a significant cumulative impact. Cumulative project traffic noise levels in conjunction with project-generated traffic could result in additional traffic-related noise on surrounding roadways which could contribute to a cumulative traffic-noise condition. This cumulative impact would be significant and the project's contribution **would be cumulative considerable**.

Cumulative noise levels could be affected by additional build-out of surrounding land uses and increases in vehicular traffic on affected roadways. Several new large developments (e.g., Greenbriar, Placer Vineyards, and Sierra Vista) and others (see Table 5-2 for a complete list) are planned in the area surrounding the project area.

Traffic-noise modeling was conducted for the future (cumulative 2036) condition with and without the project, the results of which are shown in Table 5.9-16.

Table 5.9-16 Summary of Modeled Traffic Noise Levels under Cumulative and Cumulative Plus Project Conditions (Year 2036)

Segment Description	Exterior CNEL/ L_{dn} Noise Standard (dBA) ^{1,2}	Allowable Exterior CNEL Noise Standard Increment (dBA)	CNEL (dBA) at Nearest Sensitive Receptor ⁴			Change (dBA)
			Existing No Project	Cumulative No Project	Cumulative +Project	
Elkhorn Boulevard (SR 99 to East Commerce Way)	60	3	51.7	53.2	53.4	0.2
Elkhorn Boulevard (East Commerce Way to Northborough Drive)	60	3	51.4	54.1	54.2	0.1
Elkhorn Boulevard (Northborough Drive to Natomas Boulevard)	60	3	51.1	54.0	54.0	0.1
Elkhorn Boulevard (Natomas Boulevard to Sageview Drive)	60	3	51.8	54.6	54.3	-0.3
Elkhorn Boulevard (Sageview Drive to E. Levee Road)	60, 65 ³	3	63.5	66.6	67.4	0.9
Elkhorn Boulevard (E. Levee Road to Marysville Boulevard)	65 ³	1.5	68.1	71.0	71.6	0.6
Natomas Boulevard (North Bend Drive to Club Center Drive)	60	1	62.3	63.4	63.5	0.1
Natomas Boulevard (Club Center Drive to Elkhorn Boulevard)	60	1	59.2	60.7	60.1	-0.6
Del Paso Road (Truxel Road to Gateway Park Boulevard)	60	1	59.4	61.6	61.8	0.2
Del Paso Road (Gateway Park Boulevard to Black Rock Drive)	60	1	59.6	61.5	62.4	0.9
Del Paso Road (Black Rock Drive to National Drive)	70	3	64.3	66.4	66.3	-0.2
Del Paso Road (National Drive to Northgate Boulevard)	60	1	64.3	66.4	67.4	1.0
Northgate Boulevard (Del Paso Road to North Market Boulevard)	70	3	63.4	64.4	65.2	0.8
Northgate Boulevard (North Market Boulevard to I-80)	70	3	65.2	66.2	66.8	0.5
Main Avenue (Northgate Boulevard to Norwood Avenue)	60	1	64.5	66.7	66.8	0.1
Sageview Drive (Elkhorn Boulevard to Bridgecross Drive)	60	2	55.6	58.1	54.0	-4.1
Bridgecross Drive (East of Honor Parkway)	60	2	56.1	56.4	56.1	-0.4
Regency Park Circle (North of Club Center Drive)	60	2	55.4	56.2	57.1	0.9
Danbrook Drive (South of Club Center Drive)	60	1	58.7	60.4	61.0	0.6
Sorento Road (North of Del Paso Road)	60	5	43.4	47.9	56.5	8.6
Club Center Drive (Danbrook Drive to Danbrook Drive)	60	3	53.2	54.0	55.3	1.3

Notes: CNEL = Community Noise Equivalent Level; dBA = A-weighted decibels;

Table 5.9-16 Summary of Modeled Traffic Noise Levels under Cumulative and Cumulative Plus Project Conditions (Year 2036)

Segment Description	Exterior CNEL/ L_{dn} Noise Standard (dBA) ^{1,2}	Allowable Exterior CNEL Noise Standard Increment (dBA)	CNEL (dBA) at Nearest Sensitive Receptor ⁴			Change (dBA)
			Existing No Project	Cumulative No Project	Cumulative +Project	
¹ 60 CNEL – Standard for Single Family Residential Exterior Noise Standard per City of Sacramento General Plan. ² 70 CNEL – Standard for Commercial Standard Exterior Noise Standard per City of Sacramento General Plan. ³ 65 L_{dn} – Standard for All Residential Land Uses at Sensitive Outdoor Area per County of Sacramento General Plan. ⁴ Accounts for 5 dBA decrease in noise levels where existing sound walls are located. Refer to Section 5.11, "Transportation and Circulation," and Appendix G for detailed traffic data, and traffic-noise modeling input data and output results. Source: Data modeled by Ascent Environmental, Inc. in 2017						

As shown in Table 5.9-16, the cumulative no project condition could result in several roadways that currently do not exceed the City of Sacramento maximum allowable exterior noise level under existing conditions to exceed these levels in the cumulative no project condition (e.g., Natomas Boulevard, Del Paso Road, Elkhorn Boulevard). Additionally, the allowable noise increment increase could be exceeded along segments of multiple roadways (e.g., Natomas Boulevard, Del Paso Road, Elkhorn Boulevard, Main Avenue, Sageview Drive). Thus, a cumulative traffic noise impact would occur.

As shown in Table 5.9-16, the addition of project-generated traffic to the surrounding roadway network for the cumulative condition could result in one roadway segment experiencing noise increases exceeding the allowable noise increment increase, as determined by City of Sacramento incremental noise impact standards for noise-sensitive land uses (Table 5.9-16).

Project-generated traffic could result in an exceedance of the City exterior incremental noise standards for noise-sensitive uses (see Table 5.9-16) along Sorento Road (North of Del Paso Road) under the cumulative condition.

Thus, under the cumulative condition, project-generated traffic could result in the exceedance of the City of Sacramento General Plan standards for the existing noise-sensitive land uses along this roadway segment. As described in Section 5.9.7 Impacts and Mitigation Measures, the implementation of Mitigation Measure 5.9-2a would reduce noise levels at the sensitive receptors adjacent to, and east of Sorento Road between Del Paso Road and East Levee Road. However, it cannot be ensured that Mitigation Measure 5.9-2a would reduce the incremental noise increase to below the City of Sacramento allowable noise increment standard (5 dBA) in cumulative condition. Thus, the incremental contribution of the project to this significant cumulative impact would remain **cumulatively considerable** and **significant and unavoidable**.

Mitigation Measures

No additional feasible mitigation is available.

Impact 5.9-7: Cumulative Operational Noise

Operation of the proposed development would not result in noise levels that exceed applicable noise compatibility standards. Therefore, the project **would not result in a considerable contribution** such that a new significant operational noise impact would occur.

As described in Section 5.9.7 *Impacts and Mitigation Measures* above, operational noise levels associated with operation of the project would not result in noise levels that exceed applicable exterior or interior noise compatibility standards at off-site receptors. Further, as noted in Section 5.9.7, with mitigation, the on-site residential receptors would not be subject to substantial operational noise from the commercial land use activities. Therefore, the project **would not result in a considerable contribution** such that a new significant operational noise impact would occur.

Mitigation Measures

No mitigation is required.

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5.10 PUBLIC SERVICES AND RECREATION

This section describes public services and recreational resources in the project area; describes relevant regulations pertaining to public services and recreation; and addresses potential impacts to public services and recreation that could result from buildout of the project. Public services considered in the analysis include fire protection and emergency services, law enforcement, parks and recreation facilities, schools, and libraries.

The following comments were received in response to the Notice of Preparation (see Appendix A) that are addressed in the analysis below:

- ▲ impacts to law enforcement; and,
- ▲ adequate recreational facilities, including a continuous bicycle network.

5.10.1 Environmental Setting

FIRE PROTECTION AND EMERGENCY SERVICES

Local Fire Protection Districts

The City of Sacramento Fire Department (SFD) provides fire protection services to a 146.3-square-mile service area including the entire City of Sacramento (City) as well as some unincorporated areas of Sacramento County (County) and holds jurisdiction over fire code compliance, monitoring and enforcement. These services include fire suppression, emergency medical services, fire prevention and investigation, hazardous materials response, search and rescue, and extrication within the city. Contracted areas within the SFD's jurisdiction include the Natomas Fire Protection District (NFPD) and the Pacific Fruitridge Fire Protection District (PFFPD), both of which provide service outside of the City.

The project area is currently located within the boundaries of the NFPD. Since 1984, NFPD, a County agency, has contracted with the City to provide emergency, medical, rescue and fire protection services to the North Natomas community. Under this contract, most of the property tax collected for fire service is paid to the City. The NFPD, in conjunction with the SFD, provide service to the unincorporated areas of North Natomas which includes the project area. Upon annexation, the project area will be served by the SFD.

The SFD has 24 active stations within its service area. The project area is currently served and, with project implementation, would continue to be served by NFPD Fire Stations 18 and 30. Fire Station 18 is located south of Del Paso Road, approximately 1.2 vehicle miles from the project area, at 746 North Market Boulevard. The station is equipped with a Type I Engine which is staffed with four personnel each day including a company officer (captain), engineer, and two firefighters (SFD 2015). Station 18 was one of seven SFD fire stations recommended for future replacement based on its failure to comply with the Essential Service Building Seismic Act. The SFD's capital improvement program includes a fire station replacement program which identifies funding sources for ongoing station replacement projects (City of Sacramento 2015).

Fire Station 30 is located immediately west of the project area, at 1901 Club Center Drive in the North Natomas community. The station is equipped with a Type I engine, a truck, and an ambulance which are staffed each day with 10 personnel. Station 30 was constructed in 2005 with the intention of serving the growing population of the North Natomas area (SFD 2015).

The SFD has 657 full-time equivalent employees with daily staffing including 24 engines, 8 trucks, 1 rescue, 14 medics, 3 battalion chiefs and one EMS officer for a total daily staffing of 163 personnel (SFD 2015). In 2015, the SFD responded to approximately 83,701 calls with the majority of calls for emergency

medical service (49,451 calls or 59.1 percent of total) (SFD 2015). SFD has a goal to have its first responding company, which provides for fire suppression and paramedic services, arrive within four minutes (City of Sacramento 2014).

The SFD maintains automatic aid agreements with all its neighboring agencies including the Sacramento Metropolitan Fire District and Cosumnes Fire. Under these automatic aid agreements, all related emergency calls are routed through a central dispatch center and the nearest apparatus are dispatched to emergency incidents, regardless of political jurisdiction. 2015, SFD provided mutual aid response for 7,223 incidents (SFD 2015).

LAW ENFORCEMENT

Sacramento County Sheriff's Department

The Sacramento County Sheriff's Department (SCSD) provides specialized law enforcement services to the county and local police protection to both the incorporated and unincorporated areas. Specialized law enforcement includes providing court security services, operating a system of jails for pretrial and sentenced inmates, and operating a training complex. Local police protection includes response to calls and trouble spots, investigations, surveillance, and routine patrolling. The SCSD is currently staffed with 1,284 sworn officers including 388 patrol officers (Kirk 2016).

The project area is located in SCSD's North Division which provides patrol services for approximately 415,000 people living in the communities of Carmichael, Fair Oaks, Gold River, Orangevale, Arden-Arcade, Foothill Farms, Antelope, North Highlands, Rio Linda, Elverta and the Garden Highway. The North Division is currently staffed with 134 sworn officers and a support staff of 19. The nearest sheriff's station is located at 729 9th Street, approximately 5 miles south of the project area. Public access to sheriff services is provided through the Rio Linda Service Center located at 6730 Front Street in Rio Linda (SCSD 2016).

City of Sacramento

Police protection services in the City of Sacramento are provided by the City of Sacramento Police Department (SPD) as well as the California Highway Patrol (CHP), Twin Rivers Unified School District Police Department (TRPD), and the Regional Transit Police Department (RTPD). The CHP provides law enforcement services for all traffic-related incidents in unincorporated Sacramento County. Additionally, the CHP responds to all incidents on the state highways, state-owned buildings, and state property within the City. The TRPD is responsible for providing police services to the students, staff and facilities within the Twin Rivers Unified School District (TRUSD). The RTPD is responsible for monitoring light rail stations, light rail trains, bus stops, buses, bus routes, regional transit riders, and other associated transit needs with regard to safety.

This section focuses on the SPD because it is the primary agency that would provide police services to the project area.

City of Sacramento Police Department

The SPD is managed by the Chief of Police and three deputy chiefs who oversee the Office of Operations, Office of Investigations, Office of Specialized Services, and Office of the Chief, respectively. The SPD maintains an unofficial goal of providing 2.0 to 2.5 sworn police officers for every 1,000 residents and 1.0 civilian support staff for every 2.0 sworn officers. In 2015, the SPD was staffed with 639 sworn officers and 303 civilian employees for a ratio of 1.3 sworn officers per 1,000 residents. The SPD's 2015/2016 budget provides funding for 1.5 sworn officers per 1,000 residents (SPD 2015; City of Sacramento 2014).

The SPD uses a variety of data including geographic information system (GIS) based data, call and crime frequency data, and available personnel to rebalance officer deployment on an annual basis to meet the changing needs of the City. Along with this, the SPD changes the size of its patrol districts within its four established geographic police commands approximately every two years to reflect population growth, crime, and other factors which require boundary adjustments. Upon annexation, the project area would be located within the North Command, District 1A (North Natomas) (SPD 2015).

The fiscal year 2015/2016 operating budget for SPD totaled \$125.3 million. Funding is received through a variety of sources with the primary source being the City's general fund. The annual budget for the SPD accounted for 13.2 percent of the City's total approved budget (SPD 2015). With regard to serving new development, the SPD realizes minimal revenue generation through licensing and fee recovery programs.

The Patrol Division in the SPD's Office of Operations is directly responsible for managing and responding to emergency and non-emergency calls for service. Two substations house the teams for patrol services. The main headquarters for the Sacramento Police Department is located at the Public Safety Center, Chief Deise/Kearns Administration Facility, 5770 Freeport Boulevard. The department has three substations from which the patrol divisions operate. The facility that serves District 1 is the William J. Kinney Police Facility located at 3550 Marysville Boulevard. This station is approximately five miles southeast of the project area south of Interstate 80 (I-80).

Currently, there is no secondary station in this area. The other substations are the Joseph E. Rooney Police Facility located at 5303 Franklin Boulevard (South Command) and the Richards Police Facility located at 300 Richards Boulevard (Central and East Commands). The SPD proposes to construct a new police substation north of Del Paso Road between East Commerce Way and Natomas Boulevard, approximately 1.5 miles west of the project area, within the North Natomas Community Plan (NNCP) Town Center.

Average SPD response times and workload are measured by the number of calls for service. Calls are categorized based on urgency of the situation from Priority 2 (P2) being the highest priority to Priority 6 (P6) being the lowest priority. Priority 1 (P1) calls are officer-initiated emergency requests for help which are responded to in real time. The SPD does not have an adopted response time standard. In 2015, the SPD received a total of 347,289 calls for service including 231,592 citizen calls for service and 115,697 officer-initiated calls for service. In the same year, the median response time for P2 calls was 9 minutes 37 seconds, an increase of 1 minute, 21 seconds compared to 2010 (SPD 2015). Table 5.10-1 displays the SPD's median citywide response times for each priority level between 2010 and 2015.

Table 5.10-1 Sacramento Police Department Median Response Times for Priority 2 and Priority 3 Calls

Year	Median Response Times				
	Priority 2 Calls	Priority 3 Calls	Priority 4 Calls	Priority 5 Calls	Priority 6 Calls
2010	8:16	9:39	18:39	21:51	1:06:31
2011	8:05	9:30	16:55	19:29	43:55
2012	8:34	9:51	17:53	21:02	41:53
2013	8:44	10:15	20:18	24:02	48:43
2014	9:33	10:44	26:04	30:37	53:01
2015	9:37	10:50	28:43	34:02	1:02:50

Source: SPD 2015

PUBLIC SCHOOLS

The project site is served by two school districts. Twin Rivers Unified School District serves the entire project site and includes the onsite partially constructed East Natomas Education Complex (junior and senior high schools). Robla School District serves the southern portion of the site and would include the proposed onsite elementary school site. These school districts are described below.

Twin Rivers Unified School District

The Twin Rivers Unified School District (TRUSD), which provides school services for elementary, junior high, and high school students (grades K-12). The TRUSD serves approximately 31,000 students in the city and county. The district has 28 elementary schools, seven junior high schools, six high schools, five charter schools, and eight other schools including alternative and independent study schools, early childhood education facilities, and an adult day school (TRUSD 2016). The majority of new students generated by development of the proposed PUD would attend schools in the TRUSD.

According to Senate Bill 50 (SB 50), Chapter 407, Statutes 1998, which became effective on November 4, 1998, a school district is required to conduct a school facilities needs analysis, which provides the justification for the imposition of Level 2 fees and calculates the amount of the school impact fee according to a complex statutory formula. Government Code Section 65995.5 specifies the data that must be evaluated in the analysis, such as the extent of overcrowding in the district, the number of un-housed students, existing school building capacity, surplus property available to the district, projected enrollment growth, and identification of other potential sources of revenue. The TRUSD adopted the Twin Rivers Long Range Facilities Master Plan in September 2015, which identifies major facility issues and detailed information on future school needs, options, and estimated costs (TRUSD 2015).

Capacity and Enrollment Projections

In the 2014/2015 school year, TRUSD had a total enrollment of 31,035 students including 8,752 high school (grades 9-12) students, 4,681 junior high school (grades 7-8) students, and 17,602 elementary school (K-6) students (EDP 2016). The district's facilities master Plan (TRUSD 2015) provides long-range enrollment projections that are limited to the typical K-12 student population (i.e., excludes preschool, adult high school, home school, adult education and independent study students). These projections and as well as overall district capacity are summarized in Table 5.10-2. As shown in the table, the TRUSD projects surplus capacity within the district through year 2023.

Table 5.10-2 Twin Rivers Unified School District Capacity and Enrollment Projections

Grade	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
K	2,254	2,455	2,457	2,465	2,450	2,445	2,443	2,442	2,441	2,438
1	2,230	2,243	2,446	2,449	2,462	2,456	2,454	2,451	2,453	2,452
2	2,199	2,182	2,198	2,396	2,405	2,422	2,419	2,419	2,421	2,418
3	2,328	2,192	2,172	2,187	2,392	2,407	2,430	2,425	2,424	2,429
4	2,199	2,296	2,164	2,142	2,164	2,371	2,389	2,410	2,412	2,413
5	2,161	2,194	2,287	2,160	2,148	2,174	2,383	2,406	2,427	2,427
6	1,987	2,127	2,165	2,256	2,125	2,129	2,162	2,370	2,391	2,415
7	2,120	2,209	2,315	2,413	2,506	2,353	2,354	2,412	2,641	2,661
8	2,037	2,055	2,139	2,244	2,337	2,437	2,290	2,292	2,352	2,572
9	1,755	1,774	1,783	1,877	1,989	2,082	2,189	2,061	2,084	2,148
10	1,647	1,660	1,679	1,691	1,792	1,906	1,998	2,101	1,985	2,008

Table 5.10-2 Twin Rivers Unified School District Capacity and Enrollment Projections

Grade	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
11	1,477	1,490	1,506	1,523	1,539	1,629	1,740	1,823	1,917	1,818
12	1,483	1,455	1,466	1,477	1,503	1,516	1,605	1,720	1,801	1,886
Total	25,877	26,332	26,777	27,280	27,812	28,327	28,856	29,332	29,749	30,085
Capacity	34,537	34,537	34,537	34,537	34,537	34,537	34,537	34,537	34,537	34,537
Open Seats	8,660	8,205	7,760	7,257	6,725	6,210	5,681	5,205	4,788	4,452

Source: TRUSD 2015

East Natomas Education Complex

TRUSD has partially developed the East Natomas Education Complex within the project area. Although not currently in use, the complex is planned to serve as a joint use facility with both a junior high school and a high school to serve future growth in the area.

Robla School District

The Robla School District (RSD) provides school services for preschool and elementary school students and serves approximately 31,000 students within the city, northeast of the central city, in between Rio Linda and Del Paso Heights. The district has one preschool and five elementary schools (RSD 2017). The majority of new preschool and elementary students generated by development of the proposed PUD and living south of Club Center Drive would attend schools in the RSD.

On January 1, 1987, AB 2926 (Chapter 887) was enacted which requires that school districts pay a share of the cost of school construction based on the square footage of residential, commercial and industrial construction taking place within their districts. The law commissions school districts to levy a Developer Impact Fee for this purpose, establishes the maximum rate of the fees, and prohibits building permit authorities from issuing building permits without certification from the school district that fee requirements have been met. The current RSD developer fee rate schedule became effective July 16, 2016 and identifies residential and commercial fees for development in the district (residential fee is \$1.81/sf and commercial fee is \$0.29/sf).

In the 2015/2016 school year, RSD had a total enrollment of 2,170 elementary school (K-6) students (EDP 2016) (CDE 2017). The City of Sacramento 2035 General Plan indicates that RCD capacity was 2,094 students in 2013. A 10-acre elementary school site is proposed in the southern portion of the project site and within the RSD boundary. The proposed elementary school would serve future growth in the area.

RECREATION

The project area is currently located within the Rio Linda Elverta Recreation and Park District (RLERPD) and is also served by nearby parks operated by Sacramento County and the City of Sacramento.

County of Sacramento Regional Parks

The County operates a system of 42 park and open space facilities. The majority of the parks are of a large region-serving scale. The regional parks include Gibson Ranch and Mather Regional Park. County open space lands include the American River Parkway, Cosumnes River Preserve, Dry Creek Hills, Dry Creek Parkway, and North Stone Lakes. The County also operates four facilities providing access to the Sacramento River/Delta. Several independent districts manage parks within the unincorporated areas of the county. When development occurs in unincorporated areas, the districts work closely with the County to implement the guidelines set forth by the corresponding park district.

An important open space resource managed by the County is the Dry Creek Parkway. The parkway is located in the northcentral portion of the county and primarily serves local residents in the Rio Linda/Elverta community. It is comprised of approximately six miles of open space and riparian corridor starting at the Sacramento/Placer County line and extending southwesterly toward the Natomas community. The parkway provides an important link in a 70-mile regional trail system that includes the American River Parkway, the Ueda Parkway, the proposed Dry Creek Greenway, and Folsom Lake State Park.

Rio Linda Elverta Recreation and Park District

The project area is currently located within the RLERPD. The RLERPD was formed by the Sacramento County Department of Parks and Recreation, during 1961 –1962 to provide parks and recreation services to the residents of the Rio Linda area. The Town of Elverta was later included by annexation to the growing area. The former County service areas were originally created by a mandate to provide autonomy with parks and recreation services. The goal of the mandate was to convert these areas to a dependent district, and ultimately to an independent district. As a result, the RLERPD became a dependent park district in 1990, and later became an independent district in 1993. The closest RLERPD Park is Westside Park, which is less than three miles from the project area.

City of Sacramento Parks and Recreation Department

The City of Sacramento Parks and Recreation Department (SPRD) oversees and manages park and recreation resources within the city limits. The City currently owns and operates 226 parks and parkways totaling nearly 3,200 acres of land including developed and passive parks, golf courses, bikeways and trails, lakes/ponds and beaches, dog parks, community gardens, skate parks and other recreational facilities. The City also operates other types of recreational facilities including a senior center, numerous community centers, and several clubhouses (i.e., activity buildings available for rental by the public small parties, gatherings, and meetings) (SPRD 2016).

Table 5.10-3 presents the park service level goals for each category of park. A detailed description of each category is provided below along with an inventory of current acreage per category.

Table 5.10-3 City of Sacramento Parks and Recreation Department Park Service Level Goals

Park Type	Acres/1,000 Residents	Size Guidelines	Service Area Guidelines
Neighborhood Serving			
Urban Plaza / Pocket Parks	1.75	Less than 5 acres	½ mile
Neighborhood Parks		5-10 acres	½ mile
Community Serving			
Community Parks	1.75	10 – 60 acres	Drivable from several neighborhoods, 3 miles
Citywide / Regionally Serving			
Regional Parks, Open Space, Parkways	8.0	Varies; may be larger than community parks and/or have destination attractions.	Citywide and beyond
Linear Parks/Parkways and Trails/Bikeways (off and on street)		<ul style="list-style-type: none"> ▲ Along all major public waterways in City limits, contributing to interconnected regional system of open space/trails/bikeways ▲ 0.5 linear miles / 1,000 population of trails/bikeways implemented per adopted City Bikeways, Pedestrian, and Trail Master Plans ▲ Locate next to compatible uses (greenbelts, multi-use trail corridors, schools, waterways, and parks) 	
Open Space		Implementation dependent on numerous factors, including but not limited to: current and future mitigation requirements, land set aside for community separators, protection of sensitive habitat/wetlands, etc. Locate near existing open space, parks, urban forest, wildlife preserve, nature area or parkway, drainage area, wetland, environmentally sensitive area. Locate near existing or proposed trail system. Locate to take advantage of scenic vista, existing cultural or historical significance, and passive recreation and education potential. Provide adequate access for Fire, Emergency, and Maintenance.	

Neighborhood Parks

Neighborhood parks are generally 5 to 10 acres in size and are intended to be used primarily by residents within a half-mile radius. Some neighborhood parks are situated adjacent to elementary schools, and improvements are generally oriented toward the recreation needs of children. In addition to landscaping, improvements might include irrigation, turf, trees, site furniture, walkways, entry improvements, signage, drinking fountains, children’s play areas (tot lots and adventure areas), picnic areas with shade structure, sports courts, and sports fields.

Urban plazas and pocket parks also fall under the category of neighborhood serving parks and tend to be less than 5 acres in size. These parks are more appropriate for areas of denser urban mixed-use development.

Community Parks

Community parks are generally 10 to 60 acres in size and have a service area of approximately three miles, which encompasses several neighborhoods and meets the requirements of a large portion of the city. In addition to neighborhood park elements, a community park might also have restrooms, on-site parking, a community center, a swimming pool, lighted sports fields or courts, and other specialized facilities not found in a neighborhood park. Some of the smaller community parks may be dedicated to one use, and some elements of the park could be leased to community groups.

Citywide/Regional Parks and Parkways

Citywide/regional parks are larger sites developed with a wide range of improvements usually not found in local neighborhood or community facilities to meet the needs of the entire city population. In addition to neighborhood and community park type improvements, regional parks may include a golf course, marina, amusement area, zoo, nature area, and other region-wide amenities. Some elements in the park may be under lease to community groups. Parkways, typically linear and narrow, may be situated along an existing corridor such as a railroad line, roadway, waterway, or other common corridor.

Open Space

Open space areas are natural areas that are set aside primarily to enhance the city’s environmental amenities. Recreational use of these sites is generally limited to natural features of the sites, such as native plant communities or wildlife habitat. Parkways are similar to open space areas because they also have limited recreational uses and are primarily used as corridors for pedestrians and bicyclists, linking residential uses to schools, parks, and commercial developments.

Existing Parks and Recreational Facilities

City of Sacramento

The SPRD’s recreational grounds are divided into ten community planning areas. Upon annexation, the project area would be located in Community Planning Area 10 – North Natomas. Table 5.10-4 summarizes the existing neighborhood and community serving parks for each of the planning areas. The table also illustrates existing school sites and state and county facilities serving the City.

Table 5.10-4 Acreage of Existing Neighborhood and Community Serving Parks by Community Planning Area

Community Planning Area	City Owned/Controlled Acres*		School Acres**		State/County Acres	
	Neighbor-hood Parks	Community Parks	Neighbor-hood Parks	Community Parks	Neighbor-hood Parks	Community Parks
1) Central City	48.7	56.4	11.5	0.0	5.0	0.0
2) Land Park	33.4	57.7	37.5	26.5	0.0	0.0
3) Pocket	66.3	95.7	35.8	21.8	0.0	0.0
4) South Area	137.7	133.8	86.1	83.0	0.0	0.0
5) Fruitridge/Broadway	63.3	89.6	62.5	29.4	0.0	0.0

Table 5.10-4 Acreage of Existing Neighborhood and Community Serving Parks by Community Planning Area

Community Planning Area	City Owned/Controlled Acres*		School Acres**		State/County Acres	
	Neighborhood Parks	Community Parks	Neighborhood Parks	Community Parks	Neighborhood Parks	Community Parks
6) East Sacramento	31.6	19.9	32.5	0.0	5.0	0.0
7) Arden-Arcade	8.4	10.0	7.1	0.0	0.0	0.0
8) North Sacramento	70.0	71.4	78.1	64.4	5.0	0.0
9) South Natomas	72.3	56.2	41.5	42.5	5.0	0.0
10) North Natomas	185.5	233.1	16.1	21.0	3.0	0.0
Totals	717.3	823.9	408.7	288.6	23.0	0.0

Source: SPRD 2009

Notes:

*Neighborhood needs are served by community serving acres (not double counted); neighborhood and community needs are served by some regionally serving acres (not double counted). Includes some portions of City Regional Parks and City public Golf Courses in City limits.

**Forty percent assumption on portions of school sites (based on typical site design) and all sites are usable and accessible for public use after school hours

Table 5.10-5 summarizes the existing citywide/regionally serving parks in the city.

Table 5.10-5 Acreage of Existing Parks Serving the City of Sacramento

Park Type	Existing Acreage
Regional Acres	1,965.8
Parkway Acres	409.9
Neighborhood/Community Serving Acres ¹	142.0
Total Acres	4,779.2

Source: City of Sacramento Parks and Recreation Department 2009

Notes:

¹ While Regional Park and Parkway Acres have a service area of citywide and beyond, portions of most regional park sites also meet neighborhood/community acreage requirements of adjacent neighborhoods.

Community Planning Area 10 – North Natomas

Upon annexation, the project area would be located on the eastern side of CPA 10 – North Natomas. The remainder of the North Natomas area extends to the west. According to SRPD's 2009 Parks Master Plan, the past several years has seen extensive growth in park and recreation facilities in the North Natomas area with the addition of 293 acres of developed parkland including five community parks, numerous neighborhood parks, parkways, and trail corridors. As of 2009, CPA 10 was served by a total of 478.7 acres of parkland including 418.6 acres of City-owned/controlled parkland, 37.1 acres of parkland located on school sites, and 23.0 acres of state/county parkland. The North Natomas area is further served by 1.49 acres of walking/jogging trails and 20.8 miles of multi-use, off-street trails.

Of the total park acreage, 309.4 acres are developed parkland, 267.3 are undeveloped parkland, and 46.6 acres are open space. The 2009 Parks Master Plan shows a total of 14 future parks in the North Natomas area.

The Natomas East Main Drainage Canal (NEMDC) extends up the east side of CPA 10 and includes the northern section of the Ueda Parkway). The parkway, located to the east of the project area, is a paved bicycle and pedestrian trail that connects communities in the north Sacramento area including North

Natomas community to the American River Parkway. The parkway follows the NEMDC. In 1992, Congress authorized the U.S. Corp of Engineers to proceed with construction of needed levees and related improvements in and around the north Sacramento and Natomas areas. Included with authorization was \$8.8 million in recreational trail improvements to be constructed with the flood control project. Portions of the parkway have been paved and completed, while other sections will be finished in later phases when funding becomes available. The section of the trail adjacent to the project area has been developed in conjunction with the existing levee maintenance road as a joint-use facility.

LIBRARIES

Sacramento Public Library

The Sacramento Public Library (SPL) is a joint power authority of the County and the City. The SPL provides a variety of library services to residents of the city and county. The SPL operates 28 branches as well as bookmobiles that visit numerous community sites throughout the county. The library system currently maintains approximately 0.35 square feet of library space per capita and 1.54 volumes per capita. The library does not currently have per capita standards to define adequate service levels for space and holdings.

The North Natomas area is served by the North Natomas Library constructed in 2009 and located at 4660 Via Ingoglia, Sacramento. The library consists of 22,645 square feet and a collection 82,000 volumes (SPL 2016) and is the second largest library in the SPL system second only to the Central Library. The North Natomas area is secondarily served by the 13,615-square-foot South Natomas Library constructed in 2001 and located at 2901 Truxel Road, Sacramento.

The Sacramento Public Library Authority Facility Master Plan 2007-2025 was prepared by the SPL in March 2007. The Master Plan describes existing facilities and identifies needs for new and expanded facilities. According to the Master Plan, given the recently constructed North Natomas Library, no new or expanded facilities are proposed in the North Natomas area. However, the South Natomas Library is planned for an expansion to 20,000-square feet by 2025 (SPL 2007).

5.10.2 Regulatory Setting

FEDERAL

There are no federal policies regarding public services and recreation that are relevant to environmental review of the project.

STATE

Fire Response and Emergency Services

Uniform Fire Code

The Uniform Fire Code (UFC) contains regulations related to construction, maintenance, and use of buildings. Topics addressed in the UFC include fire department access, fire hydrants, automatic sprinkler systems, fire alarm systems, fire and explosion hazards safety, hazardous materials storage and use, provisions intended to protect and assist fire responders, industrial processes, and many other general and specialized fire-safety requirements for new and existing buildings and the surrounding premises. The UFC contains specialized technical regulations related to fire and life safety.

California Occupational Safety and Health Administration

In accordance with California Code of Regulations, Title 8 Sections 1270 “Fire Prevention” and 6773 “Fire Protection and Fire Fighting Equipment,” the California Occupational Safety and Health Administration has

established minimum standards for fire suppression and emergency medical services. The standards include guidelines on the handling of highly combustible materials, fire hose sizing requirements, restrictions on the use of compressed air, access roads, and the testing, maintenance and use of all firefighting and emergency medical equipment.

California Health and Safety Code

State fire regulations are set forth in Sections 13000 et seq. of the California Health and Safety Code, which includes regulations for building standards (as set forth in the California Building Code), fire protection and notification systems, fire protection devices such as extinguishers, smoke alarms, high-rise building, childcare facility standards, and fire suppression training.

Law Enforcement

There are no state policies regarding law enforcement that are relevant to environmental review of the project.

Schools

Government Code Section 66474.02

Before approving a tentative map (or a parcel map where a tentative map is not required) for an area located in a SRA or a very high fire hazard severity zone, the legislative body of the County must find that: the design and location of each lot in the subdivision, and the subdivision as a whole, are consistent with any applicable regulations adopted by CAL FIRE pursuant to Public Resources Code Sections 4290 and 4291; structural fire protection and suppression services will be developed; and ingress and egress meets the road standards for fire equipment access adopted pursuant to Public Resources Code Section 4290 and any applicable local ordinance.

Leroy F. Greene School Facilities Act of 1998

The Leroy F. Greene School Facilities Act, passed as SB 50 in 1998, placed limitations on cities and counties with respect to mitigation requirements for school facilities. SB 50 permits school districts to levy fees, based on justification studies, for the purposes of funding construction of school facilities, subject to established limits. The limits were set in 2000, can be adjusted annually for inflation, and can be levied based on the square footage of residential (up to \$1.93 per square foot in 2000) and commercial-industrial square footage (up to \$0.31 per square foot in 2000).

Voters approved Proposition 51 (Funding for K-12 School and Community College Facilities. Initiative Statutory Amendment) in November 2016 that will provide nine billion dollars in general obligation bonds for educational facilities (seven billion dollars would be available to K-12 public school facilities).

Recreation

Quimby Act

The Quimby Act (California Government Code Section 66477) preserves open space and parkland in urbanizing areas of the state by authorizing local governments to establish ordinances requiring developers of new subdivisions to dedicate land for parks, pay an in-lieu fee, or perform a combination of the two. The Quimby Act provides two standards for the dedication of land for use as parkland. If the existing area of parkland in a community is 3 acres or more per 1,000 persons, then the community may require dedication based on a standard of 5 acres per 1,000 persons residing in the subdivision. If the existing amount of parkland in a community is less than 3 acres per 1,000 persons, then the community may require dedication based on a standard of only 3 acres per 1,000 persons residing in the subdivision. The Quimby Act requires a city or county to adopt standards for recreational facilities in its general plan recreation element if it is to adopt a parkland dedication/fee ordinance.

Specific plan projects are generally required to provide on-site public active and passive recreation facilities to fully mitigate their park and recreation impacts. In cases where a project does not fully support the provision of public recreation amenities in proportion to the General Plan standards, the differential land and

development value between the on-site constructed improvements and the full General Plan standard may be paid in the form of an in-lieu fee.

Both the County and the City collect Quimby Act in-lieu fees. These fees contribute to a fund that would be used to acquire properties for parkland. The City's standards for parkland dedication under the Quimby Act are provided in the discussion of local recreation regulations below.

Libraries

There are no state policies regarding library services that are relevant to environmental review of the project.

LOCAL

Fire Response and Emergency Services

City of Sacramento Municipal Code

Chapter 2.24 of the City's Municipal Code sets forth the guidelines for the SFD, which include such regulations as those associated with the powers and duties of the fire chief, the general organization of the SFD, and other associated activities associated with the Department. In addition, this chapter establishes the SFD rates and fees for associated services. Chapter 15.36 (Fire Code Adopted, also known as the City's Fire Prevention Code) adopts the Uniform Fire Code with such deletions, amendments, and additions thereof as set forth in the chapter. Additional fire regulations utilized by the City include California Code of Regulations Title 19 (Public Safety) and Title 24 (California Building Standards Code).

City of Sacramento 2035 General Plan

The following policies are relevant to environmental review of the project.

- ▲ Policy PHS 2.1.2: Response Time Standards. The City shall strive to maintain emergency response times that provide optimal fire protection and emergency medical services to the community.
- ▲ Policy PHS 2.1.3: Staffing Standards. The City shall maintain optimum staffing levels for sworn, civilian, and support staff, in order to provide quality fire protection and emergency medical services to the community.
- ▲ Policy PHS 2.1.4: Response Units and Facilities. The City shall provide additional response units, staffing, and related capital improvements, including constructing new fire stations, as necessary, in areas where a fire company experiences call volumes exceeding 3,500 in a year to prevent compromising emergency response and ensure optimum service to the community.
- ▲ Policy PHS 2.1.5: Timing of Services. The City shall ensure that the development of fire facilities and delivery of services keeps pace with development and growth of the city.
- ▲ Policy PHS 2.1.11: Development Fees for Facilities and Services. The City shall require development projects to contribute fees for fire protection services and facilities.
- ▲ PHS 2.2.2: Development Review. The City shall continue to include the Fire Department in the review of development proposals to ensure projects adequately address safe design and on-site fire protection and comply with applicable fire and building codes.
- ▲ PHS 2.2.4: Water Supply for Fire Suppression. The City shall ensure that adequate water supplies are available for fire-suppression throughout the city, and shall require development to construct all necessary fire suppression infrastructure and equipment.

North Natomas Community Plan

The North Natomas Community Plan (NNCP) was updated as part of the 2035 General Plan on March 3, 2015 and provides the City's vision statement as well as supplemental policies for the community related to

land use and urban design, housing, circulation, community services and facilities, public health and safety, and environmental resources. The following policy is relevant to environmental review of the project.

- ▲ Policy LU 1.4: Financing Plan. The City shall ensure that the Financing Plan will provide assurance that all essential infrastructure and public facilities (necessary for public health, safety, welfare, and education) are in place and operational to serve each phase of development.

Law Enforcement

City of Sacramento 2035 General Plan

The following policies are relevant to environmental review of the project.

- ▲ Policy PHS 1.1.2: Response Time Standards. The City shall strive to achieve and maintain optimal response times for all call priority levels to provide adequate police services for the safety of all city residents and visitors.
- ▲ Policy PHS 1.1.3: Staffing Standards. The City shall maintain optimum staffing levels for both sworn police officers and civilian support staff in order to provide quality police services to the community.
- ▲ Policy PHS 1.1.4: Timing of Services. The City shall ensure that development of police facilities and delivery of services keeps pace with development and growth in the city.
- ▲ Policy PHS 1.1.7: Development Review. The City shall continue to include the Police Department in the review of development proposals to ensure that projects adequately address crime and safety, and promote the implementation of Crime Prevention through Environmental Design principles.
- ▲ Policy PHS 1.1.8: Development Fees for Facilities and Services. The City shall require development projects to contribute fees for police facilities.

City of Sacramento Municipal Code

Chapter 2.20 (Police Department) of the City's Municipal Code sets forth the guidelines for the SPD and includes no relevant public services regulations that are relevant to environmental review of the project.

North Natomas Community Plan

The following policies are relevant to environmental review of the project.

- ▲ Policy PHS 1.2: Police Protection Service. The City shall locate a five acre police substation in the Town Center. Locating the police station near the regional park enhances the sense of safety in the park. Prior to development, the City Police Department must verify adequate police protection facilities and services, including equipment and personnel, exists to serve the project, or will be provided, to maintain a police protection service standard of 1.60 police officers per 1,000 residents and 1.0 non-sworn personnel for every 1.60 police officers added either through a funded program or as a condition of approval for the project. The Police Department requires a police substation to be provided prior to 60 percent of the land being developed within the North and South Natomas areas. The station provides service to the subregion of North and South Natomas and is able and projected to accommodate 220 officers and non-sworn personnel.
- ▲ Policy PHS 1.3: Police Protection. The City shall provide excellent fire and police protection to the residents, workers, and visitors to the North Natomas Community.
- ▲ Policy PHS 1.4: Police Protection Design. The City shall design the physical form of the community to require less police protection.

Schools

City of Sacramento General Plan

The following policies are relevant to environmental review of the project.

- ▲ Policy ERC 1.1.1: School Locations. The City shall work with school districts at the earliest possible opportunity to provide school sites and facilities that are located in the neighborhoods they serve.
- ▲ Policy ERC 1.1.2: Locational Criteria. The City shall continue to assist in reserving school sites based on each school district's criteria and the school siting guidelines of the California Department of Education and on the City's following location criteria:
 - Locate elementary schools on sites that are safely and conveniently accessible, and away from heavy traffic, excessive noise, and incompatible land uses.
 - Locate school sites centrally with respect to their planned attendance areas.
 - Locate schools in areas where established and/or planned walkways, bicycle paths, or greenways link schools with surrounding uses.
 - Locate, plan, and design new schools to be compatible with adjacent uses.

North Natomas Community Plan

The following policies are relevant to environmental review of the project.

- ▲ Policy ERC 1.5: Coordination with School Districts. Prior to the approval of any rezoning or land use entitlements for any residential land use within the Plan area, the applicant shall enter into an agreement with the appropriate school district(s) that will ensure the provision of adequate school facilities to serve the residential dwelling units when needed. The appropriate school district and the building community will cooperate in drafting a financing plan that will address the provisions of adequate school facilities to serve the planned residential areas when needed. The Plan will consider Mello-Roos financing and Impaction Fees among other possible sources of funds.
 - Overlay Zone with Compatible Underlying Zone: The Institution (I) zone is an overlay zone with an underlying zone. The underlying zone is compatible with adjacent parcels. For example, "IIMD" is an institution zone with a medium-density residential underlying zone that would likely be adjacent to other residential uses.
 - Sunset Clause: For institutional uses, the time period allowed to develop one of the institutional uses on a specific property is five years from the date that an adjacent parcel obtains a certificate of occupancy or final building inspection. After the five years has elapsed without approval of an institutional use project on the site, the site may be designated to the underlying zone and be developed with the proper Special Permits.
- ▲ Policy ERC 1.14: School Location Criteria. The City shall concentrate residential dwellings sufficiently to allow for all students to be within walking distance of the schools and locate school facilities to minimize the transporting of students by bus. Walking access standards for school facilities should not exceed the district's recommended walking distance (one way) from the most remote part of the attendance area:
 - One-Way Walking Standards: Kindergarten (½ mile), Grades 1 to 6 (¾ mile), Grades 7 and 8 (2 miles), and Grades 9 to 12 (3 miles).
 - Students living at a greater distance will be bused to a school.

- Special-education children and special-project students will require that school buses enter and leave all school sites. In addition, a large majority of parents transport their children to and from school even when they live within $\frac{3}{4}$ mile; therefore, traffic patterns around the school and to and from the school should be controlled.
- School sites should be located away from incompatible land uses such as commercial uses, industrial parks, agricultural areas, airports, and freeways. The location of schools shall comply with the California Department of Education's setback guidelines related to proximity of schools to transmission lines. Elementary and junior high school sites should be located so that as few as possible residential sites abut the school, and the school is bounded on at least two sides by minor streets.
- Elementary and junior high school sites should not be located on major arterials. Streets fronting on school sites should be fully improved streets. Curbs on streets adjacent to school sites should be vertical curbs, and at least one street providing access to the site from a major arterial should be constructed of sufficient width or with off-street drop off zones to allow for parent and school bus traffic.
- ▲ Policy ERC 1.16: School Acreage Criteria. The City shall designate the following number of acres of land for each type of public school: 10 acres for each elementary school; 20 acres for each junior high school; 40 acres for each high school. These acreages should be evaluated at the time of acquisition by the school district considering the actual size of the school site and joint agreements with the City Parks Department. (RDR/MPSP) Site Criteria: A school site must be a flat, rectilinear site with a proportion length to width ratio not to exceed two to one. The site must be a corner site with two boundaries bordering on public thoroughfares.
- ▲ Policy ERC 1.17: Developer Dedication of School Sites and Improvements. The school districts require a school site be provided with adjacent street improvements providing access and infrastructure to the site no later than one year prior to construction of the 500th single-family residence in the school service area.

Recreation

City of Sacramento Municipal Code

Sacramento City Code, Chapter 17.512, Parks and Recreational Facilities

Chapter 17.512 of the City Code provides the City's requirements for the dedication of parkland and/or payment of in-lieu fees under the Quimby Act. To determine the required parkland dedication, the City multiplies the number of dwelling units by specified factors to produce 3.5 acres per 1,000 residents. These factors are shown below:

- ▲ 0.0095 for single-family dwelling units
- ▲ 0.0082 for two-family dwelling units
- ▲ 0.0074 for multiple-family dwelling units

Sacramento City Code, Chapter 18.56, Park Development Impact Fee

Chapter 18.56 of the City of Sacramento Code imposes a park development fee on residential and non-residential development within the city. Fees collected pursuant to Chapter 18.56 are primarily used to finance the construction of park facilities.

City of Sacramento General Plan

The following policies are relevant to environmental review of the project.

- ▲ Policy ERC 2.2.2: Timing of Services. The City shall ensure that the development of parks and community and recreation facilities and services keeps pace with development and growth within the city.

- ▲ Policy ERC 2.2.3: Service Level Radius. The City shall strive to provide accessible public park or recreational open space within one-half mile of all residences.
- ▲ Policy ERC 2.2.4: Park Acreage Service Level Goal. The City shall strive to develop and maintain 5 acres of neighborhood and community parks and other recreational facilities/sites per 1,000 population.
- ▲ Policy ERC 2.2.5: Meeting Service Level Goal. The City shall require new residential development to meet its fair share of the park acreage service level goal by either dedicating land for new parks, paying a fair share of the costs for new parks and recreation facilities or renovation of existing parks and recreation facilities. For new development in urban areas where land dedication or acquisition is constrained by a lack of available suitable properties (e.g., the Central City), new development shall either construct improvements or pay fees for existing park and recreation enhancements to address increased use. Additionally, the City shall identify and pursue the best possible options for park development, such as joint use, regional park partnerships, private open space, acquisition of parkland, and use of grant funding.
- ▲ Policy ERC 2.2.12: Compatibility with Adjoining Uses. The City shall ensure that the location and design of all parks, recreation, and community centers are compatible with existing adjoining uses.
- ▲ Policy ERC 2.2.17: Joint-Use Facilities Co-located. The City shall support the development of parks and recreation facilities co-located with public and private facilities (e.g., schools, libraries, and detention basins).
- ▲ Policy ERC 2.4.1: Service Levels. The City shall provide 0.5 linear mile of parks/parkways and trails/bikeways per 1,000 population.
- ▲ Policy ERC 2.4.3: Connections to Other Trails. The City shall maintain existing and pursue new connections to local, regional, and state trails.
- ▲ Policy ERC 2.5.4: Capital Funding. The City shall fund the costs of acquisition and development of City neighborhood and community parks, and community and recreation facilities through land dedication, in lieu fees, and/or development impact fees.

When determining whether the City of Sacramento is meeting its service level goals, the City considers neighborhood parks and community parks together as “neighborhood/community serving” acreage, with a total goal of 3.5 acres per 1,000 residents. Included in the “citywide/regionally serving” service level goal are regional parks, linear parks/parkways, and open space.

North Natomas Community Plan

The following policies are relevant to environmental review of the project.

- ▲ Policy ERC 1.3: Park Phasing. The City shall require that neighborhood and community parks be provided when a minimum of 50 percent of the residential land development in the park service area is completed.
- ▲ Policy ERC 1.8: Park Location Criteria. The City shall require that parks with active recreational uses which may negatively impact residential areas due to traffic, noise, and lighting should be sited so as to have minimal impact on surrounding residences. The City shall discourage or minimize residential back-on lots or side lots adjacent to parks. Neighborhood parks should be located along small residential streets or other connections within neighborhoods where they are easily accessed on foot. Community parks should be located along drainage canals or basins and/or along major streets where the park is easily visible and accessible by foot, bike, transit, or car.
- ▲ Policy ERC 1.9: NN.ERC 1.9 Park Dedication Standard. The City Parks & Recreation Department must verify that the park standard has been met with dedicated park lands or in-lieu fee credit. With a projected population of 66,910, the number of required neighborhood park acres is 167, and the

number of the required community park acres is 167. The number of acres of community and neighborhood parks shown on the map includes 247.8 plus 20 acres of the regional park, or 267.8 acres. This number of acres does not include any joint-use school/park acres.

Libraries

There are no specific local policies associated with libraries that are relevant to environmental review of the project.

5.10.3 Impacts and Mitigation Measures

SIGNIFICANCE CRITERIA

Based on Appendix G of the State CEQA Guidelines, the project would result in a potentially significant impact on public services and recreation if it would:

- ▲ result in substantial adverse physical impacts associated with the provision of new or physically altered governmental services and/or facilities, the construction of which could cause significant environmental impacts, to maintain acceptable service ratios, response times, or other performance objectives for:
 - fire protection,
 - police protection,
 - schools, and
 - maintenance of public facilities or other governmental services.
- ▲ increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated.
- ▲ Include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment.

METHODS AND ASSUMPTIONS

The analysis evaluates impacts the project would have on existing public services and recreation if the project, as currently proposed, were approved and implemented. Impact significance is determined by comparing project conditions to the existing conditions, using the above significance criteria. The general methodology employed is based on information provided in consultation with public services staff and review of available documents, including the *City of Sacramento 2035 General Plan* and Master EIR and the *North Natomas Nexus Study and Finance Plan 2008 Update*.

While not included in the Panhandle PUD, the future development of the Krumenacher Ranch site is addressed in the impact analysis below.

ISSUES DISMISSED FROM FURTHER CONSIDERATION

All public services and recreation-related issues addressed in the significance criteria are evaluated below, and no issues were dismissed from further consideration.

PROJECT IMPACTS AND MITIGATION MEASURES

Impact 5.10-1: Increased demand for fire protection and emergency medical services

Implementation of the project at build-out would increase the demand for fire protection and emergency medical services that could result in the need for improvements to facilities and equipment. This would be a **potentially significant** impact.

The project area is currently served by the NFPD which is under a contractual agreement with the City to provide additional fire protection service. Once annexed, the project area would be served by the SFD.

As required for mandatory compliance with the UFC/City Code Chapter 15.36, project design would comply with regulations relating to construction, maintenance, and use of buildings. The UFC contains specialized technical regulations related to fire and life safety. Such mandatory fire prevention and deterrence measures would include, but not be limited to, fire department access, fire hydrants, automatic sprinkler systems, fire alarm systems, fire and explosion hazards safety, hazardous materials storage and use, provisions intended to protect and assist fire responders, industrial processes, and other fire-safety requirements for new and existing buildings and the surrounding premises. As described in Section 5.13, "Utilities," there is adequate water supply and distribution facilities to provide sufficient fire flow to the project area.

Development would also be required to comply with state and local fire regulations, as outlined in the California Health and Safety Code and the City Code and fire prevention code. Compliance with these mandatory regulations would ensure that fire and other emergency service providers would have adequate access to all properties within the project area in the event of a fire emergency. Compliance would also support fire suppression and decrease the likelihood of fire spreading through preventative measures such as fire sprinklers and appropriate fire-safe vegetation choices and clearing requirements, and through the use of fire-safe building materials, building plans, emergency access details and site plans.

The 2035 General Plan and NNCP public health and safety policies, as discussed above, section 5.10.2, Regulatory Setting, provides additional recommendations regarding the availability of adequate water supply and pressure for fire suppression purposes, and development of adequate fire station facilities.

Because the project area is served by Station 30 which was recently constructed to serve anticipated growth in the North Natomas area, development of the project area would not result in the need for the construction of new fire protection facilities. The project would contribute to the need for facility improvements and equipment needs that would be addressed through its payment of impact fees and funding through the Panhandle PUD Public Facilities Financing Plan (once adopted). The following mitigation measures are recommended to ensure funding for equipment and facility needs is provided in a timely manner.

New fire personnel need would be addressed through the project property taxes and funding allocations through the City's budget and general fund.

Future development of the Krumenacher Ranch will be required to establish its own financing program for funding of fire protection facility needs and/or amend the Panhandle PUD Public Facilities Financing Plan.

Mitigation Measure 5.10-1a Payment of fees

The project applicant shall pay the necessary project-specific fire service impact fees associated with fire protection services which will be established in the Panhandle PUD Public Facilities Finance Plan.

Mitigation Measure 5.10-1b Panhandle PUD Public Facilities Finance Plan

The Panhandle PUD Public Facilities Finance Plan shall include all necessary public facility improvements (e.g., fire, law enforcement, water, wastewater, parks, roadways, and libraries) intended to solely serve the PUD as well as its fair-share contribution to public facilities that serve the North Natomas Community Plan area as

identified in the *North Natomas Nexus Study and Finance Plan 2008 Update*. The Panhandle PUD Public Facilities Finance Plan shall ensure that public facilities and equipment required to service the project are in place concurrent with site development.

Significance after Mitigation

Implementation of Mitigation Measures 5.10-1a and 5.10-1b would reduce significant impacts on SFD service to a **less-than-significant** level because the payment of development fees and the provisions of the project's Public Facilities Finance Plan would ensure the project will contribute the necessary funding for necessary fire and medical emergency facilities and equipment. These mitigation measures would be consistent with General Plan policies PHS 2.1.3, PHS 2.1.4, PHS 2.1.5, PHS 2.1.1, and North Natomas Community Plan Policy NN.LU 1.4 regarding the provision and financing of public facilities concurrent with development.

Impact 5.10-2: Increase the need for police protection services

Implementation of the project at build-out would increase the demand for law enforcement services that could result in the need for improvements to facilities and equipment. This would be a **potentially significant** impact.

The project would result in the development of up to 2,660 new residential units and the addition of approximately 7,182 residents (2,660 units x 2.7 persons per household = 7,182). Based on the City's standard of 1.6 sworn officers per 1,000 residents and 1.0 civilian support staff for every 1.6 sworn officers (North Natomas Policy PHS 1.2), the residential portion of the project would result in the demand for as many as 11 additional sworn officers and 7 civilian support staff at build-out. The proposed 101,277 square feet of retail/commercial development and new elementary school would generate further demand for both sworn officers and civilian support staff.

This is consistent with the analysis provided in the City of Sacramento General Plan Master EIR (Impact 4.10-1) for the 2035 General Plan which found that buildout of the General Plan, including the project area, would require the addition of 330 to 413 additional sworn officers and 165 to 207 civilian support staff. The 2035 General Plan identifies several new police stations and associated facilities as subsequent projects. These facilities would accommodate up to 600 new sworn officers and support staff. Potential impacts associated with construction of these facilities were programmatically evaluated in the City of Sacramento 2035 General Plan Master EIR. The planned North Natomas Police Station envisioned for the Town Center along Del Paso Road would provide law enforcement services near the project area. The project would not trigger the need for the station to be built at the same time as project development, but would be required to assist in its funding through the Panhandle PUD Public Facilities Financing Plan.

New law enforcement personnel would be addressed through the project property taxes and funding allocations through the City's budget and general fund.

Future development of the Krumenacher Ranch will be required to establish its own financing program for funding of law enforcement facility needs and/or amend the Panhandle PUD Public Facilities Financing Plan.

Mitigation Measures

Implement Mitigation Measures 5.10-1a and 5.10-1b.

Significance after Mitigation

Implementation of Mitigation Measures 5.10-1a and 5.10-1b would reduce significant impacts on law enforcement services to a **less-than-significant** level because the payment of development fees and the provisions of the project's Public Facilities Finance Plan would ensure the project will contribute to the North Natomas Police Station. These mitigation measures would be consistent with General Plan policies PHS 1.1.2, PHS 1.1.4, and PHS 1.1.8, North Natomas Community Plan policies NN.LU 1.4 and NN.PHS 1.2 regarding the provision and financing of public facilities concurrent with development.

Impact 5.10-3: Result in the need for expanded school facilities

The project at build-out would result in increased demand of public school services. However, TRUSD anticipates having a substantial number of open seats within its schools through 2023 and the project includes a junior high/high school within the project area. In addition, RSD is projected to have capacity to serve elementary school students with future development of the proposed elementary school. These schools would serve project residents and the surrounding area. The project would also be required to pay school facility impact fees to mitigate its contribution to school facility needs. This would be a **less-than-significant** impact.

The project would contribute new school-age children to the TRUSD and RSD. Based on student generation rates provided in the NNCP, the Panhandle would generate up to a total of 675 students, as shown in Table 5.10-6 below. Should the Krumenacher Ranch site develop into residential uses, it could generate a student demand of up to 353 elementary students, 93 middle school students, and 162 high school students.

Table 5.10-6 Projected Student Generation for Panhandle PUD

Land Use	Elementary (K-6)		Middle School (7-8)		High School (9-12)	
	Generation Factor	Students	Generation Factor	Students	Generation Factor	Students
Low/Medium Density (452 du) ¹	0.34	154	0.09	41	0.156	71
Medium/High Density (1,171 du) ²	0.20	234	0.08	94	0.069	81
Subtotal		388		135		152
Total Student Generation						675

Source: City of Sacramento 2015

Notes:

- ¹ The Low/Medium Density category includes the proposed “Estate” lots and all potential lots within the Suburban Center and PD designation as lot sizes and unit counts have not yet been determined. This is a conservative approach and likely overestimates potential student enrollment.
- ² The Medium/High Density category includes the proposed “Traditional” and “Compact” lots.

As shown in Table 5.10-2, TRUSD anticipates having a substantial number of open seats within its schools through 2023. In addition, the project includes two school sites for the future development of an elementary school and co-located junior high/high schools to serve project residents and the surrounding area.

The East Natomas Education Complex has been approved by the TRUSD and is partially constructed. The junior high school is planned to serve approximately 1,000 students and the high school is planned to serve 1,800 students (GJUHD 2005). The schools will be completed and opened as growth occurs and there is demand for additional school capacity. Students from the Panhandle PUD would constitute approximately 14 percent and eight percent of the junior high and high school capacities, respectively.

The Panhandle PUD would generate approximately 388 elementary school students. The capacity of the future on-site elementary school has not yet been established, but is estimated that it could accommodate approximately 500 students. Elementary school students residing in the southern portion of the project could attend schools within the TRUSD or RCD. In addition, the TRUSD routinely adjusts attendance boundaries to balance school capacity with student enrollment. Thus, if the project exceeds the capacity of the planned school, students may attend an existing school in the surrounding area such as Regency Park Elementary. This existing elementary school is located less than one half mile west of the project area and currently had approximately 148 open seats in 2015 (TRUSD 2015). Thus, the TRUSD is anticipated to have sufficient capacity to serve the proposed development and no new or expanded school sites would be required beyond those proposed within the project site.

Government Code Section 65995 establishes the dollar amount school districts may impose on new development; however, this may not be sufficient to fund all required facilities. Funding from state grants is possible but other sources would most likely still be required. Sources include but are not limited to Proposition 51 funds, increased developer and local tax fees, and the local general obligation bond funds. New public school facilities must undergo site-specific CEQA and California Board of Education evaluation prior to construction to identify and lessen environmental related impacts. This EIR provides an initial environmental review of the proposed on-site elementary school site.

California Government Code Sections 65995 (h) and 65996 (b) require full and complete school facilities mitigation. Section 65995(h) states that the payment or satisfaction of a fee, charge, or other requirement levied or imposed pursuant to Section 17620 of the Education Code is deemed to be full and complete mitigation of the impacts for the planning, use, development, or the provision of adequate school facilities and Section 65996 (b) states that the provisions of the Government Code provide full and complete school facilities mitigation. Therefore, the project's public school facility impacts would be **less than significant**.

Mitigation Measures

No mitigation measures are required.

Impact 5.10-4: Increase the demand for parks and recreational facilities

Implementation of the project at buildout would result in an increase in the demand for park and recreation facilities. The project would meet the City's requirements for parkland through parkland dedication and/or payment of in-lieu fees. This would be a **less-than-significant** impact.

Based on City and NNCP requirements (North Natomas Community Plan and City Code Title 17, Chapter 17.512), the Panhandle PUD's parkland dedication requirement would be 15.4-acres using the City's acreage factor of 0.0095 for single-family dwelling units. This is a conservative estimate as it assumes all residential units in the project area would be single-family units. The number of two-family and multiple-family dwelling units that would be constructed in the project area has not yet been determined. As individual development projects are proposed within the Panhandle PUD, the precise parkland requirements would be calculated. Based on the City's goal for the provision of trails and parkways (0.5 miles of trail per 1,000 residents), the project would also be required to provide approximately 3.1 miles of linear trail.

The Panhandle PUD proposes 56.5 net acres of parks and open space uses consisting of park facilities (15.6 net acres), open space parkway (27.5 net acres) and detention areas (13.4 net acres). The Ninos Parkway would be situated in the eastern part of the Panhandle PUD and would provide active and passive recreation opportunities and a trail system. Future development of the Krumenacher Ranch site will be required to demonstrate compliance with City park dedication requirements and is anticipated to complete the northern extent of the Ninos Parkway.

As described in Sacramento City Code Section 17.56.90, the project would be eligible for a parkland dedication credit of up to 25 percent of the dedication requirement, or 3.87 acres, for the provision of open space.

The project applicants would also be required to pay in-lieu fees as necessary to ensure compliance with the City's parkland requirements and to ensure that adequate parkland is provided to project residents. Therefore, the project would not result in substantial deterioration or other physical impacts to existing recreation facilities. The environmental effects of the development of the on-site park and recreational facilities has been address in the technical sections of this EIR. This impact would be **less than significant**.

Mitigation Measures

No mitigation measures are required.

Impact 5.10-5: Increase demand for library facilities

Implementation of the project at buildout would increase the demand for library services. However, the project would not result in the need to construct any new, unplanned library facilities, and the applicant would be required to pay into a fee program that would contribute to the continued funding of the North and South Natomas libraries. This would be a **less-than-significant** impact.

The project area would be served primarily by the North Natomas Library and secondarily by the South Natomas library. Together, these libraries can accommodate the population in the project area. Thus, development of the project area as proposed would not, in and of itself, trigger the need for new or expanded library facilities in addition to the existing North and South Natomas libraries.

In June 2016, City of Sacramento voters approved to extend Measure X, an initiative to continue a parcel tax providing the library with approximately \$5 million annually, for an additional ten years. Measure X levies a flat tax of \$31.53 per household annually. The residential units in the Panhandle PUD would be subject to, and comply with, Measure X. In addition, the project would be required to pay development fees through the finance plan that would support the funding of public services needed to serve all development within the project area. The fee program would be structured to ensure that basic facilities are in place when needed for development, including library services. The need for expansion of library services and facilities is discussed in the Sacramento Public Library's Facilities Master Plan and is based on SACOG population projections. Because the project would not result in the need to construct any new, unplanned library facilities, and the applicant would pay into a fee program that would contribute to the continued funding of the North and South Natomas libraries, the project would result in a **less-than-significant** impact to library services.

Mitigation Measures

No mitigation measures are required.

5.10.4 Cumulative Setting, Impacts, and Mitigation Measures

CUMULATIVE SETTING

The cumulative setting for public services and recreation includes the project and other development projects in the City and County (see Table 5-2) that would result in additional use of existing public services and recreation or require the construction of new public service or recreation facilities.

CUMULATIVE IMPACTS AND MITIGATION MEASURES

Cumulative Impact 5.10-6: Cumulative impacts to public services and recreation

Implementation of the project in combination with development in the City and County would contribute to potentially significant cumulative impacts on public services and recreation in the region. However, with implementation of the mitigation measures proposed in addition to payment of impacts, the project's contribution to these impacts would be reduced to a less than significant level. Therefore, the project's contribution to cumulative public service impacts **would not be cumulatively considerable**.

As identified in Table 5-2, the North Natomas area is anticipated to experience substantial new growth in the future associated with the Greenbriar, Natomas North Precinct Master Plan, and Natomas Central Planned Unit Development projects that would place cumulative demands on public services and facility needs. As identified under Impacts 5.10-1, 5.10-2, 5.10-3, and 5.10-4, the project would contribute to the cumulative need for fire protection, emergency medical services, police protection services, parks, and library services.

However, the implementation of Mitigation Measures 5.10-1a and 5.10-1b would require that the project develop financing mechanisms to ensure that public facility needs for the project and its fair-share of public facilities to service the North Natomas Community Plan area are addressed. In addition, the project would provide park facilities and providing funding through fees and taxes that would address its demand for park facilities and libraries. Future development of the Krumenacher Ranch will be required to establish its own financing program for funding of public facility needs and/or amend the Panhandle PUD Public Facilities Financing Plan. Thus, the project **would not have a considerable contribution** to significant cumulative impacts to public services.

Mitigation Measures

No mitigation is required.

5.11 TRANSPORTATION AND CIRCULATION

This transportation and circulation section is based on the *Transportation Analysis Section 4.10, Panhandle Annexation* prepared by DKS Associates (March 9, 2017) and discusses existing and cumulative transportation and circulation conditions associated with the project consistent with City of Sacramento General Plan Policy M 1.2.2 and the City's Traffic Study Guidelines. The analysis includes consideration of motorized vehicle traffic impacts on roadway capacity, vehicle-miles travelled (VMT), potential impacts to transit, bicycle, and pedestrian facilities, and transportation related construction impacts. Quantitative transportation analyses have been conducted for the following scenarios:

- ▲ Existing (without project),
- ▲ Existing Plus Project,
- ▲ Cumulative (2036) No Project, and
- ▲ Cumulative (2036) Plus Project.

In addition, a quantitative review of Cumulative (post-2036) conditions is described in Section 5.11.5 "Post 2036 Cumulative."

The following comments were received in response to the Notice of Preparation (see Appendix A) that are addressed in this section:

- ▲ the traffic impact analysis should include VMT analysis for broad project travel data;
- ▲ the traffic analysis should include any needed VMT-reducing mitigation that results from increased VMT from the project on the state highway system;
- ▲ mitigation should be identified to address increased congestion on highways;
- ▲ mitigation should not be deferred to a subsequent phase of development;
- ▲ cumulative traffic impacts should consider the proposed Natomas North Precinct Master Plan;
- ▲ the traffic analysis should project impacts on Del Paso Road (Gateway Park Boulevard to Black Rock Drive) and the Elkhorn Boulevard and 16th Street intersection;
- ▲ traffic operation and safety impacts on Sorento Road and the Valley View Acres community need to be addressed;
- ▲ evaluate traffic impacts on existing roadways such as Club Center Drive, Del Paso Road, West Elkhorn Boulevard, and Sorento Road;
- ▲ the EIR should consider transit options; and
- ▲ identify when or circumstances for the extension of National Drive to West Elkhorn Boulevard.

5.11.1 Environmental Setting

This section describes the environmental conditions relevant to existing local and regional transportation and circulation for the project.

FREEWAY FACILITIES

The freeway facilities serving the project are described below.

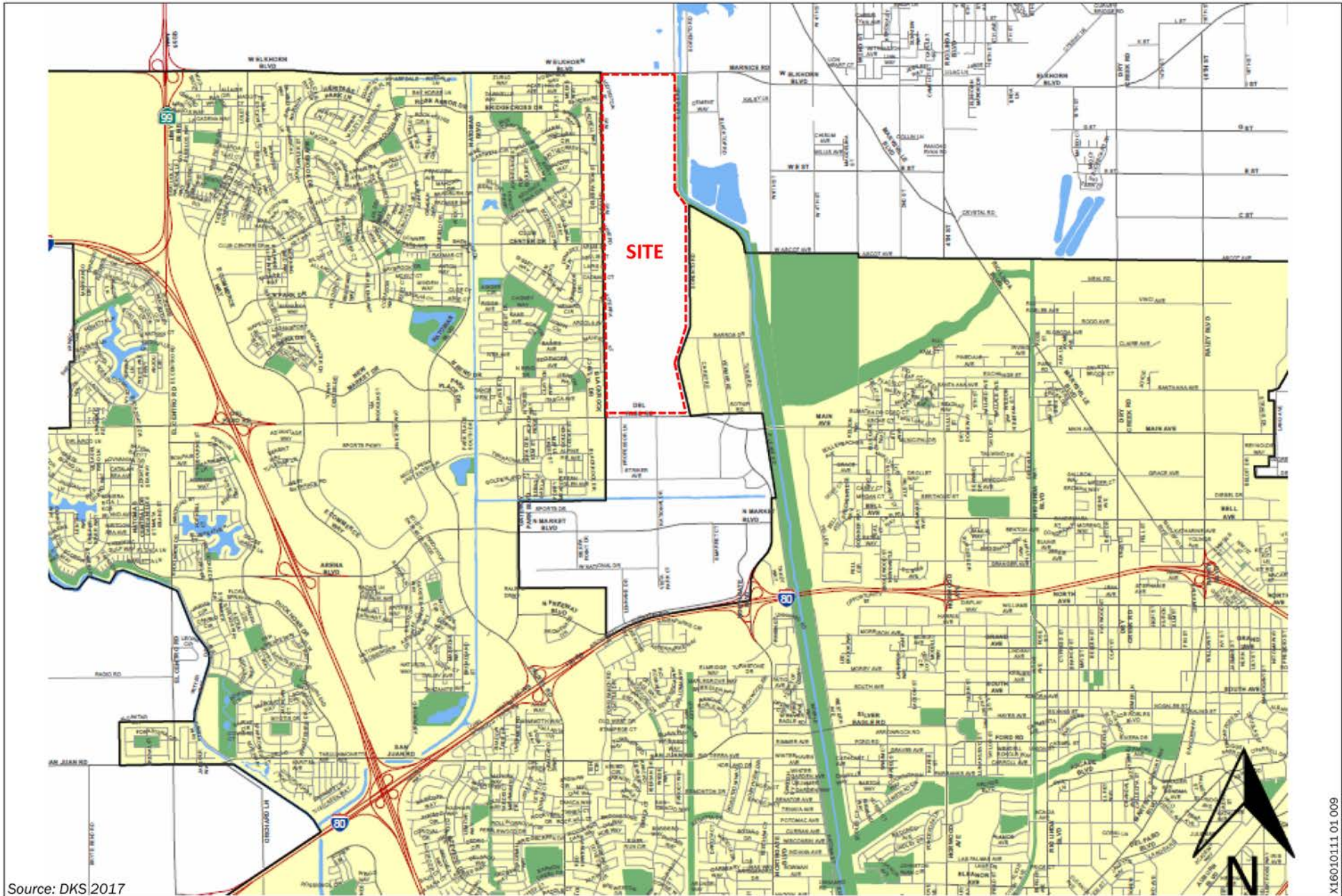
- ▲ **Interstate 80 (I-80)** is a six-lane freeway to the south of the project area. It primarily runs east-west and provides access to the Natomas community in addition to interregional connections east to Reno, Nevada and beyond, and west to the San Francisco Bay Area. Access to I-80 from the project area is provided primarily by interchanges at Truxel Road and Northgate Boulevard. I-80 in the project vicinity had been under construction since August 2011, primarily for the construction of high occupancy vehicle (HOV) lanes. The project was completed in December 2016.
- ▲ **Interstate 5 (I-5)** is a multi-lane freeway that serves as the commute corridor between Downtown Sacramento and North Natomas. Just north of the Del Paso Road interchange, I-5 curves towards the west and continues to the Sacramento International Airport, Yolo County, and beyond. Access to I-5 from the project area is provided primarily by the Del Paso Road interchange.
- ▲ **State Route 99 (SR 99)** is a four-lane freeway that serves as the commute corridor between Yuba and Sutter Counties and Sacramento. SR 99 extends north from the junction of I-5 just north the Del Paso Road interchange. SR 99 continues into Sutter County and beyond. From the project area, access to SR 99 is provided via the Elkhorn Boulevard interchange.

ROADWAY SEGMENTS

The roadway segments of the transportation system near the project are described below. Exhibit 5.11-1 illustrates the roadway network surrounding the project area.

- ▲ **Elkhorn Boulevard**¹ is an east-west roadway beginning at Power Line Road west of SR 99 and extending to the east into Sacramento County through the communities of Rio Linda and Antelope and continuing to I-80 where it becomes Greenback Lane. Elkhorn Boulevard is primarily a two-lane roadway within the study area and serves residential uses in North Natomas and commute trips between unincorporated Sacramento County communities and SR 99.
- ▲ **Del Paso Road** is an east-west roadway beginning at Power Line Road west of I-5 and continuing east to Northgate Boulevard where it becomes Main Avenue. Del Paso Road is primarily a six-lane roadway between I-5 and Blackrock Drive. Westbound Del Paso Road narrows to two lanes between Gateway Park Boulevard and Park Place Drive as it crosses the East Drainage Canal. Del Paso Road provides access to adjacent residential neighborhoods, retail, and light industrial and commercial uses.
- ▲ **Natomas Boulevard / Truxel Road** is a north-south roadway west of the project area. Natomas Boulevard extends south from Elkhorn Boulevard primarily as a four-lane roadway, widens to five lanes (three southbound, two northbound) at Club Center Drive, and to six lanes south of North Park Drive. Natomas Boulevard is a primary arterial serving residential uses within North Natomas and becomes Truxel Road at the Del Paso Road intersection. Truxel Road continues south as an eight-lane road to I-80, and then as a four-lane roadway through South Natomas to Garden Highway.
- ▲ **Club Center Drive** is an east-west collector roadway serving residential areas within North Natomas. The roadway varies in width from two to four through lanes.
- ▲ **Gateway Park Boulevard** is a two to four lane roadway between Truxel Road and North Bend Road. South of Del Paso Road, Gateway Park Boulevard serves the light industrial and retail uses in North Natomas and north of Del Paso Road, Gateway Park Boulevard serves residential uses.

¹ Elkhorn Boulevard is also referred to as “West Elkhorn Boulevard” in some instances in the Draft EIR



Source: DKS 2017

Exhibit 5.11-1

Site Location



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- ▲ **National Drive** extends south of Del Paso Road as a four-lane roadway and serves primarily light industrial uses.
- ▲ **Northgate Boulevard** is a four to six-lane roadway within the study area, extending south of Del Paso Road to I-80 and beyond. Northgate Boulevard primarily serves light industrial uses between Del Paso Road and I-80.
- ▲ **East Levee Road** is a two-lane rural road. North of Elkhorn Boulevard, it continues into Sutter County. The roadway is barricaded immediately south of Elkhorn Boulevard, blocking through motor vehicle traffic between Elkhorn Boulevard and Sorento Road. South of Sorento Road, it continues to Sotnip Road, just north of Main Avenue.
- ▲ **Sorento Road** is a two-lane roadway between Del Paso Road and East Levee Road. It serves residential uses of the Valley View Acres neighborhood.
- ▲ **Kenmar Road** is a north-south two-lane roadway. North of Del Paso Road, it extends to Barros Drive and serves residential uses. South of Del Paso Road, it extends to Striker Avenue and serves an industrial area and the City of Sacramento North Area Corporation Yard.

EXISTING TRANSIT SERVICES

The Sacramento Regional Transit District (RT) operates 69 bus routes and 42.9 miles of light rail covering a 418 square-mile service area. Buses and light rail run 365 days a year using 76 light rail vehicles, 205 buses powered by compressed natural gas and 23 shuttle vans. Buses operate daily from 5 a.m. to 11 p.m. every 12 to 60 minutes, depending on the route. Light rail trains begin operation at 4 a.m. with service every 15 minutes during the day and every 30 minutes in the evening and on weekends. Blue Line and Gold Line trains operate until 12:30 a.m. and the Gold Line to Folsom operates until 7 p.m. Green Line trains operate every 30 minutes Monday through Friday from approximately 6 a.m. to 8:30 p.m. (no weekend or holiday service).

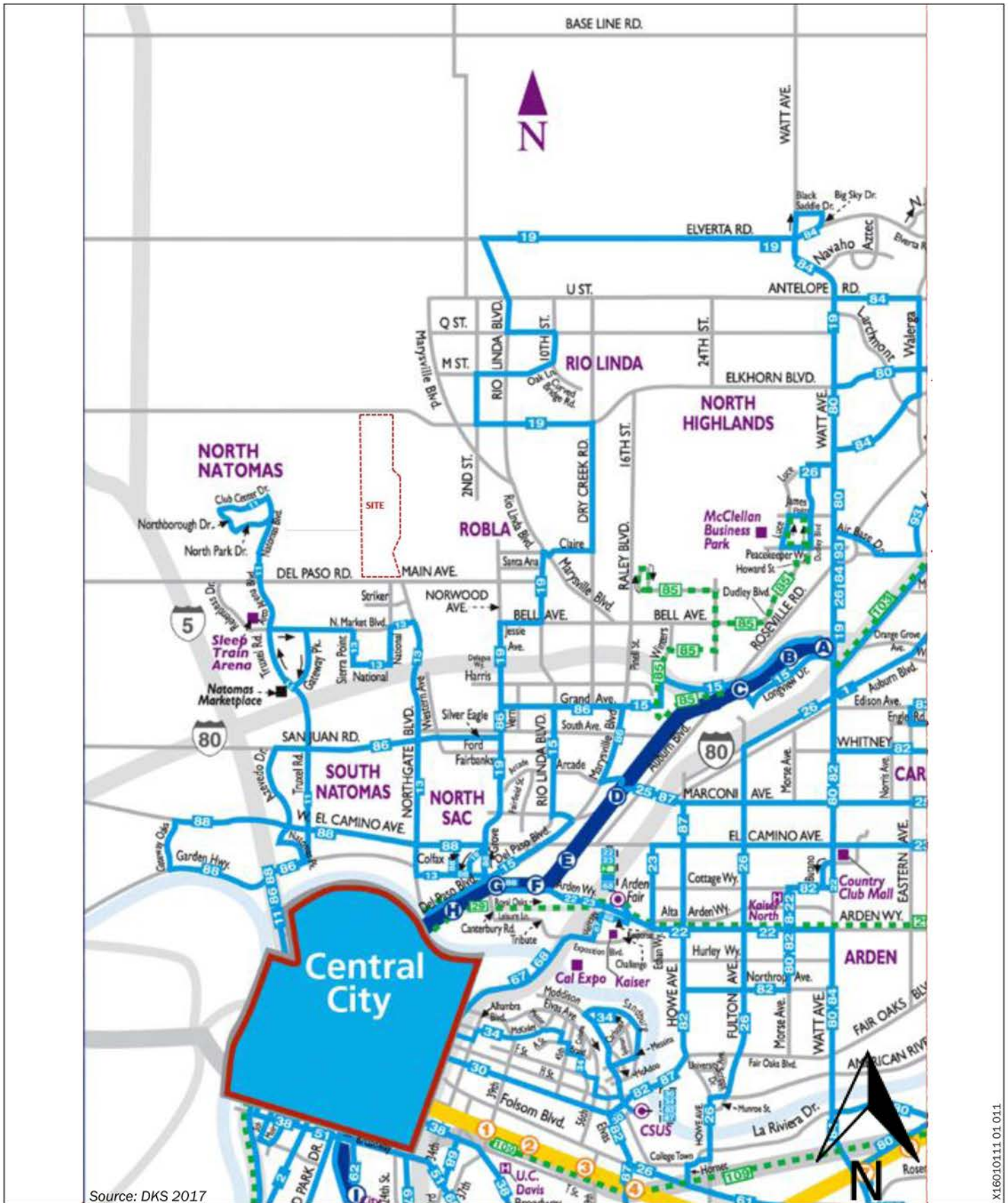
RT Route 13 (Northgate) operates in each direction along North Market Boulevard at National Drive, approximately 0.65 miles south of the project area. To the west, the route loops through North Natomas on Gateway Park Boulevard, Truxel Road, and Arena Boulevard, providing access to Natomas Marketplace. To the east, the route continues southerly along Northgate Boulevard and Arden Way to the Arden / Del Paso Light Rail Station, which is the closest light rail station to the project area.

Route 13 operates at approximately one hour headways on Monday through Friday from approximately 6:00 a.m. to 9:00 p.m. There is no Saturday, Sunday, or Holiday service.

The North Natomas Transportation Management Associate operates the Flyer Shuttle, a peak-period scheduled route transit service between North Natomas and Downtown Sacramento. The Eastside Route (170) operates four buses to Downtown during the a.m. period, and four buses from Downtown during the p.m. period. The bus serves the North Natomas neighborhoods immediately west of the project area, along North Bend Drive, Danbrook Drive, and Bridgecross Drive. RT transit service in the site vicinity is illustrated in Exhibit 5.11-2.

BICYCLE AND PEDESTRIAN FACILITIES

Bicycle facilities are located throughout North Natomas. To the west of the project area, bicycle facilities are located along Del Paso Road, Club Center Drive, and Elkhorn Boulevard. East of the project area, the existing bikeway system is sparse and discontinuous with bikeways currently located along Del Paso Road and Northgate Boulevard. South of Del Paso Road, access is provided to an off-street bikeway along the Walter S. Ueda Parkway, extending south to the American River. North of Del Paso Road, bicyclists can continue travelling on East Levee Road to Elkhorn Boulevard (bypassing the gate) and beyond. Exhibit 5.11-3 illustrates the existing and proposed bicycle system (including the bicycle system proposed for the project) in the site vicinity.



Source: DKS 2017

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Exhibit 5.11-2

Regional Transit Services



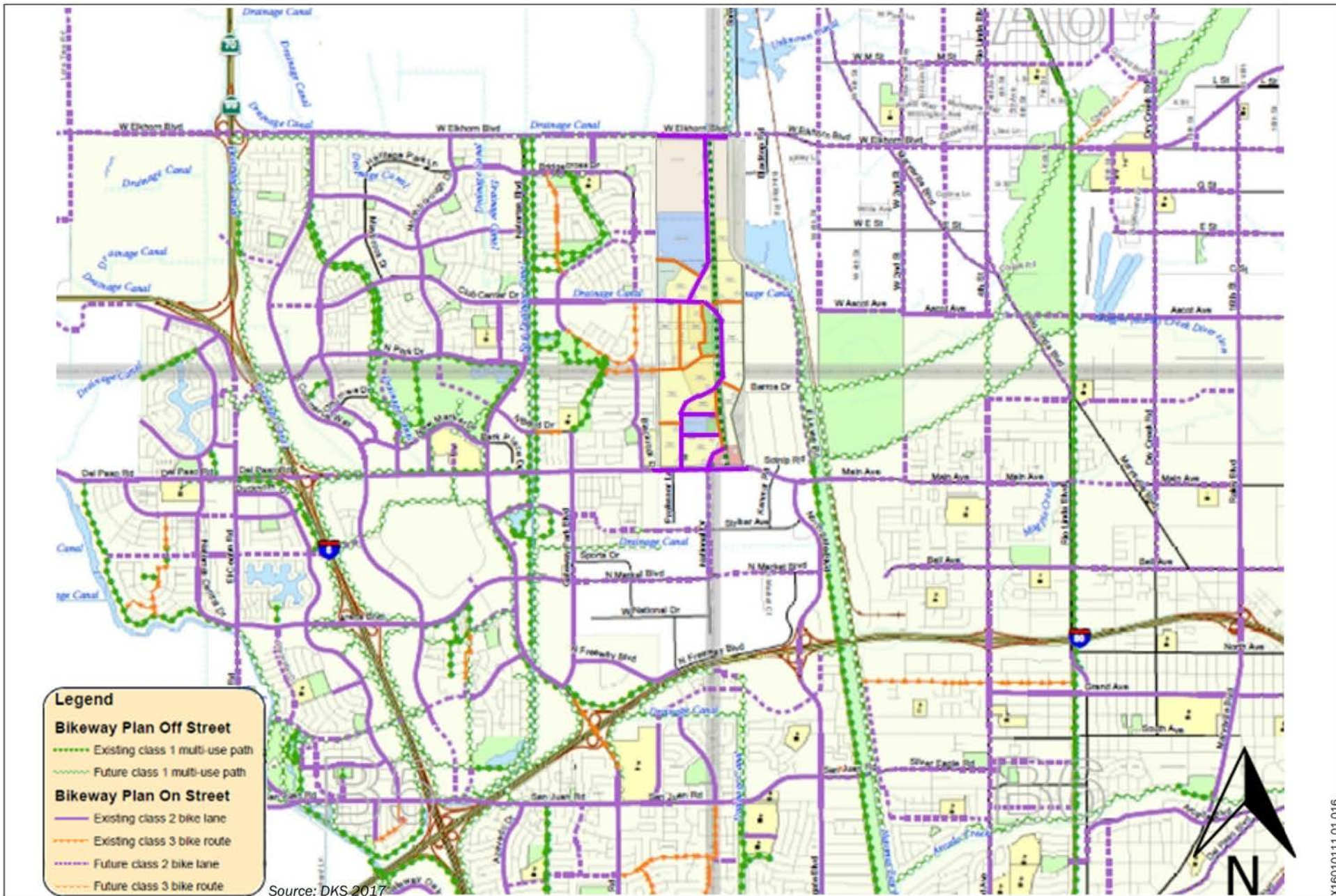


Exhibit 5.11-3

Regional Bikeways



The quality of the pedestrian network varies in the vicinity of the project area. Recently developed areas in North Natomas west of the project area generally have complete and continuous pedestrian systems, with sidewalks on both sides of the streets, and marked crosswalks at major intersections. Similarly, in the light industrial area to the south of the project, sidewalks are provided on both sides of most streets and marked crosswalks are provided at major intersections. To the east of the project area within the Valley View Acres neighborhood, there are no sidewalks or crosswalks present. Additionally, north of the project area there are no sidewalks along Elkhorn Boulevard. Sidewalks are provided on both sides of Del Paso Road in the vicinity of the project area, except along the north side of the street along the project frontage and east to Carey Road.

STUDY AREA

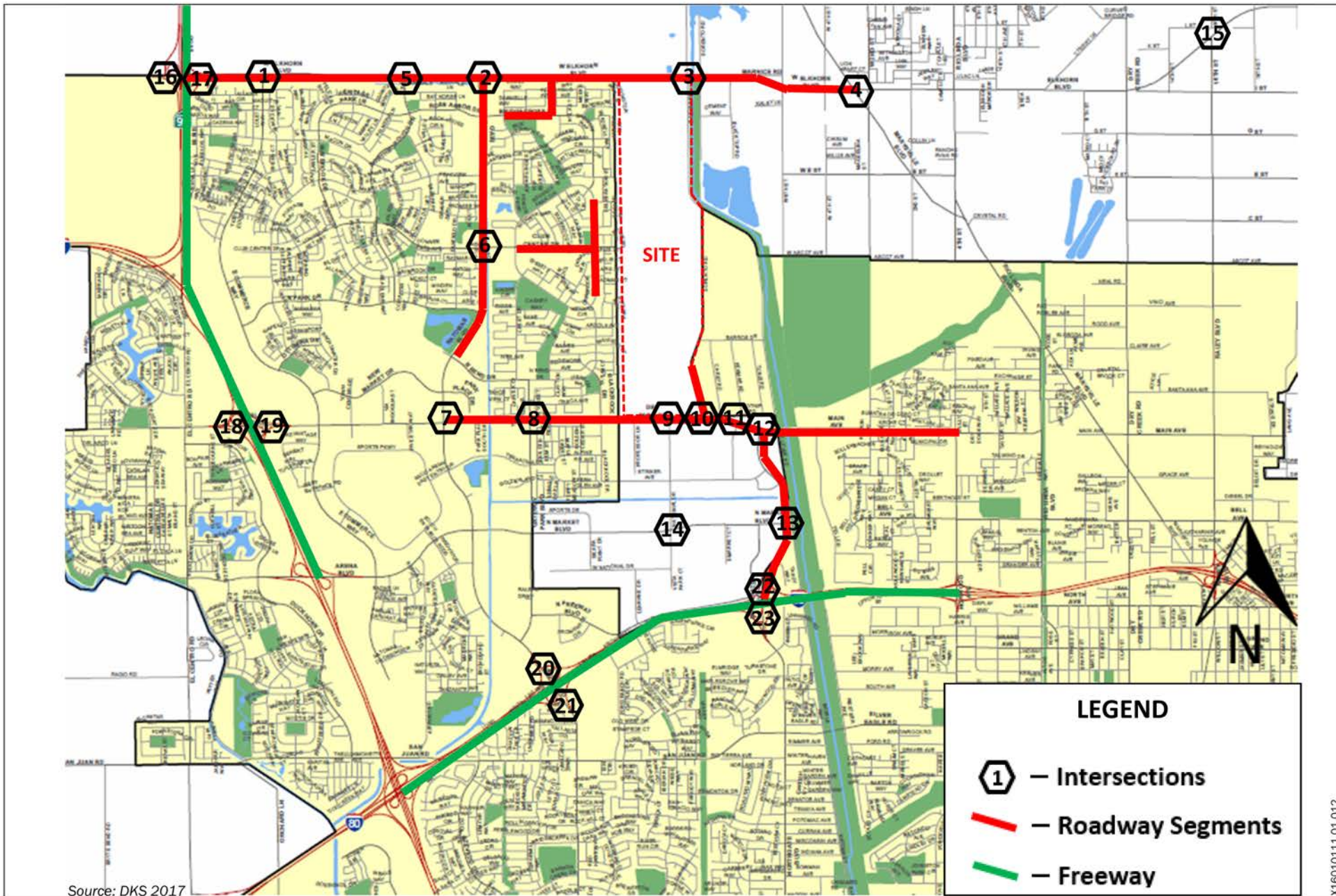
Traffic analysis was conducted for a set of intersections, roadway segments, and freeway facilities that were selected based upon the anticipated volumes, distributional patterns, and known locations of operational issues for the project. These locations are listed below and identified in Exhibit 5.11-4.

▲ Intersections

1. East Commerce Way / Elkhorn Boulevard (signalized)
2. Natomas Boulevard / Elkhorn Boulevard (signalized)
3. E. Levee Road / Elkhorn Boulevard (unsignalized)
4. Marysville Boulevard / Elkhorn Boulevard (signalized)
5. Northborough Drive / Elkhorn Boulevard (signalized)
6. Natomas Boulevard / Club Center Drive (signalized)
7. Natomas Boulevard / Truxel Road / Del Paso Road (signalized)
8. Gateway Park Boulevard / Del Paso Road (signalized)
9. National Drive / Del Paso Road (signalized)
10. Sorento Road / Del Paso Road (unsignalized)
11. Kenmar Road / Del Paso Road (unsignalized)
12. Northgate Boulevard / Del Paso Road (signalized)
13. Northgate Boulevard / North Market Boulevard (signalized)
14. National Drive / North Market Boulevard (signalized)
15. 16th Street / Elkhorn Boulevard (signalized)
16. Elkhorn Boulevard / SR 99 Southbound Ramps (unsignalized)
17. Elkhorn Boulevard / SR 99 Northbound Ramps (signalized)
18. Del Paso Road / I-5 Southbound Ramps (signalized)
19. Del Paso Road / I-5 Northbound Ramps (signalized)
20. Truxel Road / I-80 Westbound Ramps (signalized)
21. Truxel Road / I-80 Eastbound Ramps (signalized)
22. Northgate Boulevard / I-80 Westbound Ramps (signalized)
23. Northgate Boulevard / I-80 Eastbound Ramps (signalized)

▲ Roadway Segments

- ▶ Elkhorn Boulevard
 - SR 99 to East Commerce Way
 - East Commerce Way to Northborough Drive
 - Northborough Drive to Natomas Boulevard
 - Natomas Boulevard to Sageview Drive
 - Sageview Drive to E. Levee Road
 - E. Levee Road to Marysville Boulevard
- ▶ Natomas Boulevard
 - North Bend Drive to Club Center Drive
 - Club Center Drive to Elkhorn Boulevard



Source: DKS 2017

Exhibit 5.11-4

Study Area



- Del Paso Road
 - Truxel Road to Gateway Park Boulevard
 - Gateway Park Boulevard to Black Rock Drive
 - Black Rock Drive to National Drive
 - National Drive to Northgate Boulevard
- Northgate Boulevard
 - Del Paso Road to North Market Boulevard
 - North Market Boulevard to I-80
- Main Avenue
 - Northgate Boulevard to Norwood Avenue
- Sageview Drive
 - Elkhorn Boulevard to Bridgecross Drive
- Bridgecross Drive
 - East of Honor Parkway
- Regency Park Circle
 - North of Club Center Drive
- Danbrook Drive
 - South of Club Center Drive
- Sorento Road
 - North of Del Paso Road
- Club Center Drive
 - Danbrook Drive to Danbrook Drive
- ▲ Freeway Mainline
 - I-5
 - Arena Boulevard to Del Paso Road
 - Del Paso Road to SR 99
 - SR 99
 - I-5 to Elkhorn Boulevard
 - Elkhorn Boulevard to Elverta Road
 - I-80
 - I-5 to Truxel Road
 - Truxel Road to Northgate Boulevard
 - Northgate Boulevard to Norwood Avenue
- ▲ Interchange Freeway Ramp Termini
 - Intersections 16 through 23

Existing Intersection Geometry

Existing intersection geometry (number of approach lanes and traffic control) is illustrated in Exhibit 5.11-5. Additional geometric data is included in Appendix H.

Existing Traffic Volumes and Data

Intersections

Peak period intersection turning movement counts were conducted for intersections 1 through 15 during the a.m. weekday peak period (7:00 to 9:00 a.m.) and the p.m. weekday peak period (4:00 to 6:00 p.m.) on Tuesday, April 12, 2016.

Peak period intersection turning movement count data for intersections 16 through 23 was obtained from the North Natomas Freeway Monitoring Program. These counts were conducted on Tuesday March 10, 2015 and Thursday April 2, 2015. Intersection traffic count data is shown in Exhibit 5.11-5.

Roadway Segments

Where available, daily (24-hour) weekday traffic counts were obtained for study area roadways from the Sacramento County Department of Transportation Traffic Volume Flow Map and from City of Sacramento records. Additional counts were collected at sixteen locations on Tuesday, April 12, 2016, and at one location on Tuesday, January 31, 2017.

Freeway Peak Hour Volumes and Speeds

Freeway mainline volume data was obtained from the California Department of Transportation (Caltrans) Performance Measurement System (PeMS). Because I-80 was under construction during the data collection phase of this transportation analysis, affecting both traffic volumes and travel speeds, data for I-80 was gathered for the first three weeks of May 2011, the most recent non-summer period unaffected by construction. Data for SR 99 and I-5 was gathered for the first three weeks of May 2016.

Freeway Ramp Termini Queuing

Vehicle queuing data was obtained from the North Natomas Freeway Monitoring Program. These observations were made on Tuesday March 10, 2015.

EXISTING TRAFFIC OPERATING CONDITIONS

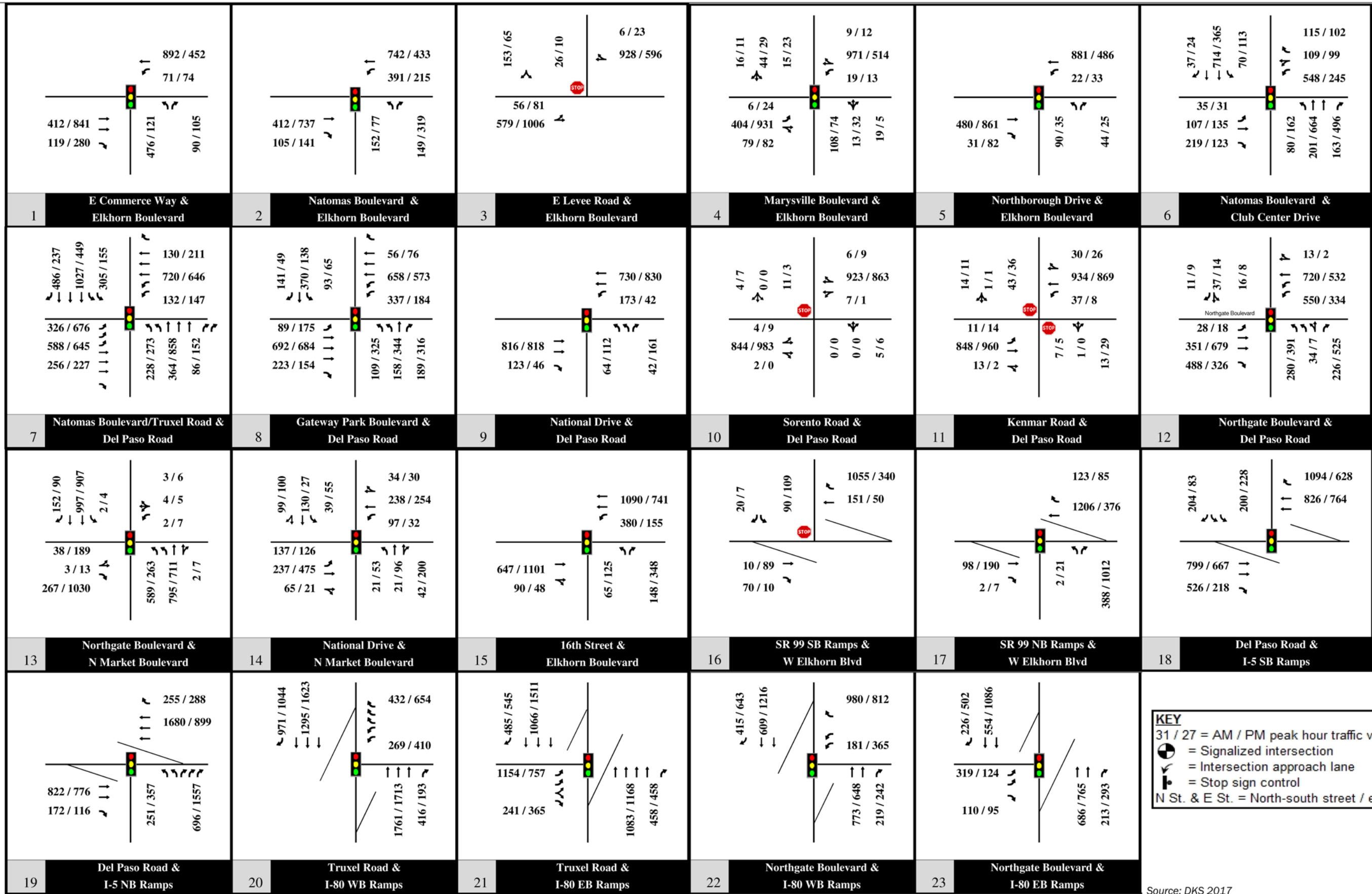
This section addresses the operation of key intersections, roadway segments, and freeway ramps in the traffic study area under existing conditions.

Analysis Methods

Field reconnaissance was undertaken to ascertain the traffic control characteristics of each of the study area intersections and roadway segments. Determination of roadway operating conditions is based upon comparison of known or projected traffic volumes during peak hours to roadway capacity. The quality of roadway facility operations is measured by the “level of service” (LOS) metric. LOS is a qualitative description of traffic flow based on such factors as speed, travel time, delay, and freedom to maneuver. Six levels are defined, with LOS A representing the best operating conditions (minimal vehicular congestion) and LOS F representing the worst operating conditions (substantial vehicular congestion). LOS E represents “at-capacity” operations. When traffic volumes exceed capacity, stop-and-go conditions result and operations are designated as LOS F.

As outlined in the *Regulatory Setting* below, Caltrans, the City of Sacramento, and Sacramento County have different LOS goals for facilities. In general, the most conservative (best LOS) policy has been applied in the analysis. The following summarizes the LOS standards used in this analysis:

- ▲ Intersections
 - LOS D
 - Intersections 1, 2, 5 through 8, 10, 13, and 16 through 23.
 - LOS D (with project) / LOS E (without project)
 - Intersections 3 and 9.



KEY
 31 / 27 = AM / PM peak hour traffic volume
 = Signalized intersection
 = Intersection approach lane
 = Stop sign control
 N St. & E St. = North-south street / east-west street

Source: DKS 2017

X16010111 01 013

Exhibit 5.11-5

Existing Volumes and Geometry



Table 5.11-2 Level of Service Threshold for Roadway Segments

Operational Class	Number of Lanes	ADT Level-of-Service Capacity Threshold				
		A	B	C	D	E
Arterial - Low Access Control	2	9,000	10,500	12,000	13,500	15,000
	4	18,000	21,000	24,000	27,000	30,000
	6	27,000	31,500	36,000	40,500	45,000
Arterial - Moderate Access Control	2	10,800	12,600	14,400	16,200	18,000
	4	21,600	25,200	28,800	32,400	36,000
	6	32,400	37,800	43,200	48,600	54,000
Arterial - High Access Control	2	12,000	14,000	16,000	18,000	20,000
	4	24,000	28,000	32,000	36,000	40,000
	6	36,000	43,000	48,000	54,000	60,000
Collector Street - Minor	2	5,250	6,125	7,000	7,875	8,750
Collector Street - Major	2	8,400	9,800	11,200	12,600	14,000
	4	16,800	19,600	22,400	25,200	28,000
Local Street	2	3,000	3,500	4,000	4,500	5,000
Facility Type	Stops / Mile		Driveways		Speed	
Arterial - Low Access Control	4 +		Frequent		25 - 35 mph	
Arterial - Moderate Access Control	2 - 4		Limited		35 - 45 mph	
Arterial - High Access Control	1 - 2		None		45 - 55 mph	

Source: City of Sacramento Draft Master EIR for 2035 General Plan Update, 2014

Freeway Facilities

Freeway mainline segments were analyzed utilizing methodologies outlined in the HCM 2010. Table 5.11-3 presents the LOS criteria for the freeway mainline segments.

Table 5.11-3 Level of Service Thresholds for Freeway Operations

Level of Service (LOS)	Maximum Density (Passenger Cars Per Mile Per Lane)
	Mainline
A	≤ 11
B	> 11 and ≤ 18
C	> 18 and ≤ 26
D	> 26 and ≤ 35
E	> 35 and ≤ 45
F	> 45

Source: TRB 2010

Existing Intersection Level of Service

Table 5.11-4 summarizes the existing a.m. and p.m. peak hour operating conditions at the study area intersections. At unsignalized intersections with City jurisdiction, the average intersection LOS is compared to the City's LOS criteria. All the study area intersections meet the LOS standards described in Section 5.11.2, "Regulatory Setting."

Table 5.11-4 Existing Intersection Operating Conditions

Intersection	Jurisdiction	LOS Criteria	Traffic Control	AM Peak Hour		PM Peak Hour	
				LOS	Delay (Seconds)	LOS	Delay (Seconds)
1. East Commerce Way / Elkhorn Boulevard	City of Sacramento	D	Signalized	C	23.7	A	8.8
2. Natomas Boulevard / Elkhorn Boulevard	City of Sacramento	D	Signalized	B	17.9	C	31.5
3. E. Levee Road/Elkhorn Boulevard	Sacramento County	E	Unsignalized	A	7.3	A	1.6
4. Marysville Boulevard / Elkhorn Boulevard	Sacramento County	E	Signalized	C	33.1	D	37.3
5. Northborough Drive / Elkhorn Boulevard	City of Sacramento	D	Signalized	B	19.2	B	18.6
6. Natomas Boulevard/Club Center Drive	City of Sacramento	D	Signalized	C	33.3	D	40.5
7. Natomas Boulevard / Truxel Road / Del Paso Road	City of Sacramento	D	Signalized	D	42.0	D	48.6
8. Gateway Park Boulevard / Del Paso Road	City of Sacramento	D	Signalized	D	38.0	D	39.0
9. National Drive / Del Paso Road	Sacramento County	E	Signalized	C	33.7	B	13.8
10. Sorento Road / Del Paso Road	City of Sacramento	D	Unsignalized	A	0.4	A	0.3
11. Kenmar Road / Del Paso Road	Sacramento County	E	Unsignalized	A	2.9	A	1.9
12. Northgate Boulevard / Del Paso Road	Sacramento County	E	Signalized	C	24.0	C	20.1
13. Northgate Boulevard / North Market Boulevard	City of Sacramento	D	Signalized	B	14.9	C	21.1
14. National Drive / North Market Boulevard	Sacramento County	E	Signalized	C	26.0	C	24.0
15. 16th Street / Elkhorn Boulevard	Sacramento County	E	Signalized	C	30.7	C	27.7
16. Elkhorn Boulevard / SR 99 Southbound Ramps	City of Sacramento	D	Unsignalized	A	4.0	A	4.4
17. Elkhorn Boulevard / SR 99 Northbound Ramps	City of Sacramento	D	Signalized	B	16.5	A	4.6
18. Del Paso Road / I-5 Southbound Ramps	City of Sacramento	D	Signalized	A	4.2	A	4.4
19. Del Paso Road / I-5 Northbound Ramps	City of Sacramento	D	Signalized	B	14.0	C	21.7
20. Truxel Road / I-80 Westbound Ramps	City of Sacramento	D	Signalized	A	8.0	B	10.1
21. Truxel Road / I-80 Eastbound Ramps	City of Sacramento	D	Signalized	B	12.7	B	10.9
22. Northgate Boulevard / I-80 Westbound Ramps	City of Sacramento	D	Signalized	A	5.8	A	8.6
23. Northgate Boulevard / I-80 Eastbound Ramps	City of Sacramento	D	Signalized	A	7.4	A	4.5

Source: Data provided by DKS in 2017

Existing Roadway Segment Level of Service

Table 5.11-5 summarizes the existing daily volumes and LOS on the study area roadway segments.

Table 5.11-5 Existing Roadway Segment Conditions

Roadway	Segment	Operational Class	Lanes	Daily Volume	Volume-to-Capacity Ratio	LOS
Elkhorn Boulevard	SR 99 to East Commerce Way	Arterial - Moderate Access Control	2	18,700	1.04	F
	East Commerce Way to Northborough Drive		2	17,300	0.96	E
	Northborough Drive to Natomas Boulevard		2	16,200	0.90	D
	Natomas Boulevard to Sageview Drive		2	19,000	1.06	F
	Sageview Drive to E. Levee Road		2	17,100	0.95	E

Table 5.11-5 Existing Roadway Segment Conditions

Roadway	Segment	Operational Class	Lanes	Daily Volume	Volume-to-Capacity Ratio	LOS
Natomas Boulevard	E. Levee Road to Marysville Boulevard	Arterial - Moderate Access Control	2	17,500	0.97	E
	North Bend Drive to Club Center Drive		4	26,700	0.74	C
	Club Center Drive to Elkhorn Boulevard		4	13,000	0.36	A
Del Paso Road	Truxel Road to Gateway Park Boulevard		6	21,300	0.39	A
	Gateway Park Boulevard to Black Rock Drive		6	22,400	0.41	A
	Black Rock Drive to National Drive		4	20,800	0.58	A
	National Drive to Northgate Boulevard		4	20,700	0.58	A
Northgate Boulevard	Del Paso Road to North Market Boulevard	Arterial - Moderate Access Control	4	23,500	0.65	B
	North Market Boulevard to I-80		6	36,000	0.67	B
Main Avenue	Northgate Boulevard to Norwood Avenue		4	19,700	0.55	A
Sageview Drive	Elkhorn Boulevard to Bridgecross Drive	Local Street	2	3,700	0.74	C
Bridgecross Drive	East of Honor Parkway	Minor Collector	2	2,800	0.32	A
Regency Park Circle	North of Club Center Drive	Local Street	2	5,300	1.06	F
Danbrook Drive	South of Club Center Drive		2	5,100	1.02	F
Sorento Road	North of Del Paso Road		2	340	0.07	A
Club Center Drive	Danbrook Drive to Danbrook Drive	Minor Collector	2	3,200	0.37	A

Source: Data provided by DKS in 2017

The following roadway segments (shown in bold in Table 5.11-5) do not meet the LOS standards detailed in the *Regulatory Setting* section:

- ▲ Elkhorn Boulevard – SR 99 to East Commerce Way
- ▲ Elkhorn Boulevard – East Commerce Way to Northborough Drive
- ▲ Elkhorn Boulevard – Natomas Boulevard to Sageview Drive
- ▲ Elkhorn Boulevard – Sageview Drive to East Levee Road
- ▲ Regency Park Circle – North of Club Center Drive
- ▲ Danbrook Drive – South of Club Center Drive

Existing Freeway Facilities Level of Service

Table 5.11-6 summarizes the existing peak hour freeway mainline LOS.

Table 5.11-6 Existing Peak Hour Freeway Mainline Level of Service

Direction	Location	Through Lanes	Aux. Lanes	Volume	Density ¹	LOS
AM Peak Hour						
Eastbound I-80	I-5 to Truxel Road	3	1	5,262	20.8	C
	Truxel Road to Northgate Boulevard	3	1	4,810	18.8	C
	Northgate Boulevard to Norwood Avenue	3	0	4,820	28.0	D
Westbound I-80	I-5 to Truxel Road	3	1	5,480	21.7	C
	Truxel Road to Northgate Boulevard	3	1	5,062	19.9	C
	Northgate Boulevard to Norwood Avenue	3	0	5,539	35.1	E

Table 5.11-6 Existing Peak Hour Freeway Mainline Level of Service

Direction	Location	Through Lanes	Aux. Lanes	Volume	Density ¹	LOS
Northbound I-5	Arena Boulevard to Del Paso Road	3	1	4,898	21.4	C
	Del Paso Road to SR 99	3	0	4,378	25.6	C
Southbound I-5	Arena Boulevard to Del Paso Road	3	1	5,212	25.9	C
	Del Paso Road to SR 99	4	0	4,001	17.0	B
Northbound SR 99	I-5 to Elkhorn Boulevard	2	0	1,169	9.3	A
	Elkhorn Boulevard to Elverta Road	2	0	904	7.2	A
Southbound SR 99	I-5 to Elkhorn Boulevard	2	0	3,305	29.0	D
	Elkhorn Boulevard to Elverta Road	2	0	2,266	18.8	C
PM Peak Hour						
Eastbound I-80	I-5 to Truxel Road	3	1	5,407	21.4	C
	Truxel Road to Northgate Boulevard	3	1	5,288	59.6	F
	Northgate Boulevard to Norwood Avenue	3	0	5,864	35.8	D
Westbound I-80	I-5 to Truxel Road	3	1	4,517	17.7	B
	Truxel Road to Northgate Boulevard	3	1	4,516	17.7	B
	Northgate Boulevard to Norwood Avenue	3	0	4,466	24.5	C
Northbound I-5	Arena Boulevard to Del Paso Road	3	1	6,286	27.4	D
	Del Paso Road to SR 99	3	0	4,776	30.9	D
Southbound I-5	Arena Boulevard to Del Paso Road	3	1	4,197	17.9	B
	Del Paso Road to SR 99	4	0	3,662	18.0	B
Northbound SR 99	I-5 to Elkhorn Boulevard	2	0	3,128	40.5	E
	Elkhorn Boulevard to Elverta Road	2	0	2,187	20.7	C
Southbound SR 99	I-5 to Elkhorn Boulevard	2	0	1,530	12.2	B
	Elkhorn Boulevard to Elverta Road	2	0	1,457	11.6	B

¹ Density (passenger car equivalents per lane-mile) from PeMS data or calculation (if higher). Peak hour density may occur at a later time than peak hour volume.

Source: Data provided by DKS in 2017

The study area freeway mainline segments operate at LOS E or better except for the segment of Eastbound I-80 from Truxel Road to Northgate Boulevard during the p.m. peak hour. This segment operated at LOS F because of the auxiliary lane drop at Northgate Boulevard, as well as the slight mainline uphill grade and the short distance and short acceleration lanes between consecutive on-ramps.

Table 5.11-7 summarizes the existing peak hour freeway ramp queuing. The maximum existing observed queues do not exceed the available storage at any of the study locations.

Table 5.11-7 Existing Peak Hour Freeway Ramp Termini Queuing

Direction	Location	Available Storage Length (feet/lane)	Maximum Queue Length (feet/lane)	
			AM Peak Hour	PM Peak Hour
I-80 Eastbound	Truxel Road	810	254	217
	Northgate Boulevard	700	221	362
I-80 Westbound	Truxel Road	1,075	137	169
	Northgate Boulevard	680	64	217
I-5 Northbound	Del Paso Road	690	232	264
I-5 Southbound	Del Paso Road	595	108	197
SR 99 Northbound	Elkhorn Boulevard	915	75	520
SR 99 Southbound	Elkhorn Boulevard	900	73	87

Source: Data provided by DKS in 2017

5.11.2 Regulatory Setting

A list of the applicable federal, state, and local plans, policies, regulations, laws, and ordinances is provided below.

FEDERAL

There are no federal plans, policies, regulations, or laws related to transportation and circulation that would affect the project.

STATE

Caltrans is responsible for planning, designing, constructing, operating, and maintaining all State-owned roadways in Sacramento County. Federal highway standards are implemented in California by Caltrans. Any improvements or modifications to the State highway system within the City or County of Sacramento need to be approved by Caltrans.

Within the project study area, I-5, I-80, and SR 99 freeway systems are under the jurisdiction of Caltrans. In the Caltrans' Corridor System Management Plans for these facilities, the 20-year concept LOS is "F," because improvements necessary to improve the LOS to E are not feasible because of environmental, right-of-way, financial, and other constraints.

REGIONAL

The Sacramento Area Council of Governments (SACOG) is responsible for the preparation of, and updates to, the Metropolitan Transportation Plan (MTP) / Sustainable Communities Strategy (SCS) 2036 (SACOG 2016) and the corresponding Metropolitan Transportation Improvement Program (MTIP) for the six-county Sacramento region. The MTP/SCS provides a 20-year transportation vision and corresponding list of projects. The MTIP identifies short-term projects (7-year horizon) in more detail. The updated MTP/SCS 2036 was adopted by the SACOG board in February 2016.

LOCAL

The study area roadway system is under the jurisdiction of the City of Sacramento and Sacramento County.

City of Sacramento 2035 General Plan

The Mobility Element of the *Sacramento 2035 General Plan* outlines goals and policies that coordinate the transportation and circulation system with planned land uses. The following policies are relevant to this project.

- ▲ Policy M 1.1.1 Right-of-Ways. The City shall preserve and manage rights-of-way consistent with: the circulation diagram, the City Street Design Standards, the goal to provide Complete Streets as described in Goal M 4.2, and the modal priorities for each street segment and intersection established in Policy M4.4.1: Roadway Network Development, Street Typology System.
- ▲ Policy M 1.1.2 Transportation System. The City shall manage the travel system to ensure safe operating conditions.
- ▲ Policy M 1.1.4 Facilities and Infrastructure. The City shall effectively operate and maintain transportation facilities and infrastructure to preserve the quality of the system.
- ▲ Policy M 1.2.1 Multimodal Choices. The City shall develop an integrated, multimodal transportation system that improves the attractiveness of walking, bicycling, and riding transit over time to increase travel choices and aid in achieving a more balanced transportation system and reducing air pollution and greenhouse gas emissions.
- ▲ Policy M 1.2.2 Level of Service (LOS) Standard. The City shall implement a flexible context sensitive Level of Service (LOS) standard, and will measure traffic operations against the vehicle LOS thresholds established in this policy. The City will measure Vehicle LOS based on the methodology contained in the latest version of the Highway Capacity Manual (HCM) published by the Transportation Research Board. The City's specific vehicle LOS thresholds have been defined based on community values with respect to modal priorities, land use context, economic development, and environmental resources and constraints. As such, the City has established variable LOS thresholds appropriate for the unique characteristics of the City's diverse neighborhoods and communities. The City will strive to operate the roadway network at LOS D or better for vehicles during typical weekday conditions, including AM and PM peak hour with the following exceptions described below and mapped on Figure M-1 (items A, C, and D are not applicable to the project):
 - B. Priority Investment Areas – LOS F allowed
 - E. If maintaining the above LOS standards would, in the City's judgment be infeasible and/or conflict with the achievement of other goals, LOS E or F conditions may be accepted provided that provisions are made to improve the overall system, promote non-vehicular transportation, and/or implement vehicle trip reduction measures as part of a development project or a city-initiated project. Additionally, the City shall not expand the physical capacity of the planned roadway network to accommodate a project beyond that identified in Figure M4 and M4a (2035 General Plan Roadway Classification and Lanes).
- ▲ Policy M 1.2.3 Transportation Evaluation. The City shall evaluate discretionary projects for potential impacts to traffic operations, traffic safety, transit service, bicycle facilities, and pedestrian facilities, consistent with the City's Traffic Study Guidelines.
- ▲ Policy M 1.2.4 Multimodal Access. The City shall facilitate the provision of multimodal access to activity centers such as commercial centers and corridors, employment centers, transit stops/stations, airports, schools, parks, recreation areas, medical centers, and tourist attractions.

- ▲ Policy M 1.3.1 Grid Network. To promote efficient travel for all modes, the City shall require all new residential, commercial, or mixed-use development that proposes or is required to construct or extend streets to develop a transportation network that is well-connected, both internally and to off-site networks preferably with a grid or modified gridform.

The City shall require private developments to provide internal complete streets (see Goal M.4.2) that connect to the existing roadway system.

- ▲ Policy M 1.3.2 Eliminate Gaps. The City shall eliminate “gaps” in roadways, bikeways, and pedestrian networks. To this end:
 - C. The City shall construct new bikeways and pedestrian paths in existing neighborhoods to improve connectivity.
- ▲ Policy M 1.3.3 Improve Transit Access. The City shall support the Sacramento Regional Transit District (RT) in addressing identified gaps in public transit networks by working with RT to appropriately locate passenger facilities and stations, pedestrian walkways and bicycle access to transit stations and stops, and public rights of way as necessary for transit- only lanes, transit stops, and transit vehicle stations and layover.
- ▲ Policy M 1.3.4 Barrier Removal for Accessibility. The City shall remove barriers, where feasible, to allow people of all abilities to move freely and efficiently throughout the city.
- ▲ Policy M 1.4.1 Increase Vehicle Occupancy. The City shall work with a broad range of agencies (e.g., SACOG, SMAQMD, Sacramento RT, Caltrans) to encourage and support programs that increase regional average vehicle occupancy, including the provision of traveler information, shuttles, preferential parking for carpools/vanpools, transit pass subsidies, road and parking pricing, and other methods.
- ▲ Policy M 1.4.2 Automobile Commute Trip Reduction. The City shall encourage employers to reduce the number of single-occupant vehicle commute trips to their sites by enforcing the existing trip reduction ordinance in the City Code.
- ▲ Policy M 1.4.3 Transportation Management Associations. The City shall encourage commercial, retail, and residential developments to participate in or create Transportation Management Associations to reduce single-occupant vehicle trips.
- ▲ Policy M 1.4.4 Off-Peak Deliveries. The City shall encourage business owners to schedule deliveries at off-peak traffic periods.
- ▲ Policy M 1.5.7 Freeway Improvement Coordination. The City shall work with Caltrans and adjacent jurisdictions to identify funding for improvements that address cumulative effects of planned development on the freeway system.
- ▲ Policy M 2.1.1 Pedestrian Master Plan. The City shall maintain and implement a Pedestrian Master Plan that carries out the goals and policies of the General Plan. All new development shall be consistent with the applicable provisions of the Pedestrian Master Plan.
- ▲ Policy M 2.1.2 Sidewalk Design. The City shall require that sidewalks wherever possible be developed at sufficient width to accommodate all users including persons with disabilities and complement the form and function of both the current and planned land use context of each street segment (i.e. necessary buffers, amenities, outdoor seating space).
- ▲ Policy M 2.1.3 Streetscape Design. The City shall require that pedestrian-oriented streets be designed to provide a pleasant environment for walking and other desirable uses of public space, including such elements as shade trees; plantings; well-designed benches, trash receptacles, news racks, and other

furniture; pedestrian-scaled lighting fixtures; wayfinding signage; integrated transit shelters; public art; and other amenities.

- ▲ Policy M 2.1.4 Cohesive and Continuous Network. The City shall develop a pedestrian network of public sidewalks, street crossings, and other pedestrian paths that makes walking a convenient and safe way to travel citywide. The network should include a dense pattern of routes in pedestrian-oriented areas such as the Central City and include wayfinding where appropriate.
- ▲ Policy M 2.1.5 Housing and Destination Connections. The City shall require new subdivisions and large-scale developments to include safe pedestrian walkways that provide direct links between streets and major destinations such as transit stops and stations, schools, parks, and shopping centers.
- ▲ Policy M 2.1.7 Safe Pedestrian Crossings. The City shall improve pedestrian safety at appropriate intersections and mid-block locations by providing safe pedestrian crossings.
- ▲ Policy M 2.1.9 Safe Sidewalks. The City shall require pedestrian facilities to be constructed in compliance with adopted design standards.
- ▲ Policy M 3.1.1 Transit for All. The City shall support a well-designed transit system that provides accessibility and mobility for all Sacramento residents, workers and visitors. The City shall enhance bicycle and pedestrian access to stations.
- ▲ Policy M 3.1.12 New Facilities. The City shall work with transit providers and private developers to incorporate transit facilities into new private development and City project designs including incorporation of transit infrastructure (i.e., electricity, fiber-optic cable, etc.), alignments for transit route extensions, new station locations, bus stops, and transit patron waiting area amenities (i.e. benches, real-time traveler information screens).
- ▲ Policy M 3.1.18 Developer Contributions. Consistent with the City's established transportation impact analysis and mitigation guidelines, the City shall require developer contributions for bus facilities and services and related improvements.
- ▲ Policy M 4.1.1 Emergency Access. The City shall develop a roadway system that is redundant (i.e., includes multiple alternative routes) to the extent feasible to ensure mobility in the event of emergencies.
- ▲ Policy M 4.1.2 Balancing Community, Social, Environmental, and Economic Goals. The City shall evaluate and strive to address community, environmental, and citywide economic development goals when adding or modifying streets, roads, bridges, and other public rights-of-way.
- ▲ Policy M 4.1.6 Roundabouts. Where feasible, the City shall consider roundabouts as an intersection traffic control option with demonstrated air quality, safety, and mobility benefits.
- ▲ Policy M 4.2.1 Accommodate All Users. The City shall ensure that all new roadway projects and any reconstruction projects designate sufficient travel space for all users including bicyclists, pedestrians, transit riders, and motorists except where pedestrians and bicyclists are prohibited by law from using a given facility.
- ▲ Policy M 4.2.2 Pedestrian and Bicycle-Friendly Streets. In areas with high levels of pedestrian activity (e.g., employment centers, residential areas, mixed-use areas, schools), the City shall ensure that all street projects support pedestrian and bicycle travel. Improvements may include narrow lanes, target speeds less than 35 miles per hour, sidewalk widths consistent with the Pedestrian Master Plan, street trees, high-visibility pedestrian crossings, and bikeways (e.g. Class II and Class III bike lanes, bicycle boulevards, separated bicycle lanes and/or parallel multi-use pathways).

- ▲ Policy M 4.3.1 Neighborhood Traffic Management. The City shall continue wherever possible to design streets and approve development applications in a manner as to reduce high traffic flows and parking problems within residential neighborhoods.
- ▲ Policy M 4.3.2 Traffic Calming Measures. Consistent with the Roadway Network and Street Typology policies in this General Plan and Goal M 4.3, the City shall use traffic calming measures to reduce vehicle speeds and volumes while also encouraging walking and bicycling.
- ▲ Policy M 4.4.1 Roadway Network Development. The City shall develop the roadway network depicted in the Circulation Diagram is shown in (General Plan) Figures M4 and M4a. The lanes shown in these figures represent the number expected to be constructed by 2035 based on current funding projections.
- ▲ Policy M 5.1.1 Bicycle Master Plan. The City shall maintain and implement a Bicycle Master Plan that carries out the goals and policies of the General Plan. All new development shall be consistent with the applicable provisions of the Bicycle Master Plan.
- ▲ Policy M 5.1.2 Appropriate Bikeway Facilities. The City shall provide bikeway facilities that are appropriate to the street classifications and type, number of lanes, traffic volume, and speed on all rights-of-way.
- ▲ Policy M 5.1.3 Continuous Bikeway Network. The City shall provide a continuous bikeway network consisting of bike-friendly facilities connecting residential neighborhoods with key destinations and activity centers (e.g., transit facilities, shopping areas, education institutions, employment centers).
- ▲ Policy M 5.1.4 Conformance to Applicable Standards. The City shall require all bikeways to conform to applicable Federal, State, and City standards while considering a full range of innovative bikeway design best practices.
- ▲ Policy M 5.1.5 Motorists, Bicyclists, and Pedestrian Conflicts. The City shall develop safe and convenient bikeways, streets, roadways, and intersections that reduce conflicts between bicyclists and motor vehicles on streets, between bicyclists and pedestrians on multi-use trails and sidewalks, and between all users at intersections.
- ▲ Policy M 5.1.6 Connections between New Development and Bicycle Facilities. The City shall require that new development provides connections to and does not interfere with existing and proposed bicycle facilities.
- ▲ Policy M 5.1.7 Bikeway Requirements. The City shall provide bike lanes on all repaved and/or reconstructed arterial and collector streets to the maximum extent feasible. The appropriate facility type for each roadway segment shall be consistent with the Roadway Network and Street Typologies defined in this General Plan.
- ▲ Policy M 5.1.8 Connections between New Development and Bikeways. The City shall ensure that new commercial and residential development projects construct bikeway facilities identified in the Bicycle Master Plan that have a direct nexus with the project.
- ▲ Policy M 5.1.11 Bike Facilities in New Developments. The City shall require that major new development projects (e.g., employment centers, educational institutions, recreational and retail destinations, and commercial centers) provide bicycle parking (i.e., short-term bicycle parking for visitors and long-term bicycle parking for residents or employees), personal lockers, showers, and other bicycle-support facilities.
- ▲ Policy M 5.1.14 Encourage Bicycle Use. The City shall encourage bicycle use in all neighborhoods, especially where short trips are most common.

- ▲ Policy M 9.1.1 New Development. The City shall require new development to contribute towards the construction of offsite facilities and provision of services to achieve the City’s mobility goals.
- ▲ Policy M 9.1.5 Fair Share for Transportation Infrastructure Improvements. The City shall require all new development to dedicate right-of-way, construct facilities, or pay its fair share for needed transportation infrastructure improvements that support all travel modes, including pedestrian, bicycle, and transit facilities, roadway improvements, and transportation demand management (TDM) programs and services.

City of Sacramento 2016 Bicycle Master Plan

The purpose of the *Sacramento City Bicycle Master Plan* is to set forth bicycle related investments, policies, programs, and strategies to establish a complete bicycle system. The Bicycle Master Plan designates new on-street bike facilities through the project area that would connect the existing residential areas west of the project area and establish a new off-street bike facility along the powerline corridor within the project (designated as a “Focus Area”).

City of Sacramento 2016 Pedestrian Master Plan

The Pedestrian Master Plan provides a comprehensive vision for improving pedestrian conditions. It provides a comprehensive vision for improving pedestrian conditions, establishes strategies to achieve this vision, and includes a framework for creating an improved pedestrian environment. The Pedestrian Master Plan designates a new off-street trail through the project along the powerline corridor.

Sacramento County General Plan

The *Sacramento County General Plan of 2005 – 2030, Amended November 9, 2011, Circulation Element* provides goals, policies, and implementation measures to provide greater mobility through a balanced transportation system. The following policy applies to the transportation analysis of facilities in the unincorporated County:

- ▲ Policy CI-9. Plan and design the roadway system in a manner that meets Level of Service (LOS) D on rural roadways and LOS E on urban roadways, unless it is infeasible to implement project alternatives or mitigation measures that would achieve LOS D on rural roadways or LOS E on urban roadways. The urban areas are those areas within the Urban Service Boundary as shown in the Land Use Element of the Sacramento County General Plan. The areas outside the Urban Service Boundary are considered rural.

5.11.3 Impacts and Mitigation Measures

SIGNIFICANCE CRITERIA

Consistent with Appendix G of the CEQA Guidelines, thresholds of significance adopted by the governing jurisdictions in the applicable general plans and previous environmental documents, and professional judgement, a significant impact would occur if the proposed project would exceed the criteria listed below.

Construction-Related Traffic Impacts

The project would have a temporarily significant impact during construction if it would:

- ▲ degrade an intersection or roadway operating conditions to an unacceptable LOS,
- ▲ cause inconveniences to motorists because of prolonged road closures, or
- ▲ result in increased frequency of potential conflicts between vehicles, pedestrians, and bicyclists.

Intersections

City of Sacramento

In the City of Sacramento, a significant traffic impact occurs when:

- ▲ The traffic generated by the project degrades LOS from an acceptable LOS (without the project) to an unacceptable LOS (with the project).
- ▲ The LOS (without project) is unacceptable and project generated traffic increases the average vehicle delay by 5 seconds or more.

The City of Sacramento General Plan Mobility Element Policy M 1.2.2 sets forth definitions for what is considered an acceptable LOS. As previously discussed, Policy M 1.2.2 applies to the study area roadway facilities as follows:

- ▲ LOS A-D is to be maintained at all times; provided, LOS E or F may be acceptable if improvements are made to the overall transportation system and/or non-vehicular transportation and transit are promoted as part of the project or a City-initiated project.

Sacramento County

In the County of Sacramento, a significant traffic impact occurs when:

- ▲ The traffic generated by the project degrades LOS from an acceptable LOS (without the project) to an unacceptable LOS (with the project).
- ▲ The LOS (without project) is unacceptable and project generated traffic increases the average vehicle delay by more than 5 seconds.

As all of the study area intersections within County jurisdiction are located with the Urban Service Boundary. Thus, LOS E applies.

Roadway Segments

City of Sacramento

In the City of Sacramento, a significant traffic impact occurs when:

- ▲ The traffic generated by the project degrades LOS from an acceptable LOS (without the project) to an unacceptable LOS (with the project).
- ▲ The LOS (without project) is unacceptable and project generated traffic increases the volume-to-capacity ratio by 0.02 or more.

The General Plan Mobility Element Policy M 1.2.2 sets forth definitions for what is considered an acceptable LOS. As previously discussed, Policy M 1.2.2 applies to the study area roadway facilities as follows:

- ▲ LOS A-D is to be maintained during peak periods; provided, LOS E or F may be acceptable if improvements are made to the overall transportation system and/or non-vehicular transportation and transit are promoted as part of the project or a City-initiated project.

Sacramento County

In the County of Sacramento, a significant traffic impact occurs when:

- ▲ The traffic generated by the project degrades LOS from an acceptable LOS (without the project) to an unacceptable LOS (with the project).

- ▲ The LOS (without project) is unacceptable and project generated traffic increases the volume-to-capacity ratio by more than 0.05.

As all of the study area roadway segments within County jurisdiction are located with the Urban Service Boundary, LOS E is the worst acceptable operating condition.

Freeway Facilities

Caltrans considers the following to be significant impacts:

- ▲ Off-ramps with vehicle queues that extend into the ramp's deceleration area or onto the freeway.
- ▲ Project traffic increases that cause any ramp's merge/diverge LOS to be worse than the freeway's LOS.
- ▲ Project traffic increases that cause the freeway LOS to deteriorate beyond LOS threshold defined in the Caltrans Route Concept Report for the facility (LOS F).
- ▲ The expected ramp queue is greater than the storage capacity.

Bicycle Facilities

Impacts to bicycle facilities are considered significant if the project would:

- ▲ Adversely affect existing or planned bicycle facilities.
- ▲ Fail to adequately provide for access by bicycle.

Pedestrian Circulation

Impacts to pedestrian circulation are considered significant if the project would:

- ▲ Adversely affect existing or planned pedestrian facilities.
- ▲ Fail to adequately provide for access by pedestrians.

Transit

Impacts to the transit system are considered significant if the project would:

- ▲ Adversely affect public transit operations.
- ▲ Fail to adequately provide access to transit.

Transportation Hazards

Transportation hazards are considered significant if the project would:

- ▲ Substantially increase hazards because of a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).

Emergency Access

Impacts to emergency access are considered significant if the project would:

- ▲ Result in inadequate emergency access.

METHODS AND ASSUMPTIONS

This section describes the analysis techniques, assumptions, and results used to identify potential impacts of the project on the transportation and circulation system.

Project Area Access and Circulation

Exhibit 5.11-6 illustrates the project roadway system². All the roadways on the project area are assumed to be two-lane streets with varying cross-sections dependent upon their designations. The following are selected elements of the street system:

- ▲ National Drive extends north from Del Paso Road, curving easterly to a terminus at a roundabout.
- ▲ Club Center Drive extends east from the project's western boundary, then curves to the south to Del Paso Road.
- ▲ Street "G" extends northerly from Club Center Drive to Elkhorn Boulevard.
- ▲ Additional local roadway connections to the west via street extensions at Mayfield Street, Aimwell Avenue, Cadman Court (neighborhood access), Faletto Avenue, Domino Avenue, and Sandmark Drive. No connection is assumed at Amazon Avenue.
- ▲ Connections to Sorento Road via Street "F" and Barros Drive. No additional access is assumed to the project from Sorento Road.
- ▲ As the project does not show circulation elements for the Krumenacher Ranch site north the of the High School / Middle School site (no development entitlements for this site are proposed as part of this project), a conceptual circulation plan was assumed, including a second connection to Elkhorn Boulevard (Street "K"). The plan also assumes the extension of Sandmark Drive and Domino Avenue to Street "G."

Exhibit 5.11-7 presents the proposed bikeway plan of the project. The plan includes the following elements:

- ▲ A continuous Class I bikeway along the powerline corridor from Del Paso Road to Elkhorn Boulevard.
- ▲ On-street bikeways (Class II) along Elkhorn Boulevard, Del Paso Road, National Drive, Club Center Drive, and Street "A," Street "B," and Street "G."
- ▲ Class III bikeways on the other streets.

Exhibit 5.11-3 illustrates the connections of the proposed project bikeway system to the regional (City and County) bikeway system.

Land Uses

Table 5.11-8 summarizes the proposed development assumed for transportation analysis. To provide a conservative analysis, the number of dwelling units was increased by 10 percent for Villages 1 through 14. This traffic analysis also assumes that the Krumenacher Ranch site is developed with single-family dwelling units.

² Since completion of the Transportation Analysis Section 4.10, Panhandle Annexation prepared by DKS Associates, there have been modifications to the proposed Panhandle PUD site plan and roadway system design. The exhibits in this section do not reflect the current site plan. The modified site plan still includes the same roadway connections and total development potential. The City and DKS Associates have determined the traffic analysis still accurately evaluates the transportation impacts of the project and no modifications to the traffic analysis is required.



Source: DKS 2017

X16010111 01 014

Exhibit 5.11-6

Site Circulation Plan





LEGEND

-  Class 1 Bike Trail (off-street)
-  Class 2 Bike Route (on-street)
- Class 3 Bike Route - (all other streets)



Source: DKS 2017

X1610111 01 015

Exhibit 5.11-7

Site Bikeway Plan



Table 5.11-8 Summary of Project Travel Modeling Land Use Assumptions

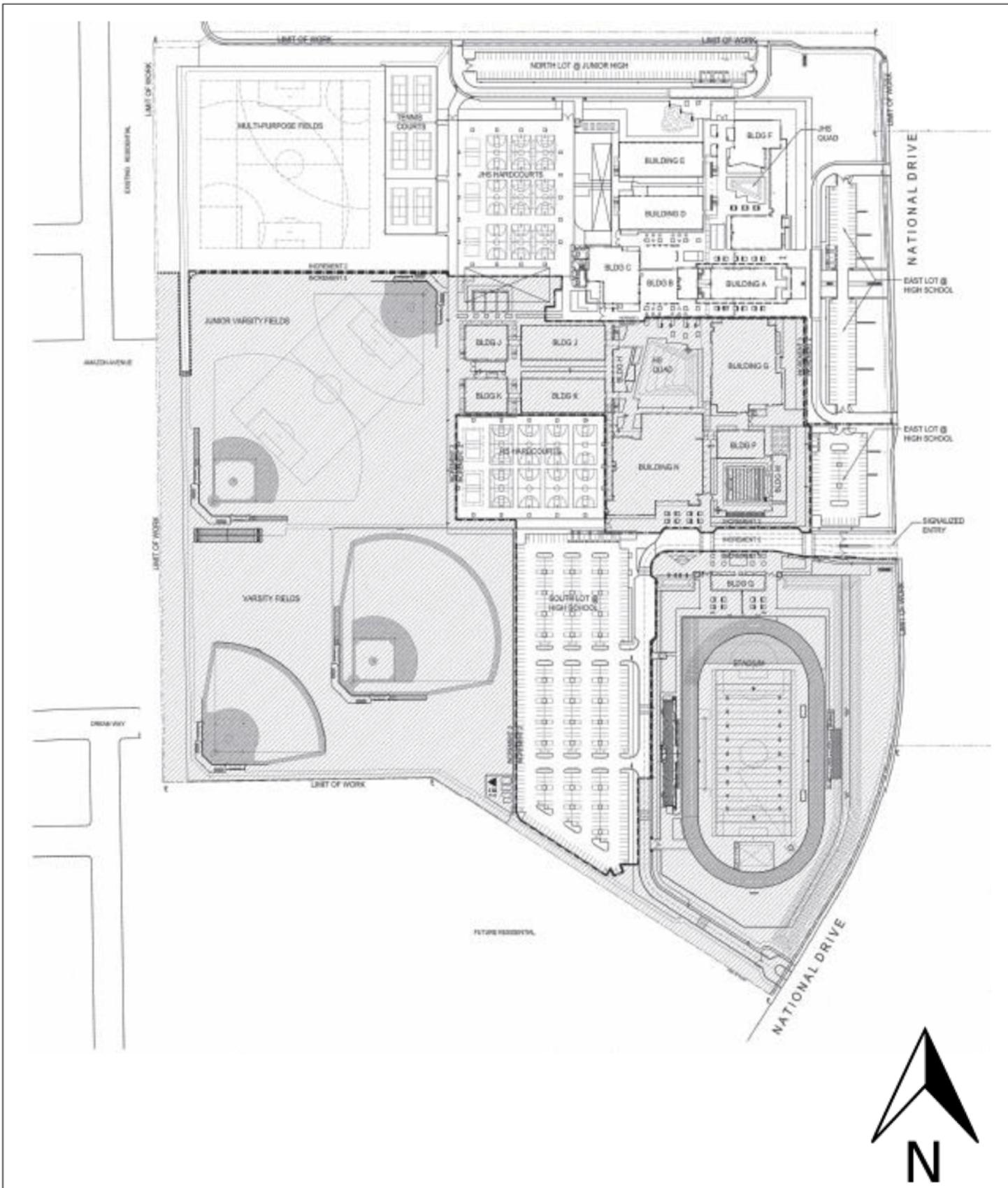
Land Use	Dwelling Units (Actual)	Dwelling Units (+10%)	Square Feet	Students
Elementary School				500
Middle School / High School				2,800
Suburban Center			101,277	
Village 1	124	136		
Village 2	126	138		
Village 3	190	209		
Village 4	162	178		
Village 5	94	103		
Village 6	59	64		
Village 7	183	201		
Village 8	91	100		
Village 9	157	172		
Village 10	102	112		
Village 11	98	107		
Village 12	67	73		
Village 13	73	80		
Village 14	130	143		
Subtotal	1,656	1,816	101,277	3,300
Krumenacher Ranch site west of National Drive	652	652		
Krumenacher Ranch site east of powerlines	192	192		
Total	2,500	2,660	101,277	3,300

Source: data provided by DKS in 2017

Exhibit 5.11-8 illustrates the East Natomas Education Complex Plan. Partial construction of the campus was completed before the recession. Completion of the project is assumed as part of the project. The Panhandle Annexation project assumes the extension of Faletto Avenue to Street “G” across the edge of the school property. This extension was not part of the original school plan.

The following are the key transportation elements of the school plan:

- ▲ Vehicular access to Street “G” at three locations:
 - A signalized main entry.
 - Two intersections serving a one-way roadway system serving East Lot.
- ▲ South lot access via Faletto Drive.
- ▲ A major pedestrian access point to the school is assumed along Street “G” in the center of the East Lot.
- ▲ Access to North lot via the Krumenacher Ranch site.
- ▲ No connection is assumed at Amazon Avenue.



Source: DKS 2017

X16010111 01 017

Exhibit 5.11-8

East Natomas Education Complex Site Plan



Project Trip Generation

The project trip generation was estimated directly by SACOG's SACSIM travel model. The trip generation is based directly on household travel information collected in the Sacramento region, and reflects the location, mode choice, and demographics associated with the area. For the new development in the project area, land use characteristics are assumed to be similar to nearby existing development, such as the area of North Natomas immediately to the west of the project area.

Tables 5.11-9 through 5.11-11 summarize mode choice for the person trips generated by the residential, school, and commercial elements of the project for the daily, a.m. peak hour, and p.m. peak hour.

Table 5.11-9 Percentage of Person Trips by Mode – Residential Development

Mode	Daily	A.M. Peak Hour	P.M. Peak Hour
Automobile – Single Occupant	43.7%	46.3%	46.0%
Automobile – Two Occupants	27.6%	22.5%	27.1%
Automobile – Three or More Occupants	19.7%	17.3%	19.4%
Transit	0.3%	0.5%	0.3%
Bicycle	0.9%	1.2%	1.1%
Walk	6.3%	9.3%	5.0%
School Bus	1.4%	2.9%	1.1%

Source: data provided by DKS in 2017

Table 5.11-10 Percentage of Person Trips by Mode – Schools

Mode	Daily	A.M. Peak Hour	P.M. Peak Hour
Automobile – Single Occupant	16.9%	11.2%	18.3%
Automobile – Two Occupants	29.9%	27.1%	33.8%
Automobile – Three or More Occupants	31.4%	32.5%	30.5%
Transit	0.4%	0.4%	0.2%
Bicycle	1.7%	2.2%	1.3%
Walk	10.8%	14.1%	8.3%
School Bus	8.9%	12.4%	7.5%

Source: data provided by DKS in 2017

Table 5.11-11 Percentage of Person Trips by Mode – Commercial Development

Mode	Daily	A.M. Peak Hour	P.M. Peak Hour
Automobile – Single Occupant	55.2%	64.1%	57.1%
Automobile – Two Occupants	24.3%	20.6%	21.8%
Automobile – Three or More Occupants	12.5%	9.1%	12.5%
Transit	0.3%	0.4%	0.3%
Bicycle	0.7%	0.6%	0.6%
Walk	6.9%	5.2%	7.7%
School Bus	0.0%	0.0%	0.0%

Source: data provided by DKS in 2017

Table 5.11-12 summarizes vehicular trip generation of the project. The project is expected to generate 27,627 daily vehicle trips. Of these trips, 1,907 are anticipated to remain internal to the project. 25,720 daily external vehicle trips are anticipated.

Table 5.11-12 Vehicular Trip Generation

Land Use	Vehicle Trip-Ends						
	Daily	A.M. Peak Hour			P.M. Peak Hour		
		Entering	Exiting	Total	Entering	Exiting	Total
Total Trip-Ends							
Residential Development	16,855	232	950	1,182	849	401	1,251
Schools	6,373	407	142	549	167	334	501
Commercial Development	4,399	185	90	275	129	199	328
Total	27,627	824	1,182	2,006	1,145	934	2,080
Internal Trip-Ends							
Residential Development	-978	-17	-67	-84	-18	-11	-29
Schools	-615	-43	-15	-57	-6	-9	-15
Commercial Development	-314	-24	-3	-27	-4	-8	-12
Total	-1,907	-84	-85	-168	-28	-28	-56
External Trip-Ends							
Residential Development	15,877	215	883	1,098	831	390	1,222
Schools	5,758	364	127	492	161	325	486
Commercial Development	4,085	161	87	248	125	191	316
Total	25,720	740	1,097	1,838	1,117	906	2,024
Source: data provided by DKS in 2017							

During the a.m. peak hour, the project is expected to generate 2,006 vehicle trips. Of these trips, 168 are anticipated to remain internal to the project. 1,838 external vehicle trips are anticipated during the a.m. peak hour.

During the p.m. peak hour, the project is expected to generate 2,080 vehicle trips. Of these trips, 56 are anticipated to remain internal to the project. 2,024 external vehicle trips are anticipated during the p.m. peak hour.

Table 5.11-13 summarizes vehicular trip generation of the project by residential village / development component.

Table 5.11-13 Vehicular Trip Generation by Residential Village / Development Component

Land Use	Total Vehicle Trip-Ends						
	Daily	A.M. Peak Hour			P.M. Peak Hour		
		Entering	Exiting	Total	Entering	Exiting	Total
Village 1	858	12	48	60	58	6	64
Village 2	871	12	49	61	59	6	65
Village 3	1,319	18	74	92	89	9	98
Village 4	1,124	15	63	78	75	8	83

Table 5.11-13 Vehicular Trip Generation by Residential Village / Development Component

Land Use	Total Vehicle Trip-Ends						
	Daily	A.M. Peak Hour			P.M. Peak Hour		
		Entering	Exiting	Total	Entering	Exiting	Total
Village 5	650	9	36	45	44	4	48
Village 6	404	6	23	28	27	3	30
Village 7	1,269	17	71	89	85	9	94
Village 8	631	9	35	44	42	4	47
Village 9	1,086	15	61	76	73	7	81
Village 10	707	10	40	49	47	5	52
Village 11	675	9	38	47	45	5	50
Village 12	461	6	26	32	31	3	34
Village 13	505	7	28	35	34	3	37
Village 14	903	12	51	63	61	6	67
Krumenacher Property 1 (West of National Drive)	4,202	58	237	295	61	249	310
Krumenacher Property 3 (East of Powerlines)	1,190	17	70	87	18	73	91
<i>Residential Development</i>	16,855	232	950	1,182	849	401	1,251
Elementary School	1,263	84	24	109	32	69	101
Middle School / High School	5,110	322	118	440	135	265	401
<i>Schools</i>	6,373	407	142	549	167	334	501
<i>Commercial Development</i>	4,399	185	90	275	129	199	328
Total	27,627	824	1,182	2,006	1,145	934	2,080

Source: data provided by DKS in 2017

Project Trip Distribution

Exhibit 5.11-9 illustrates project daily trip distribution, as predicted by the travel model.

Existing Plus Project Traffic Volumes and Data

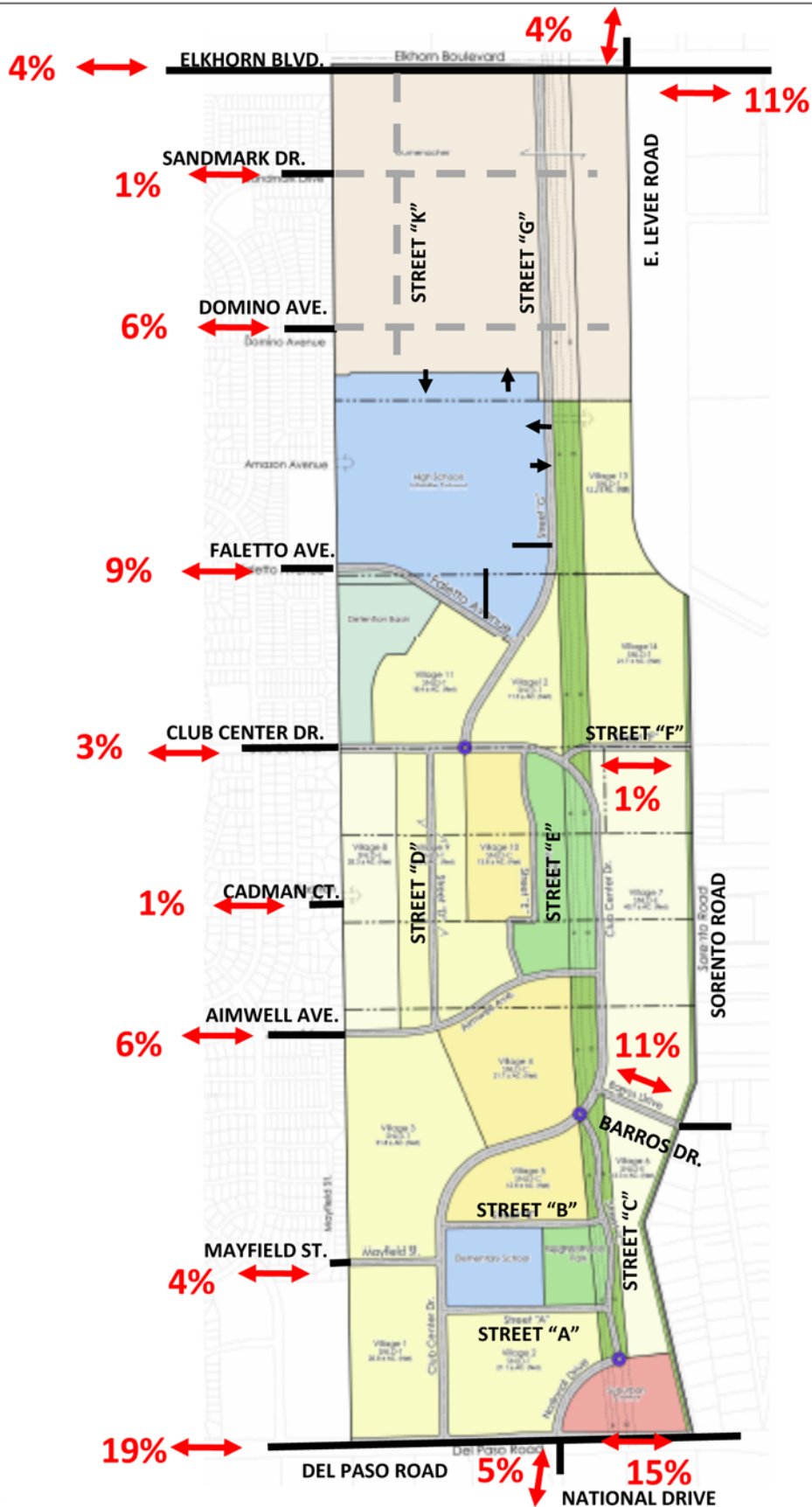
Existing plus project conditions assume full completion of the project's on-site transportation network. As part of the project, Elkhorn Boulevard, along the project frontage, will be constructed to its ultimate cross-section from the centerline south. Additionally, it is assumed that Del Paso Road will be widened to a six-lane cross-section from Black Rock Drive to east of Sorrento Road.

Intersections

Exhibit 5.11-10 illustrates the study area intersections. Exhibits 5.11-11 through 5.11-13 illustrate AM peak hour and PM peak hour traffic volumes associated with the existing plus project scenario. The figure also illustrates the intersection geometry of the Existing Plus Project scenario. No changes to off-site intersections have been assumed, except for the intersections along Elkhorn Boulevard, Del Paso Road, and Sorrento Road abutting the site.

ISSUES DISMISSED FROM FURTHER CONSIDERATION

The closest airport is Rio Linda Airport, a small public use airport located east of the project area. Sacramento International Airport is located approximately 4.5 miles from the project area. The project would not have impacts on air traffic, and would not result in incompatible uses in the study area. This issue is not discussed further in this DEIR.



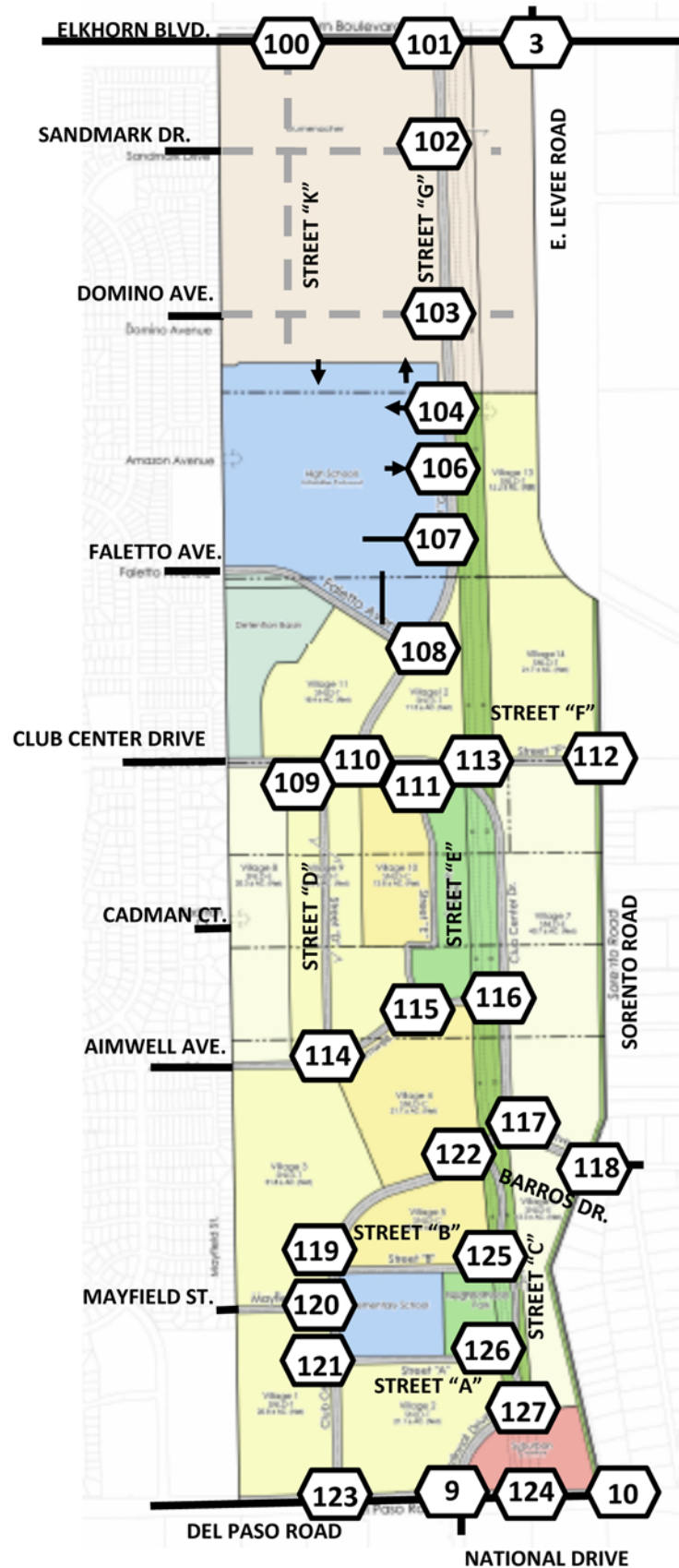
Source: DKS 2017

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Exhibit 5.11-9

Daily Trip Distribution, Existing Plus Project





Source: DKS 2017

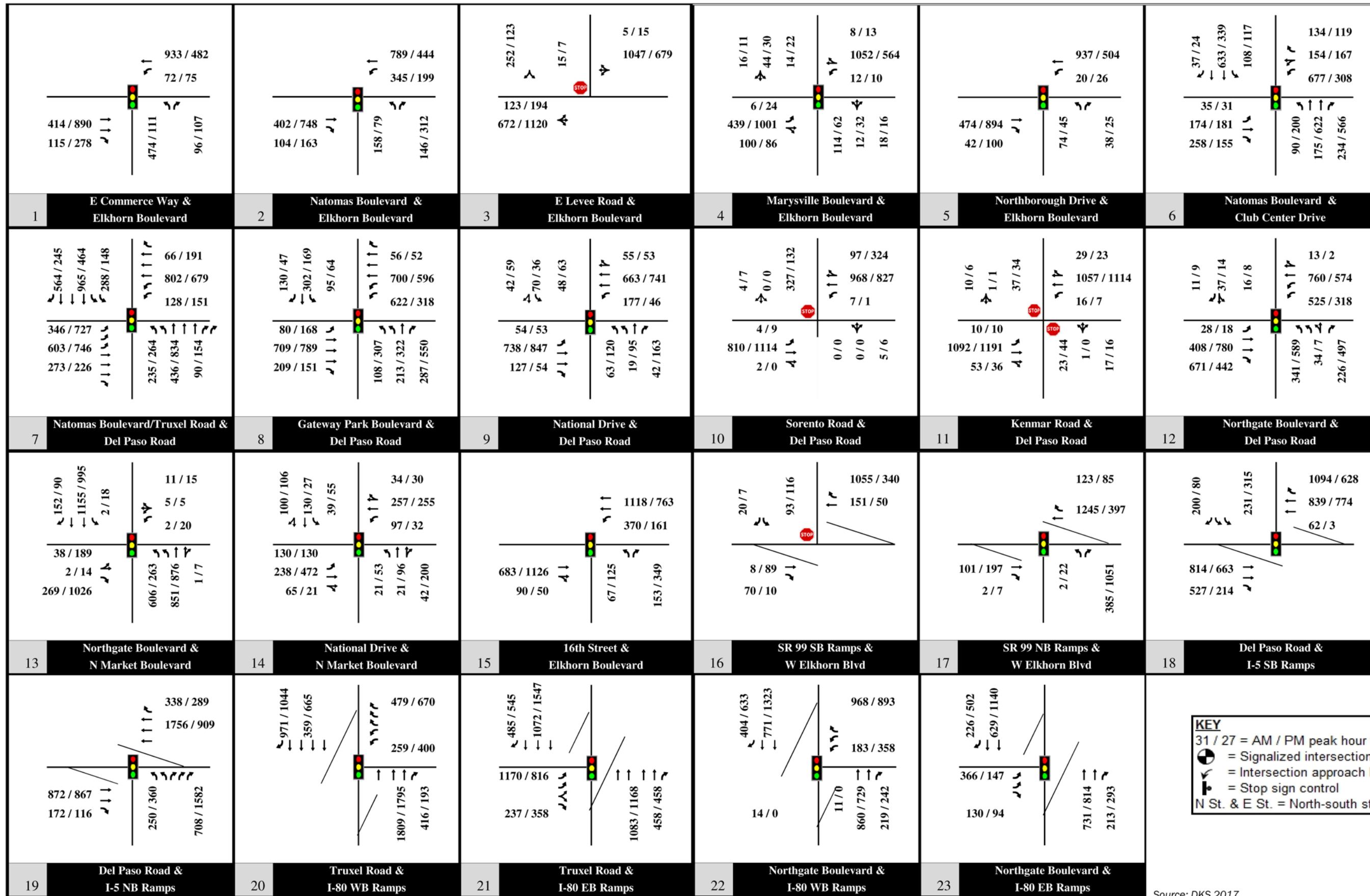
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Exhibit 5.11-10

Site Study Area



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KEY
 31 / 27 = AM / PM peak hour traffic volume
 = Signalized intersection
 = Intersection approach lane
 = Stop sign control
 N St. & E St. = North-south street / east-west street

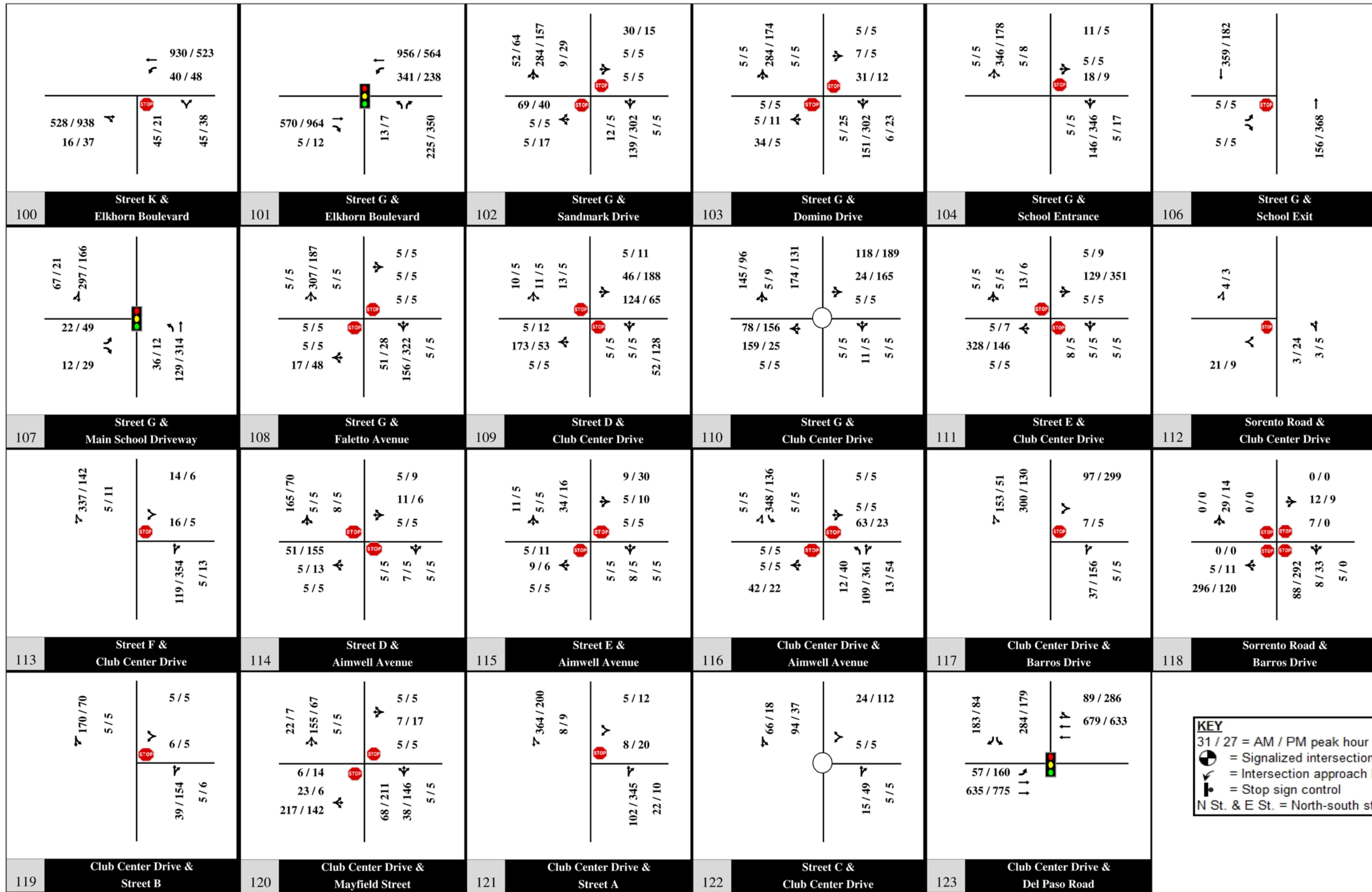
Source: DKS 2017

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Exhibit 5.11-11

Existing Plus Project Volumes and Geometry





KEY
 31 / 27 = AM / PM peak hour traffic volume
 = Signalized intersection
 = Intersection approach lane
 = Stop sign control
 N St. & E St. = North-south street / east-west street

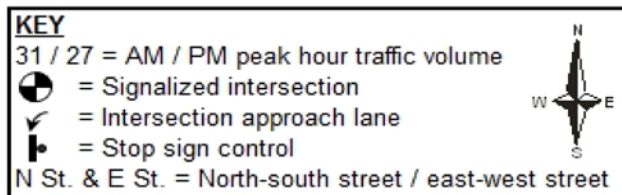
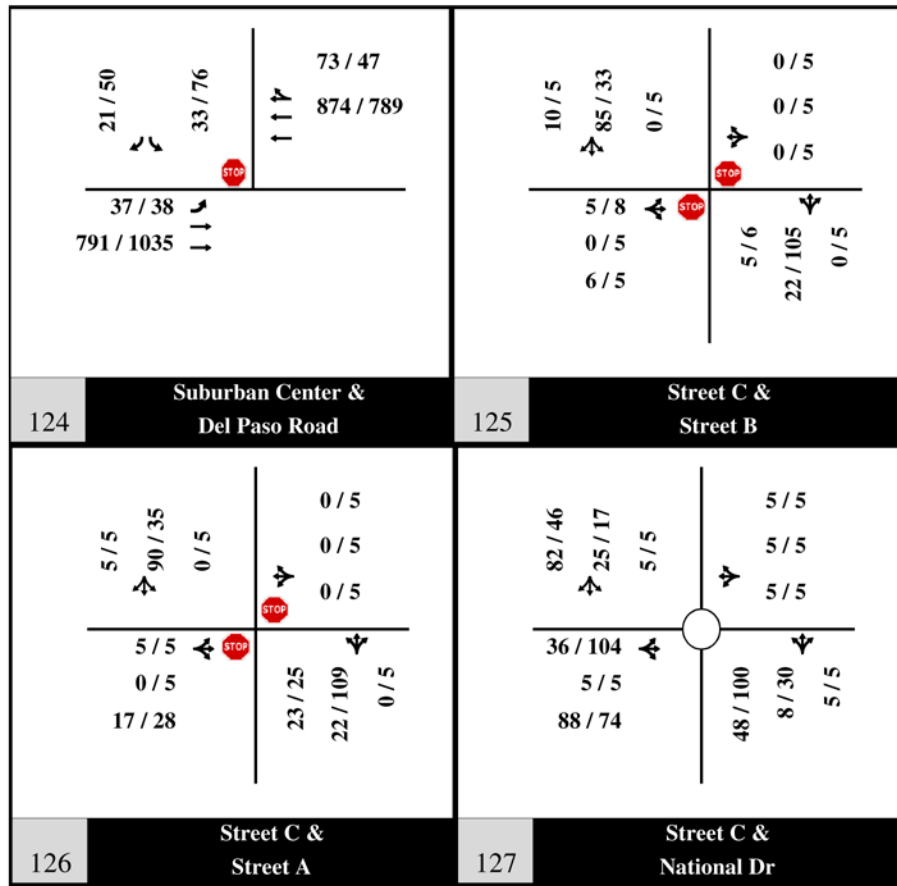
Source: DKS 2017

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Exhibit 5.11-12

Existing Plus Project Volumes and Geometry





Source: DKS 2017

X16010111 01 022

PROJECT IMPACTS AND MITIGATION MEASURES

Impact 5.11-1: Construction-Related Impacts

During construction of the project, construction activities and temporary construction vehicle traffic would increase traffic congestion and disruptions in the area. Depending on the timing and intensity of such activities, this could result in substantial congestion and disruption in excess of City standards. Impacts would be **significant**.

Construction may include disruptions to the transportation network near the project area, including the possibility of temporary lane closures, street closures, sidewalk closures, and bikeway closures. Pedestrian and bicycle access may be disrupted. Additionally, heavy vehicles, equipment, and trucks would access the site and may need to be staged for construction. These activities could result in degraded roadway operating conditions along Del Paso Road, Sorento Road, Elkhorn Boulevard, Club Center Drive, Mayfield Street, Aimwell Avenue, and Faletto Avenue. Therefore, the impacts are considered **significant**.

Mitigation Measure 5.11-1: Implement construction traffic management plan.

Before the commencement of construction, the applicant shall prepare a construction traffic management plan to the satisfaction of the City's Traffic Engineer and subject to review by all affected agencies. The plan shall ensure that acceptable operating conditions on roadways are maintained. At a minimum, the plan shall include:

- ▲ Description of trucks including: number and size of trucks per day, expected arrival / departure times, truck circulation patterns. Truck routes will be limited to using Del Paso Road and Elkhorn Boulevard to access and depart the project.
- ▲ Description of staging area including: location, maximum number of trucks simultaneously permitted in staging area, use of traffic control personnel, specific signage.
- ▲ Description of street closures and/or bicycle and pedestrian facility closures including: duration, warning and posted signage, safe and efficient access routes for emergency vehicles, and use of manual traffic control.
- ▲ Description of access plan including: provisions for safe vehicular, pedestrian, and bicycle travel, minimum distance from any open trench, special signage, and private vehicle accesses.
- ▲ Provisions for parking for construction workers.

The traffic management plan shall address all means to minimize temporary impacts from roadway and travel lane disruptions. Adequate emergency response access shall be maintained throughout development of the project. Where the project work area encroaches on a public ROW and reduces the existing pedestrian path of travel to less than 48 inches wide, alternate pedestrian routing shall be provided during construction activities. Additionally, access to all nearby parcels shall be maintained during construction activities.

Significance after Mitigation

With implementation of Mitigation Measure 5.11-1, appropriate signage and access would be provided so as to maintain the flow of traffic in the vicinity of the project area and avoid truck traffic from utilizing local residential roadways. As a result, this impact would be reduced to a **less-than-significant** level.

Impact 5.11-2: Intersection Operations

The addition of project-related traffic would increase delay at local intersections. Study intersections would meet level of service standards with the exception of the Sorento Road / Del Paso Road intersection. This is considered a **significant** impact.

Table 5.11-14 summarizes the results of the existing plus project peak hour intersection analysis. Intersection LOS exceeding significance thresholds are shown in bold font.

Table 5.11-14 Existing Plus Project Intersection Operating Conditions

Intersection	LOS Criteria	Traffic Control	AM Peak Hour				PM Peak Hour			
			Existing		Existing Plus Project		Existing		Existing Plus Project	
			LOS	Delay (Seconds)	LOS	Delay (Seconds)	LOS	Delay (Seconds)	LOS	Delay (Seconds)
1. East Commerce Way / Elkhorn Boulevard	D	Signalized	C	23.7	C	25.3	A	8.8	A	9.1
2. Natomas Boulevard / Elkhorn Boulevard	D	Signalized	B	17.9	B	16.3	C	31.5	C	31.9
3. E. Levee Road/Elkhorn Boulevard	E / D	Unsignalized	A	7.3	D	29.0	A	1.6	A	4.2
4. Marysville Boulevard / Elkhorn Boulevard	E	Signalized	C	33.1	D	39.2	D	37.3	D	45.2
5. Northborough Drive / Elkhorn Boulevard	D	Signalized	B	19.2	B	19.0	B	18.6	C	23.1
6. Natomas Boulevard/Club Center Drive	D	Signalized	C	33.3	D	45.4	D	40.5	D	35.6
7. Natomas Boulevard / Truxel Road / Del Paso Road	D	Signalized	D	42.0	D	43.9	D	48.6	D	54.2
8. Gateway Park Boulevard / Del Paso Road	D	Signalized	D	38.0	D	44.4	D	39.0	D	54.2
9. National Drive / Del Paso Road	E / D	Signalized	C	33.7	D	37.5	B	13.8	C	25.7
10. Sorento Road / Del Paso Road	D	Unsignalized	A	0.4	F	188.7	A	0.3	D	29.4
11. Kenmar Road / Del Paso Road	E	Unsignalized	A	2.9	A	4.2	A	1.9	A	7.9
12. Northgate Boulevard / Del Paso Road	E	Signalized	C	24.0	C	25.5	C	20.1	C	23.9
13. Northgate Boulevard / North Market Boulevard	D	Signalized	B	14.9	B	16.3	C	21.1	B	16.1
14. National Drive / North Market Boulevard	E	Signalized	C	26.0	C	25.1	C	24.0	C	24.4
15. 16th Street / Elkhorn Boulevard	E	Signalized	C	30.7	C	28.8	C	27.7	C	24.1
16. Elkhorn Boulevard / SR 99 Southbound Ramps	D	Unsignalized	A	4.0	A	4.1	A	4.4	A	4.6
17. Elkhorn Boulevard / SR 99 Northbound Ramps	D	Signalized	B	16.5	B	17.5	A	4.6	A	5.2
18. Del Paso Road / I-5 Southbound Ramps	D	Signalized	A	4.2	A	4.4	A	4.4	A	5.8
19. Del Paso Road / I-5 Northbound Ramps	D	Signalized	B	14.0	B	14.2	C	21.7	C	22.7
20. Truxel Road / I-80 Westbound Ramps	D	Signalized	A	8.0	B	11.6	B	10.1	B	12.3
21. Truxel Road / I-80 Eastbound Ramps	D	Signalized	B	12.7	B	11.4	B	10.9	B	10.0
22. Northgate Boulevard / I-80 Westbound Ramps	D	Signalized	A	5.8	A	5.8	A	8.6	A	8.9
23. Northgate Boulevard / I-80 Eastbound Ramps	D	Signalized	A	7.4	A	7.7	A	4.5	A	5.9
100. Street "K" / Elkhorn Blvd. ¹	D	Unsignalized			A	2.3			A	1.5
101. Street "G" / Elkhorn Blvd. ¹	D	Signalized			B	19.2			D	47.3
102. Street "G" / Sandmark Drive ¹	D	Unsignalized			A	2.8			A	2.2
103. Street "G" / Domino Ave. ¹	D	Unsignalized			A	2.0			A	1.3
104. Street "G" / School Entrance ¹	D	Unsignalized			A	0.8			A	0.6
106. Street "G" / School Exit ¹	D	Unsignalized			A	0.2			A	0.2
107. Street "G" / Main School Driveway ¹	D	Signalized			A	2.6			A	3.8
108. Street "G" / Faletto Avenue ¹	D	Unsignalized			A	1.7			A	1.7
109. Street "D" / Club Center Drive ¹	D	Unsignalized			A	4.5			A	4.2
110. Street "G" / Club Center Drive ¹	D	Roundabout			A	6.1			A	7.0
111. Street "E" / Club Center Drive ¹	D	Unsignalized			A	1.1			A	0.9
112. Sorento Road / Street "F" ¹	D	Unsignalized			A	6.4			A	6.1
113. Club Center Drive / Street "F" ¹	D	Unsignalized			A	0.7			A	0.4

Table 5.11-14 Existing Plus Project Intersection Operating Conditions

Intersection	LOS Criteria	Traffic Control	AM Peak Hour				PM Peak Hour			
			Existing		Existing Plus Project		Existing		Existing Plus Project	
			LOS	Delay (Seconds)	LOS	Delay (Seconds)	LOS	Delay (Seconds)	LOS	Delay (Seconds)
114. Street "D" / Aimwell Avenue ¹	D	Unsignalized			A	8.0			A	7.3
115. Street "E" / Aimwell Avenue ¹	D	Unsignalized			A	6.5			A	4.5
116. Club Center Drive / Aimwell Avenue ¹	D	Unsignalized			A	2.9			A	1.8
117. Club Center Drive / Barros Drive ¹	D	Unsignalized			A	5.6			A	6.9
118. Sorento Road / Barros Drive ¹	D	Unsignalized			A	8.3			A	9.6
119. Club Center Drive / Street "B"	D	Unsignalized			A	0.6			A	0.5
120. Club Center Drive / Mayfield Street ¹	D	Unsignalized			A	6.4			A	6.1
121. Street "A" / Club Center Drive ¹	D	Unsignalized			A	0.4			A	0.7
122. Club Center Drive / Street "C" ¹	D	Roundabout			A	4.3			A	4.1
123. Club Center Drive / Del Paso Road ¹	D	Signalized			A	9.4			A	9.4
124. Suburban Center / Del Paso Road ¹	D	Unsignalized			A	1.1			A	2.6
125. Street "C" / Street "B" ¹	D	Unsignalized			A	2.3			A	2.1
126. Street "C" / Street "A" ¹	D	Unsignalized			A	3.1			A	3.0
127. Street "C" / National Drive ¹	D	Roundabout			A	4.3			A	4.7

Source: Data provided by DKS in 2017

¹ These intersections are internal to the project.

As shown in Table 5.11-14, the addition of project generated traffic would generally increase traffic volumes and average delay at study area intersections. Due to project generated traffic, the intersection of Sorento Road / Del Paso Road would experience a degradation of service from an acceptable LOS (LOS A) to an unacceptable LOS (LOS F) in the a.m. peak hour. Thus, the project would have a **significant** impact on intersection operating conditions.

Mitigation Measure 5.11-2: Intersection improvements.

The project developer shall implement the following intersection improvement:

- Install a traffic signal at the intersection of Sorento Road / Del Paso Road. This intersection meets the peak hour traffic signal warrant during the a.m. peak hour. This improvement shall be incorporated in the project’s public facilities financing plan and installed before deficient operation of the intersection.

Significance after Mitigation

Table 5.11-15 summarizes existing and existing-plus-project conditions, with and without mitigation for the intersection of Sorento Road / Del Paso Road.

Table 5.11-15 Existing Plus Project Intersection Operating Conditions Without and With Mitigation

Intersection	LOS Criteria	Traffic Control	AM Peak Hour				PM Peak Hour			
			Existing		Existing Plus Project		Existing		Existing Plus Project	
			LOS	Delay (Seconds)	LOS	Delay (Seconds)	LOS	Delay (Seconds)	LOS	Delay (Seconds)
Without Mitigation										
10. Sorento Road / Del Paso Road	D	Unsignalized	A	0.4	F	188.7	A	0.3	D	29.4

Table 5.11-15 Existing Plus Project Intersection Operating Conditions Without and With Mitigation

Intersection	LOS Criteria	Traffic Control	AM Peak Hour				PM Peak Hour			
			Existing		Existing Plus Project		Existing		Existing Plus Project	
			LOS	Delay (Seconds)	LOS	Delay (Seconds)	LOS	Delay (Seconds)	LOS	Delay (Seconds)
With Mitigation										
10. Sorento Road / Del Paso Road	D	Signalized			B	16.9			A	10.0
Source: Data provided by DKS in 2017										

As shown in Table 5.11-15, Mitigation Measure 5.11-2 would reduce the delay associated with project generated traffic at the intersection of Sorento Road / Del Paso Road in the a.m. peak hour from 188.7 seconds (LOS F) to 16.9 seconds (LOS B), thus, resulting in an acceptable LOS. The installation of the traffic are not expected to result in significant biological resources as none exist in this area (see Section 5.3, “Biological Resources”). Roadway improvements would be required to implement construction water quality control measures consistent with City requirements associated with the City’s Phase I NPDES permit for stormwater municipal discharges to surface waters. Therefore, this impact would be reduced to a **less-than-significant** level.

Impact 5.11-3: Roadway Segment Operations

The addition of project-related traffic would increase delay at along study area roadway segments. The increase in delay along multiple roadway segments within the study area would level of service standards for the City and Sacramento County. This is considered a **significant** impact.

Table 5.11-16 summarizes the results of the existing plus project roadway segment analysis. Roadway segment LOS exceeding significance thresholds are shown in bold font. This analysis also includes project internal roadway segments.

Table 5.11-16 Existing Plus Project Roadway Segment Conditions

Roadway	Segment	Operational Class	Existing				Existing Plus Project			
			Lanes	Daily Volume	Volume-to-Capacity Ratio	LOS	Lanes	Daily Volume	Volume-to-Capacity Ratio	LOS
Elkhorn Boulevard	SR 99 to East Commerce Way	Arterial – Moderate Access Control	2	18,700	1.04	F	2	19,600	1.09	F
	East Commerce Way to Northborough Drive		2	17,300	0.96	E	2	18,200	1.01	F
	Northborough Drive to Natomas Boulevard		2	16,200	0.90	D	2	16,800	0.93	E
	Natomas Boulevard to Sageview Drive		2	19,000	1.06	F	2	18,900	1.05	F
	Sageview Drive to E. Levee Road		2	17,100	0.95	E	2	22,000	1.22	F
	E. Levee Road to Marysville Boulevard		2	17,500	0.97	E	2	20,300	1.13	F
Natomas Boulevard	North Bend Drive to Club Center Drive	Arterial – Moderate Access Control	4	26,700	0.74	C	4	28,600	0.79	C
	Club Center Drive to Elkhorn Boulevard		4	13,000	0.36	A	4	12,300	0.34	A
Del Paso Road	Truxel Road to Gateway Park Boulevard		6	21,300	0.39	A	6	22,700	0.42	A
	Gateway Park Boulevard to Black Rock Drive		6	22,400	0.41	A	6	28,500	0.53	A
Del Paso Road	Black Rock Drive to National Drive		4	20,800	0.58	A	4	21,000	0.58	A
	National Drive to Northgate Boulevard		4	20,700	0.58	A	4	26,700	0.74	C
Northgate Boulevard	Del Paso Road to North Market Boulevard		4	23,500	0.65	B	4	27,400	0.76	C
	North Market Boulevard to I-80		6	36,000	0.67	B	6	39,700	0.74	C

Table 5.11-16 Existing Plus Project Roadway Segment Conditions

Roadway	Segment	Operational Class	Existing				Existing Plus Project			
			Lanes	Daily Volume	Volume-to-Capacity Ratio	LOS	Lanes	Daily Volume	Volume-to-Capacity Ratio	LOS
Main Avenue	Northgate Boulevard to Norwood Avenue		4	19,700	0.55	A	4	20,900	0.58	A
Sageview Drive	Elkhorn Boulevard to Bridgecross Drive	Local Street	2	3,700	0.74	C	2	1,300	0.26	A
Bridgecross Drive	East of Honor Parkway	Minor Collector	2	2,800	0.32	A	2	2,600	0.30	A
Regency Park Circle	North of Club Center Drive	Local Street	2	5,300	1.06	F	2	6,100	1.22	F
Danbrook Drive	South of Club Center Drive		2	5,100	1.02	F	2	5,900	1.18	F
Sorento Road	North of Del Paso Road		2	340	0.07	A	2	5,200	1.04	F
National Drive	Del Paso Road to Street "C"	Major Collector					2	4,300	0.31	A
Club Center Drive	Danbrook Drive to Danbrook Drive	Minor Collector	2	3,200	0.37	A	2	4,600	0.53	A
	West of Street "D"	Major Collector ¹					2	2,300	0.16	A
	Street "D" to Street "G"						2	4,600	0.33	A
	Street "G" to Street "E"						2	5,400	0.39	A
	Street "E" to Street "F"						2	5,400	0.39	A
	Street "F" to Aimwell Avenue						2	5,400	0.39	A
	Aimwell Avenue to Barros Drive						2	7,100	0.51	A
	Barros Drive to Street "C"						2	2,500	0.18	A
	Street "C" to Street "B"						2	3,000	0.21	A
	Street "B" to Mayfield Street						2	3,100	0.22	A
	Mayfield Street to Street "A"						2	6,400	0.46	A
Street "A" to Del Paso Road					2	6,500	0.46	A		
Street "A"	Club Center Drive to Street "C"	Minor Collector ¹					2	600	0.07	A
Street "B"	Club Center Drive to Street "C"						2	500	0.06	A
Street "C"	Club Center Drive to Street "B"	Minor Collector ¹					2	1,500	0.17	A
	Street "B" to Street "A"						2	1,600	0.18	A
	Street "A" to National Drive						2	2,100	0.245	A
Street "D"	Club Center Drive to Aimwell Avenue	Local Street ¹					2	3,000	0.60	A
Street "E"	Club Center Drive to Aimwell Avenue						2	1,000	0.20	A
Street "F"	Club Center Drive to Sorento Road						2	500	0.10	A
Street "G"	Elkhorn Boulevard to Sandmark Drive	Major Collector ¹					2	7,800	0.56	A
	Sandmark Drive to Domino Avenue						2	6,100	0.44	A
	Domino Avenue to Main School Entrance						2	6,900	0.49	A
	Main School Entrance to Falletto Avenue						2	6,300	0.45	A
	Falletto Avenue to Club Center Drive						2	7,000	0.50	A
Street "K"	South of Elkhorn Boulevard	Local Street ¹					2	2,300	0.46	A
Aimwell Avenue	West of Street "D"	Local Street ¹					2	3,000	0.60	A
	Street "D" to Street "E"						2	500	0.10	A
Aimwell Avenue	Street "E" to Club Center Drive						2	800	0.16	A

Table 5.11-16 Existing Plus Project Roadway Segment Conditions

Roadway	Segment	Operational Class	Existing				Existing Plus Project			
			Lanes	Daily Volume	Volume-to-Capacity Ratio	LOS	Lanes	Daily Volume	Volume-to-Capacity Ratio	LOS
Barros Drive	Club Center Drive to Sorento Road						2	4,700	0.94	E
Cadman Court	East of Archcrest Way						2	500	0.10	A
Domino Avenue	East of Amnest Way						2	3,000	0.60	A
Faletto Avenue	West of School South Lot	Minor Collector ¹					2	2,400	0.27	A
	School South Lot to Street "G"						2	1,000	0.11	A
Mayfield Street	West of Club Center Drive	Local Street ¹					2	4,300	0.86	D
Sandmark Drive	East of Caddington Way						2	500	0.10	A

Source: Data provided by DKS in 2017

¹ Internal project roadway segments.

As summarized in Table 5.11-16, the addition of project traffic would generally increase daily traffic volumes on study area roadway segments. The project would increase daily traffic volumes and degrade operating conditions to unacceptable levels along the following roadway segments:

- ▲ **Elkhorn Boulevard – SR 99 to Marysville Boulevard** – Project generated traffic would result in LOS E or F conditions along all roadway segments analyzed from SR 99 to Marysville Boulevard. As shown in Table 5.11-16, five of the six roadway segments would experience LOS degrading from acceptable to unacceptable levels under City and Sacramento County standards, or an increase in volume-to-capacity ratio that exceeds the threshold of significance.
- ▲ **Regency Park Circle – North of Club Center Drive** - Project generated traffic would result in LOS F conditions and an increase in volume-to-capacity ratio of 0.02 or greater.
- ▲ **Danbrook Drive – South of Club Center Drive** - Project generated traffic would result in LOS F conditions with an increase in volume-to-capacity ratio of 0.02 or greater.
- ▲ **Sorento Road – North of Del Paso Road** - Project generated traffic would result in LOS F conditions.
- ▲ **Barros Drive – Sorento Road to Club Center Drive** - Project generated traffic would result in LOS F conditions.

Therefore, the project would have a **significant** impact on operating conditions of roadway segments within the study area.

Mitigation Measure 5.11-3a: Roadway segment improvement.

The project developer shall implement the following improvements:

- ▲ Elkhorn Boulevard – SR 99 to Marysville Boulevard – Widen to four lanes. This improvement will be incorporated in the project's public facilities financing plan for fair-share contribution and in place before deficient operation.

Mitigation Measure 5.11-3b: Development of a neighborhood traffic management plan.

The project developer shall prepare neighborhood traffic management plans for the following roadway segments for review and approval by the City:

- ▲ Regency Park Circle – North of Club Center Drive
- ▲ Danbrook Drive – South of Club Center Drive
- ▲ Sorento Road – North of Del Paso Road

The neighborhood traffic management plans shall be implemented to address the impacts of increased traffic volumes on this street. The plans shall be developed in accordance with City practices, including the involvement of the neighborhood. The plans will focus on travel speed and safe pedestrian crossings, and may include elements such as chokers, pedestrian islands, curb extensions, and speed humps.

Significance after Mitigation

Table 5.11-17 summarizes existing and existing-plus-project conditions, with and without mitigation at the roadway segments along Elkhorn Boulevard within the study area.

Table 5.11-17 Existing Plus Project Roadway Segment Conditions Without and With Mitigation

Roadway	Segment	Operational Class	Existing				Existing Plus Project			
			Lanes	Daily Volume	Volume-to-Capacity Ratio	LOS	Lanes	Daily Volume	Volume-to-Capacity Ratio	LOS
Without Mitigation										
Elkhorn Boulevard	SR 99 to East Commerce Way	Arterial -	2	18,700	1.04	F	2	19,600	1.09	F
	East Commerce Way to Northborough Drive	Moderate	2	17,300	0.96	E	2	18,200	1.01	F
	Northborough Drive to Natomas Boulevard	Access Control	2	16,200	0.90	D	2	16,800	0.93	E
	Natomas Boulevard to Sageview Drive		2	19,000	1.06	F	2	18,900	1.05	F
	Sageview Drive to E. Levee Road		2	17,100	0.95	E	2	22,000	1.22	F
	E. Levee Road to Marysville Boulevard		2	17,500	0.97	E	2	20,300	1.13	F
With Mitigation										
Elkhorn Boulevard	SR 99 to East Commerce Way	Arterial - Moderate Access Control					4	19,600	0.54	A
	East Commerce Way to Northborough Drive						4	18,200	0.51	A
	Northborough Drive to Natomas Boulevard						4	16,800	0.47	A
	Natomas Boulevard to Sageview Drive						4	18,900	0.53	A
	Sageview Drive to E. Levee Road						4	22,000	0.61	B
	E. Levee Road to Marysville Boulevard						4	20,300	0.56	A

Source: Data provided by DKS in 2017

Elkhorn Boulevard

As shown in Table 5.11-17, Mitigation Measure 5.11-3a would reduce the impact of project generated traffic along Elkhorn Boulevard in the study area to an acceptable LOS and volume-to-capacity ratio increase. The *North Natomas Nexus Study and Finance Plan 2008 Update* identifies the widening of Elkhorn Boulevard to six lanes within the City, but does not address improvements beyond city limits to Marysville Boulevard (City of Sacramento 2009). The environmental impacts of widening of Elkhorn Boulevard from a two-lane to a four- to six-lane facility were programmatically evaluated as part of the City of Sacramento 2035 General Plan implementation in the City of Sacramento 2035 General Plan Update Master EIR. Implementation of Mitigation Measure 5.11.3a would result in an acceptable LOS and would reduce the impact on Elkhorn Boulevard to a **less-than-significant** level.

Regency Park Circle, Danbrook Drive, Sorento Road, and Barros Drive

Mitigation Measure 5.11-3b includes the implementation of neighborhood traffic management plans for the segments along Regency Park Circle, Danbrook Drive, and Sorento Road experiencing deficient operations consistent with General Plan Policy M 4.3.2 on the provision of traffic calming measures. However, the traffic volume reductions associated with these plans are uncertain. Widening of these roadways is considered infeasible as it would require right-of-way acquisition from adjoining residential areas and would conflict with General Plan policies that promote pedestrian and bicycle usage (policies M 1.2.1, M 2.1.3, M 4.2.2, and M 4.3.2). Additionally, no mitigation measure has been identified for the deficient roadway segment along Barros Drive. The intersections along this roadway segment would function at an acceptable level of service without the need for further widening. In accordance with General Plan policies to promote non-automotive modes of travel, no widening of Barros Drive is proposed. No alternative mitigation measure in accordance with General Plan Policy M 1.2.2 has been identified. Thus, this impact is **significant and unavoidable** to traffic operational impacts to Regency Park Circle, Danbrook Drive, Sorento Road, and Barros Drive.

Impact 5.11-4: Freeway Operations

While implementation of the project was determined to would contribute substantial traffic volumes to the currently deficient freeway segment of eastbound I-80 from Truxel Road to Northgate Boulevard, recently completed HOV lanes and other improvements to I-80 would improve operations and avoid significant operational impacts. This is considered a **less than significant** impact.

Table 5.11-18 summarizes the existing and existing plus project peak hour freeway LOS. Freeway segment LOS exceeding significance thresholds are shown in bold font.

Table 5.11-18 Existing Plus Project Peak Hour Freeway Mainline Level of Service

Direction	Location	Through Lanes	Aux. Lanes	Existing			Existing Plus Project		
				Volume	Density	LOS	Volume	Density	LOS
AM Peak Hour									
East-bound I-80	I-5 to Truxel Road	3	1	5,262	20.8	C	5,307	21.0	C
	Truxel Road to Northgate Boulevard	3	1	4,810	18.8	C	4,828	18.9	C
	Northgate Boulevard to Norwood Avenue	3	0	4,820	28.0	D	4,853	28.2	D
West-bound I-80	I-5 to Truxel Road	3	1	5,480	21.7	C	5,548	22.1	C
	Truxel Road to Northgate Boulevard	3	1	5,062	19.9	C	5,092	20.0	C
	Northgate Boulevard to Norwood Avenue	3	0	5,539	35.1	E	5,530	35.0	E
North-bound I-5	Arena Boulevard to Del Paso Road	3	1	4,898	21.4	C	4,903	21.4	C
	Del Paso Road to SR 99	3	0	4,378	25.6	C	4,450	26.1	D
South-bound I-5	Arena Boulevard to Del Paso Road	3	1	5,212	25.9	C	5,196	25.8	C
	Del Paso Road to SR 99	4	0	4,001	17.0	B	3,945	16.8	B
North-bound SR 99	I-5 to Elkhorn Boulevard	2	0	1,169	9.3	A	1,170	9.3	A
	Elkhorn Boulevard to Elverta Road	2	0	904	7.2	A	923	7.4	A
South-bound SR 99	I-5 to Elkhorn Boulevard	2	0	3,305	29.0	D	3,295	28.9	D
	Elkhorn Boulevard to Elverta Road	2	0	2,266	18.8	C	2,198	18.6	C
PM Peak Hour									
East-bound I-80	I-5 to Truxel Road	3	1	5,407	21.4	C	5,472	21.7	C
	Truxel Road to Northgate Boulevard	3	1	5,288	59.6	F	5,304	59.7	F
	Northgate Boulevard to Norwood Avenue	3	0	5,864	35.8	D	5,845	35.6	E
West-bound I-80	I-5 to Truxel Road	3	1	4,517	17.7	B	4,604	18.0	C
	Truxel Road to Northgate Boulevard	3	1	4,516	17.7	B	4,535	17.7	B

Table 5.11-18 Existing Plus Project Peak Hour Freeway Mainline Level of Service

Direction	Location	Through Lanes	Aux. Lanes	Existing			Existing Plus Project		
				Volume	Density	LOS	Volume	Density	LOS
North-bound I-5	Northgate Boulevard to Norwood Avenue	3	0	4,466	24.5	C	4,515	24.8	C
	Arena Boulevard to Del Paso Road	3	1	6,286	27.4	D	6,289	27.4	D
South-bound I-5	Del Paso Road to SR 99	3	0	4,776	30.9	D	4,743	30.7	D
	Arena Boulevard to Del Paso Road	3	1	4,197	17.9	B	4,198	17.9	B
North-bound SR 99	Del Paso Road to SR 99	4	0	3,662	18.0	B	3,750	18.3	C
	I-5 to Elkhorn Boulevard	2	0	3,128	40.5	E	3,141	40.6	E
South-bound SR 99	Elkhorn Boulevard to Elverta Road	2	0	2,187	20.7	C	2,162	20.5	C
	I-5 to Elkhorn Boulevard	2	0	1,530	12.2	B	1,567	12.5	B
	Elkhorn Boulevard to Elverta Road	2	0	1,457	11.6	B	1,481	11.8	B

Source: Data provided by DKS in 2017

Table 5.11-19 summarizes the existing plus project peak hour freeway ramp queue length.

Table 5.11-19 Existing Plus Project Peak Hour Freeway Ramp Termini Queuing

Direction	Location	Available Storage Length (feet/lane)	Maximum Queue Length (feet/lane)	
			Existing	Existing Plus Project
AM Peak Hour				
I-80 Eastbound	Truxel Road	810	254	257
	Northgate Boulevard	700	221	228
I-80 Westbound	Truxel Road	1,075	137	166
	Northgate Boulevard	680	64	70
I-5 Northbound	Del Paso Road	690	232	236
I-5 Southbound	Del Paso Road	595	108	115
SR 99 Northbound	Elkhorn Boulevard	915	75	75
SR 99 Southbound	Elkhorn Boulevard	900	73	73
PM Peak Hour				
I-80 Eastbound	Truxel Road	810	217	230
	Northgate Boulevard	700	362	362
I-80 Westbound	Truxel Road	1,075	169	176
	Northgate Boulevard	680	217	233
I-5 Northbound	Del Paso Road	690	264	409
I-5 Southbound	Del Paso Road	595	197	231
SR 99 Northbound	Elkhorn Boulevard	915	520	520
SR 99 Southbound	Elkhorn Boulevard	900	87	90

Source: data provided by DKS in 2017

As summarized in Tables 5.11-16 and 5.11-17, the proposed project would add traffic to freeway segments and ramp junctions in the study area. However, the analysis is based on existing plus project conditions without consideration of the I-80 improvements (including HOV lanes) that were under construction as of the date of the Notice of Preparation. Current mainline traffic operations have improved to levels better than those shown in Table 5.11-16 (existing and existing plus project), and would operate at acceptable levels in the existing plus project scenario. Therefore, the project would have a **less-than-significant** impact on freeway facilities.

Mitigation Measures

No mitigation is required.

Impact 5.11-5: Demand for Bicycle Facilities

The project would provide adequate on-site bicycle facilities, and connections to the existing bicycle facilities surrounding the project area. Additionally, the project would not remove or interfere with any existing or planned bicycle facility in the area. This is considered a **less-than-significant** impact.

Implementation of the proposed project would not remove any existing bicycle facilities. As shown in Exhibit 3-8 and 5.11-3, the Panhandle PUD would establish on-street bike facility connections that would connect with on-street bike facilities on Del Paso Road, Mayfield Street, Aimwell Avenue, Club Center Drive, and Faletto Avenue. In addition, the project would establish a new off-street bike/pedestrian facility associated with the Ninos Parkway. These proposed bike facilities are consistent with the alignments set forth in the City's Bicycle Master Plan. Thus, the project would improve bicycle facilities in the North Natomas Community Plan area. The impact would be **less than significant**.

Mitigation Measures

No mitigation required.

Impact 5.11-6: Demand for Pedestrian Facilities

The project would provide adequate on-site pedestrian facilities, and connections to the existing pedestrian facilities surrounding the project area. Additionally, the project would not remove or interfere with any existing or planned pedestrian facility in the area. This is considered a **less-than-significant** impact.

The proposed project includes the construction of new pedestrian facilities along City streets per City standards. Consistent with the City's Pedestrian Master Plan, the project would establish a new off-street bike/pedestrian facility associated with the Ninos Parkway (see Exhibit 3-4). Sidewalks and off-street paths would provide pedestrian access throughout the project, and the proposed pedestrian facilities would connect to the existing pedestrian facilities abutting the site. Thus, the project is not anticipated to adversely affect existing or planned pedestrian facilities. The impact would be **less than significant**.

Mitigation Measures

No mitigation required.

Impact 5.11-7: Demand for Transit Service

The project would not conflict with existing or planned transit services. However, the project would not provide direct access to transit. This is considered a **significant** impact.

Transit service to the project consists of bus service on RT Route 13 that travels along North Market Boulevard approximately 0.65 miles south of the project and the North Natomas Transportation Management Association's Flyer Shuttle. The *Sacramento Regional Transit Short Range Transit Plan* does identify the future potential for "Hi Bus Service" (enhanced bus service) along Elkhorn Boulevard as part of its Transit Action Plan (RT 2014:210). The Panhandle PUD design would not conflict with the potential for future transit services along Elkhorn Boulevard, Del Paso Road, or its internal roadway system. The project would also not obstruct bicycle and pedestrian users from accessing transit stops in the area. However, no direct access to transit would be made available to the project. Thus, the project would result in a **significant** impact for transit service provision.

Mitigation Measure 5.11-7: Transit service improvements

The project developer shall join the North Natomas Transportation Management Association and will coordinate on feasible measures to provide transit information and services to project residents that is phased with development and transit demand. The project developer will provide proof of compliance with this mitigation measure with each small lot subdivision map submittal.

Significance after Mitigation

Mitigation Measure 5.11-5 would result in the provision of feasible transit information and services to project residents consistent with General Plan Policy M 3.1.12. This mitigation would reduce the impact of the project on the demand for transit to a **less-than-significant** level.

Impact 5.11-8: Impair Emergency Vehicle Access and Hazardous Design Features

Project roadway and emergency access would be designed to meet all City design and safety standards, and would subject to review of the City of Sacramento and responsible emergency services agencies. This is considered a **less-than-significant** impact.

As identified in Exhibit 3-4, the Panhandle PUD would provide new east-west roadway connections (Faletto Avenue, Club Center Drive, Street “F,” Barros Drive, Aimwell Avenue, and Mayfield Avenue). These roadway connections would provide for improved emergency access connection in the project area and would not interfere with emergency response. The project would not modify the existing roadway network such that emergency access along existing roadways would be impaired.

The project would be designed to meet all the design and safety standards established by the City, and would provide adequate site distances and access for vehicles entering and leaving the site. Therefore, the project would have a **less-than-significant** impact on emergency response and safety associated with design features.

Mitigation Measures

No mitigation required.

5.11.4 Cumulative Setting, Impacts, and Mitigation Measures

CUMULATIVE SETTING

Cumulative land use and transportation network characteristics are primarily based on SACOG’s 2016 MTP/SCS, which projects land use to the year 2036. This dataset was primarily used for the cumulative analysis as it contains regional land use projections that are similar to the 2035 horizon year of the City’s General Plan, as well as a funding assured transportation network. Compared to the City’s assumptions in the General Plan, the SACOG 2036 land use projections are slightly greater in the North Natomas area, but lower in the planned Greenbriar area. For modelling purposes, the land use in the SACSIM model was increased in the Greenbriar area to match the assumptions of the City’s 2035 General Plan analysis.

Table 5.11-20 provides a summary of the extent of development assumed for year 2036 for large-scale development projects in the region.

Development Project	Cumulative (2036)	
	Households	Employment
Natomas North Precinct Master Plan	32	435
Placer Vineyards	4,581	1,499
Regional University	1,594	381

Table 5.11-20 Cumulative Development Assumptions for Large Development Projects

Development Project	Cumulative (2036)	
	Households	Employment
Sierra Vista	6,000	3,500
Sutter Pointe	2,848	2,995
Total	15,055	8,810

Source: DKS 2017

See Table 5-2 for a further description of these development projects.

The 2036 transportation network includes several improved facilities in the study area. These facilities include the following:

- ▲ Freeway System
 - HOV lanes on I-80 from the Sacramento River bridge to the Longview Drive
 - HOV lanes on I-5 from Downtown Sacramento to I-80
 - Reconstructed I-5 / I-80 interchange, including HOV lane connectors.
- ▲ Transit System
 - Light Rail Extension from Richards Boulevard to Sacramento International Airport
- ▲ Arterial Roadway System
 - Elkhorn Boulevard – Widen to 6 lanes from SR 99 to East City Limit (western edge of project area)
 - Elkhorn Boulevard – Widen to 4 lanes from East City Limit to 2nd Street (Rio Linda)
 - 16th Street (Rio Linda) – Construct / Widen to 4 lanes from Ascot Avenue to Placer County Line.

CUMULATIVE CONDITIONS TRAFFIC VOLUME FORECASTS

Cumulative (Without Project) Traffic Conditions

Exhibit 5.11-14 illustrates AM peak hour and PM peak hour traffic volumes associated with the cumulative scenario. The figure also illustrates the intersection geometry of the cumulative scenario.

Intersections

Table 5.11-21 summarizes the results of the cumulative peak hour intersection analysis.

Table 5.11-21 Cumulative Plus Project Intersection Operating Conditions (Year 2036)

Intersection	LOS Criteria	Traffic Control	AM Peak Hour				PM Peak Hour			
			Cumulative		Cumulative Plus Project		Cumulative		Cumulative Plus Project	
			LOS	Delay (Seconds)	LOS	Delay (Seconds)	LOS	Delay (Seconds)	LOS	Delay (Seconds)
1. East Commerce Way / Elkhorn Boulevard	D	Signalized	B	11.7	B	10.6	B	12.7	B	12.7
2. Natomas Boulevard / Elkhorn Boulevard	D	Signalized	B	18.2	B	12.4	C	29.7	B	17.2
3. E. Levee Road/Elkhorn Boulevard	E / D	Unsignalized	F	>300	F	162.9	F	100.0	D	28.3
4. Marysville Boulevard / Elkhorn Boulevard	E	Signalized	C	34.0	C	27.4	C	28.0	C	26.1
5. Northborough Drive / Elkhorn Boulevard	D	Signalized	B	12.0	B	11.8	B	12.8	B	12.8
6. Natomas Boulevard/Club Center Drive	D	Signalized	D	37.1	D	39.8	D	46.8	D	45.5

Table 5.11-21 Cumulative Plus Project Intersection Operating Conditions (Year 2036)

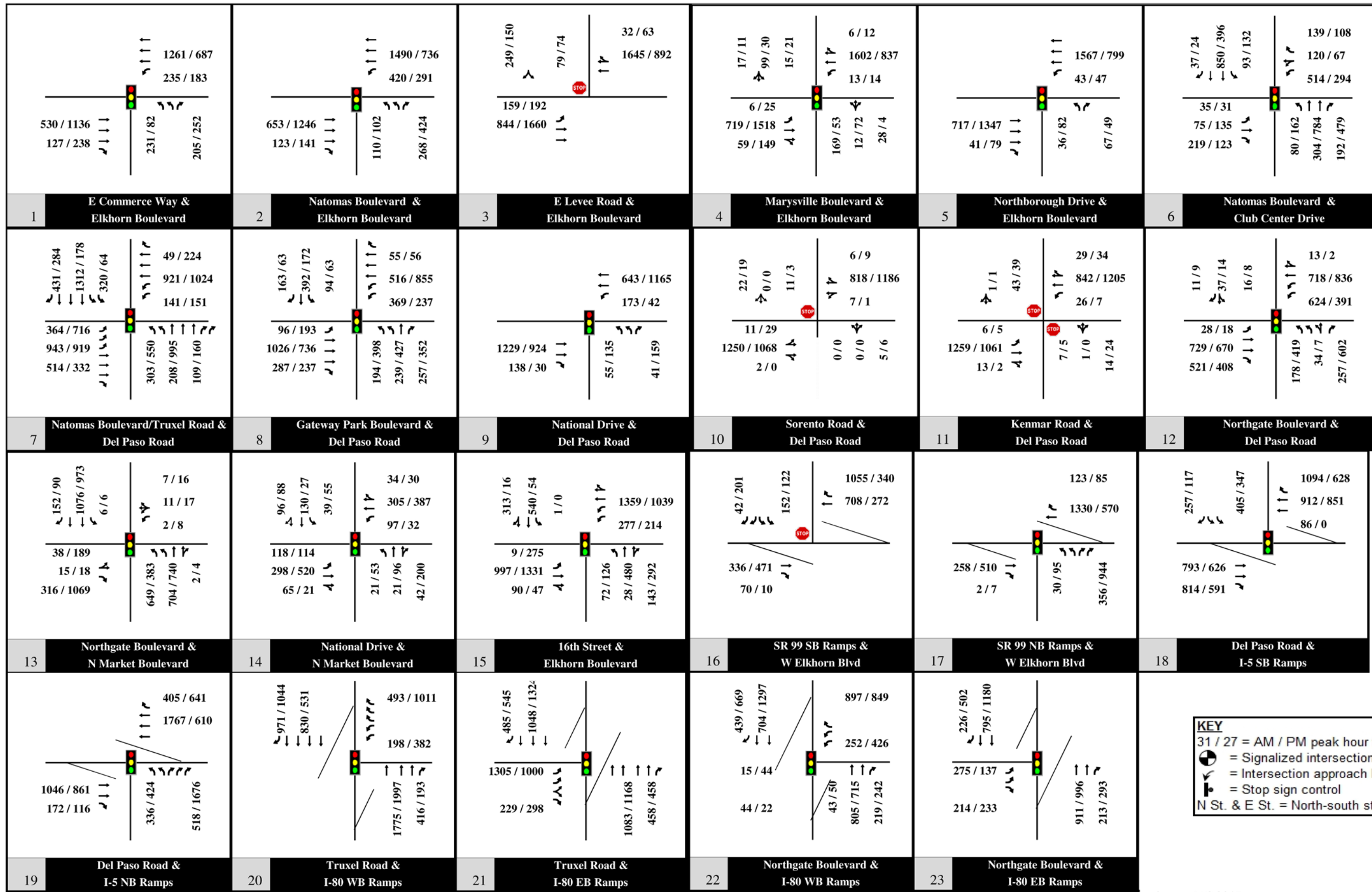
Intersection	LOS Criteria	Traffic Control	AM Peak Hour				PM Peak Hour			
			Cumulative		Cumulative Plus Project		Cumulative		Cumulative Plus Project	
			LOS	Delay (Seconds)	LOS	Delay (Seconds)	LOS	Delay (Seconds)	LOS	Delay (Seconds)
7. Natomas Boulevard / Truxel Road / Del Paso Road	D	Signalized	D	46.8	D	46.3	D	51.9	D	51.3
8. Gateway Park Boulevard / Del Paso Road	D	Signalized	D	42.8	D	51.1	D	49.0	D	50.5
9. National Drive / Del Paso Road	E / D	Signalized	D	39.9	D	43.8	B	14.2	C	28.5
10. Sorento Road / Del Paso Road	D	Unsignalized	A	0.7	F	125.9	A	0.7	E	42.8
11. Kenmar Road / Del Paso Road	E	Unsignalized	A	3.0	B	13.3	A	3.9	C	16.1
12. Northgate Boulevard / Del Paso Road	E	Signalized	C	22.9	C	27.9	C	22.0	C	31.4
13. Northgate Boulevard / North Market Boulevard	D	Signalized	B	18.7	C	20.8	B	15.8	B	18.7
14. National Drive / North Market Boulevard	E	Signalized	C	24.5	C	25.7	C	23.8	C	23.9
15. 16th Street / Elkhorn Boulevard	E	Signalized	E	57.6	E	66.5	D	44.8	D	51.7
16. Elkhorn Boulevard / SR 99 Southbound Ramps	D	Signalized	A	3.9	A	3.9	A	4.1	A	4.2
17. Elkhorn Boulevard / SR 99 Northbound Ramps	D	Signalized	A	9.7	A	9.5	B	11.5	A	9.6
18. Del Paso Road / I-5 Southbound Ramps	D	Signalized	A	6.0	A	6.2	A	5.7	A	5.7
19. Del Paso Road / I-5 Northbound Ramps	D	Signalized	A	6.1	B	17.2	A	5.1	C	25.0
20. Truxel Road / I-80 Westbound Ramps	D	Signalized	A	7.7	B	11.0	B	15.9	B	19.4
21. Truxel Road / I-80 Eastbound Ramps	D	Signalized	B	12.1	B	12.3	B	10.4	B	10.6
22. Northgate Boulevard / I-80 Westbound Ramps	D	Signalized	A	6.5	B	19.0	A	9.4	C	29.6
23. Northgate Boulevard / I-80 Eastbound Ramps	D	Signalized	A	6.6	A	9.2	A	8.4	A	9.5
100. Street "K" / Elkhorn Blvd. ¹	D	Unsignalized			A	2.8			B	11.6
101. Street "G" / Elkhorn Blvd. ¹	D	Signalized			C	24.2			D	39.1
102. Street "G" / Sandmark Drive ¹	D	Unsignalized			A	2.4			A	1.5
103. Street "G" / Domino Ave. ¹	D	Unsignalized			A	1.7			A	1.1
104. Street "G" / School Entrance ¹	D	Unsignalized			A	0.8			A	4.0
106. Street "G" / School Exit ¹	D	Unsignalized			A	0.2			A	0.2
107. Street "G" / Main School Driveway ¹	D	Signalized			A	2.3			A	3.4
108. Street "G" / Faletto Avenue ¹	D	Unsignalized			A	1.5			A	1.3
109. Street "D" / Club Center Drive ¹	D	Unsignalized			A	5.5			A	4.8
110. Street "G" / Club Center Drive ¹	D	Roundabout			A	8.1			A	9.0
111. Street "E" / Club Center Drive ¹	D	Unsignalized			A	0.9			A	0.7
112. Sorento Road / Street "F" ¹	D	Unsignalized			A	7.8			A	6.9
113. Club Center Drive / Street "F" ¹	D	Unsignalized			A	1.1			A	1.4
114. Street "D" / Aimwell Avenue ¹	D	Unsignalized			A	8.1			A	7.5
115. Street "E" / Aimwell Avenue ¹	D	Unsignalized			A	6.5			A	4.8

Table 5.11-21 Cumulative Plus Project Intersection Operating Conditions (Year 2036)

Intersection	LOS Criteria	Traffic Control	AM Peak Hour				PM Peak Hour			
			Cumulative		Cumulative Plus Project		Cumulative		Cumulative Plus Project	
			LOS	Delay (Seconds)	LOS	Delay (Seconds)	LOS	Delay (Seconds)	LOS	Delay (Seconds)
116. Club Center Drive / Aimwell Avenue ¹	D	Unsignalized			A	2.8			A	1.5
117. Club Center Drive / Barros Drive ¹	D	Unsignalized			A	4.5			A	5.6
118. Sorento Road / Barros Drive ¹	D	Unsignalized			A	8.4			A	9.7
119. Club Center Drive / Street "B" ¹	D	Unsignalized			A	0.7			A	0.6
120. Club Center Drive / Mayfield Street ¹	D	Unsignalized			A	6.8			A	6.4
121. Street "A" / Club Center Drive ¹	D	Unsignalized			A	0.5			A	0.9
122. Club Center Drive / Street "C" ¹	D	Roundabout			A	5.4			A	5.2
123. Club Center Drive / Del Paso Road ¹	D	Signalized			A	9.9			B	10.2
124. Suburban Center / Del Paso Road ¹	D	Unsignalized			A	2.4			A	9.5
125. Street "C" / Street "B" ¹	D	Unsignalized			A	1.2			A	1.1
126. Street "C" / Street "A" ¹	D	Unsignalized			A	1.8			A	1.7
127. Street "C" / National Drive ¹	D	Roundabout			A	5.3			A	6.2

Source: Data provided by DKS in 2017
¹ Intersections internal to the project.

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KEY

- 31 / 27 = AM / PM peak hour traffic volume
- ⬤ = Signalized intersection
- ↔ = Intersection approach lane
- ⊥ = Stop sign control
- N St. & E St. = North-south street / east-west street

Source: DKS 2017

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Exhibit 5.11-14

Cumulative (2036) Volumes and Geometry



Segments

Table 5.11-21 summarizes the results of the cumulative daily segment analysis.

Table 5.11-22 Cumulative Plus Project Roadway Segment Conditions (Year 2036)

Roadway	Segment	Operational Class	Cumulative				Cumulative Plus Project			
			Lanes	Daily Volume	Volume-to-Capacity Ratio	LOS	Lanes	Daily Volume	Volume-to-Capacity Ratio	LOS
Elkhorn Boulevard	SR 99 to East Commerce Way	Arterial – Moderate Access Control	6	21,800	0.40	A	6	22,700	0.42	A
	East Commerce Way to Northborough Drive		6	27,100	0.50	A	6	27,500	0.51	A
	Northborough Drive to Natomas Boulevard		6	26,000	0.48	A	6	26,400	0.49	A
	Natomas Boulevard to Sageview Drive		6	30,000	0.56	A	6	28,300	0.52	A
	Sageview Drive to E. Levee Road		4	28,900	0.80	D	4	35,400	0.98	E
	E. Levee Road to Marysville Boulevard		4	28,500	0.79	C	4	32,400	0.90	D
Natomas Boulevard	North Bend Drive to Club Center Drive	Arterial – Moderate Access Control	4	28,400	0.79	C	4	29,200	0.81	D
	Club Center Drive to Elkhorn Boulevard		4	15,300	0.43	A	4	13,400	0.37	A
Del Paso Road	Truxel Road to Gateway Park Boulevard	Arterial – Moderate Access Control	6	28,900	0.54	A	6	30,300	0.56	A
	Gateway Park Boulevard to Black Rock Drive		6	28,500	0.53	A	6	35,100	0.65	B
Del Paso Road	Black Rock Drive to National Drive	Arterial – Moderate Access Control	4	27,900	0.78	C	4	26,900	0.75	C
	National Drive to Northgate Boulevard		4	28,000	0.78	C	4	35,300	0.98	E
Northgate Boulevard	Del Paso Road to North Market Boulevard	Arterial – Moderate Access Control	4	24,500	0.68	B	4	29,400	0.82	D
	North Market Boulevard to I-80		6	37,600	0.70	B	6	42,400	0.79	C
Main Avenue	Northgate Boulevard to Norwood Avenue	Arterial – Moderate Access Control	4	27,400	0.76	C	4	28,000	0.78	C
Sageview Drive	Elkhorn Boulevard to Bridgecross Drive	Local Street	2	5,400	1.08	F	2	2,100	0.42	A
Bridgecross Drive	East of Honor Parkway	Minor Collector	2	2,500	0.29	A	2	2,300	0.26	A
Regency Park Circle	North of Club Center Drive	Local Street	2	5,300	1.06	F	2	6,600	1.32	F
Danbrook Drive	South of Club Center Drive		2	6,300	1.26	F	2	7,200	1.44	F
Sorento Road	North of Del Paso Road		2	800	0.16	A	2	5,700	1.14	F
National Drive	Del Paso Road to Street "C"	Major Collector					2	6,300	0.45	A
Club Center Drive	Danbrook Drive to Danbrook Drive	Minor Collector	2	3,200	0.37	A	2	4,300	0.49	A
	West of Street "D" ¹	Major Collector					2	2,400	0.17	A
	Street "D" to Street "G" ¹						2	5,700	0.41	A
	Street "G" to Street "E" ¹						2	7,200	0.51	A
	Street "E" to Street "F" ¹						2	7,300	0.52	A
	Street "F" to Aimwell Avenue ¹						2	6,600	0.47	A
	Aimwell Avenue to Barros Drive ¹						2	8,400	0.60	A
	Barros Drive to Street "C" ¹						2	3,600	0.26	A
	Street "C" to Street "B" ¹						2	2,700	0.19	A
	Street "B" to Mayfield Street ¹						2	2,800	0.20	A
	Mayfield Street to Street "A" ¹						2	7,300	0.52	A
	Street "A" to Del Paso Road ¹						2	9,200	0.66	B
Street "A"	Club Center Drive to Street "C" ¹	Minor Collector					2	800	0.09	A
Street "B"	Club Center Drive to Street "C" ¹	Minor Collector					2	500	0.06	A
Street "C"	Club Center Drive to Street "B" ¹	Minor Collector					2	3,000	0.34	A
	Street "B" to Street "A" ¹						2	3,000	0.34	A

Table 5.11-22 Cumulative Plus Project Roadway Segment Conditions (Year 2036)

Roadway	Segment	Operational Class	Cumulative				Cumulative Plus Project				
			Lanes	Daily Volume	Volume-to-Capacity Ratio	LOS	Lanes	Daily Volume	Volume-to-Capacity Ratio	LOS	
	Street "A" to National Drive ¹						2	3,600	0.41	A	
Street "D"	Club Center Drive to Aimwell Avenue ¹	Local Street					2	3,900	0.78	C	
Street "E"	Club Center Drive to Aimwell Avenue ¹						2	1,000	0.20	A	
Street "F"	Club Center Drive to Sorento Road ¹						2	800	0.16	A	
Street "G"	Elkhorn Boulevard to Sandmark Drive ¹		Major Collector					2	11,000	0.79	C
	Sandmark Drive to Domino Avenue ¹						2	9,200	0.66	B	
	Domino Avenue to Main School Entrance ¹						2	10,200	0.73	C	
	Main School Entrance to Faletto Avenue ¹						2	9,600	0.69	B	
	Faletto Avenue to Club Center Drive ¹						2	10,400	0.74	C	
Street "K"	South of Elkhorn Boulevard ¹	Local Street					2	3,000	0.60	A	
Aimwell Avenue	West of Street "D" ¹	Local Street					2	3,900	0.78	C	
	Street "D" to Street "E" ¹						2	500	0.10	A	
Aimwell Avenue	Street "E" to Club Center Drive ¹						2	800	0.16	A	
Barros Drive	Club Center Drive to Sorento Road ¹						2	4,900	0.98	E	
Cadman Court	East of Archcrest Way ¹						2	500	0.10	A	
Domino Avenue	East of Amnest Way ¹						2	3,600	0.72	C	
Faletto Avenue	West of School South Lot ¹		Minor Collector					2	2,400	0.27	A
	School South Lot to Street "G" ¹							2	1,100	0.13	A
Mayfield Street	West of Club Center Drive ¹	Local Street					2	5,200	1.04	F	
Sandmark Drive	East of Caddington Way ¹						2	500	0.10	A	

Source: Data provided by DKS in 2017

¹ These roadway segments are internal to the project.

Freeway Operations

Table 5.11-23 summarizes the cumulative plus project peak hour freeway mainline levels of service.

Table 5.11-23 Cumulative Plus Project Peak Hour Freeway Mainline Level of Service

Direction	Location	Through Lanes	Aux. Lanes	Mixed-Flow Lanes					
				Cumulative			Cumulative Plus Project		
				Volume	Density	LOS	Volume	Density	LOS
AM Peak Hour									
Eastbound I-80	I-5 to Truxel Road	3	1	5,689	22.7	C	5,690	22.7	C
	Truxel Road to Northgate Boulevard	3	1	5,495	21.8	C	5,495	21.8	C
	Northgate Boulevard to Norwood Avenue	3	0	5,599	34.6	D	5,643	35.0	E
Westbound I-80	I-5 to Truxel Road	3	1	5,231	20.6	C	5,350	21.2	C
	Truxel Road to Northgate Boulevard	3	1	4,687	18.3	C	4,7695	18.7	C
	Northgate Boulevard to Norwood Avenue	3	0	5,180	31.9	D	5,260	32.6	D
Northbound I-5	Arena Boulevard to Del Paso Road	3	1	5,761	25.3	C	5,732	25.2	C
	Del Paso Road to SR 99	3	0	5,465	34.2	D	5,482	34.4	D

Table 5.11-23 Cumulative Plus Project Peak Hour Freeway Mainline Level of Service

Direction	Location	Through Lanes	Aux. Lanes	Mixed-Flow Lanes					
				Cumulative			Cumulative Plus Project		
				Volume	Density	LOS	Volume	Density	LOS
Southbound I-5	Arena Boulevard to Del Paso Road	3	1	6,939	35.1	E	6,877	34.7	D
Southbound I-5	Del Paso Road to SR 99	4	0	5,608	23.8	C	5,555	23.6	C
Northbound SR 99	I-5 to Elkhorn Boulevard	2	0	1,665	13.2	B	1,693	13.5	B
	Elkhorn Boulevard to Elverta Road	2	0	1,602	12.8	B	1,632	13.0	B
Southbound SR 99	I-5 to Elkhorn Boulevard	2	0	4,307	45.7	F	4,276	45.0	F
	Elkhorn Boulevard to Elverta Road	2	0	3,693	34.5	D	3,683	34.4	D
PM Peak Hour									
Eastbound I-80	I-5 to Truxel Road	3	1	5,216	20.6	C	5,346	21.1	C
	Truxel Road to Northgate Boulevard	3	1	5,003	19.6	C	5,075	20.0	C
	Northgate Boulevard to Norwood Avenue	3	0	5,696	34.0	D	5,736	34.4	D
Westbound I-80	I-5 to Truxel Road	3	1	4,434	17.3	B	4,490	17.5	B
	Truxel Road to Northgate Boulevard	3	1	4,620	18.1	C	4,646	18.2	C
Westbound I-80	Northgate Boulevard to Norwood Avenue	3	0	4,736	26.4	D	4,798	26.8	D
Northbound I-5	Arena Boulevard to Del Paso Road	3	1	7,796	37.6	E	7,737	37.1	E
	Del Paso Road to SR 99	3	0	6,450	48.5	F	6,377	47.4	F
Southbound I-5	Arena Boulevard to Del Paso Road	3	1	5,469	23.3	C	5,475	23.3	C
	Del Paso Road to SR 99	4	0	5,025	23.5	C	5,045	23.6	C
Northbound SR 99	I-5 to Elkhorn Boulevard	2	0	4,383	46.8	F	4,317	45.2	F
	Elkhorn Boulevard to Elverta Road	2	0	3,527	34.4	D	3,534	34.5	D
Southbound SR 99	I-5 to Elkhorn Boulevard	2	0	2,181	17.3	B	2,175	17.3	B
	Elkhorn Boulevard to Elverta Road	2	0	2,287	18.2	C	2,285	18.2	C

Source: Data provided by DKS in 2017

Table 5.11-24 summarizes the cumulative plus project peak hour freeway ramp queuing.

Table 5.11-24 Cumulative Plus Project Peak Hour Freeway Ramp Termini Queuing

Direction	Location	Available Storage Length (feet/lane)	Maximum Queue Length (feet/lane)	
			Cumulative	Cumulative Plus Project
AM Peak Hour				
I-80 Eastbound	Truxel Road	810	283	289
	Northgate Boulevard	700	221	239
I-80 Westbound	Truxel Road	1,075	148	150
	Northgate Boulevard	680	74	343
I-5 Northbound	Del Paso Road	690	232	271
I-5 Southbound	Del Paso Road	595	147	152
SR 99 Northbound	Elkhorn Boulevard	915	89	90
SR 99 Southbound	Elkhorn Boulevard	900	81	82

Table 5.11-24 Cumulative Plus Project Peak Hour Freeway Ramp Termini Queuing

Direction	Location	Available Storage Length (feet/lane)	Maximum Queue Length (feet/lane)	
			Cumulative	Cumulative Plus Project
PM Peak Hour				
I-80 Eastbound	Truxel Road	810	217	217
	Northgate Boulevard	700	416	416
I-80 Westbound	Truxel Road	1,075	281	341
	Northgate Boulevard	680	228	641
I-5 Northbound	Del Paso Road	690	264	575
I-5 Southbound	Del Paso Road	595	218	224
SR 99 Northbound	Elkhorn Boulevard	915	624	624
SR 99 Southbound	Elkhorn Boulevard	900	88	89

Source: Data provided by DKS in 2017

Cumulative Plus Project Distribution

Exhibit 5.11-15 illustrates the anticipated future distribution of project traffic.

CUMULATIVE IMPACTS AND MITIGATION MEASURES

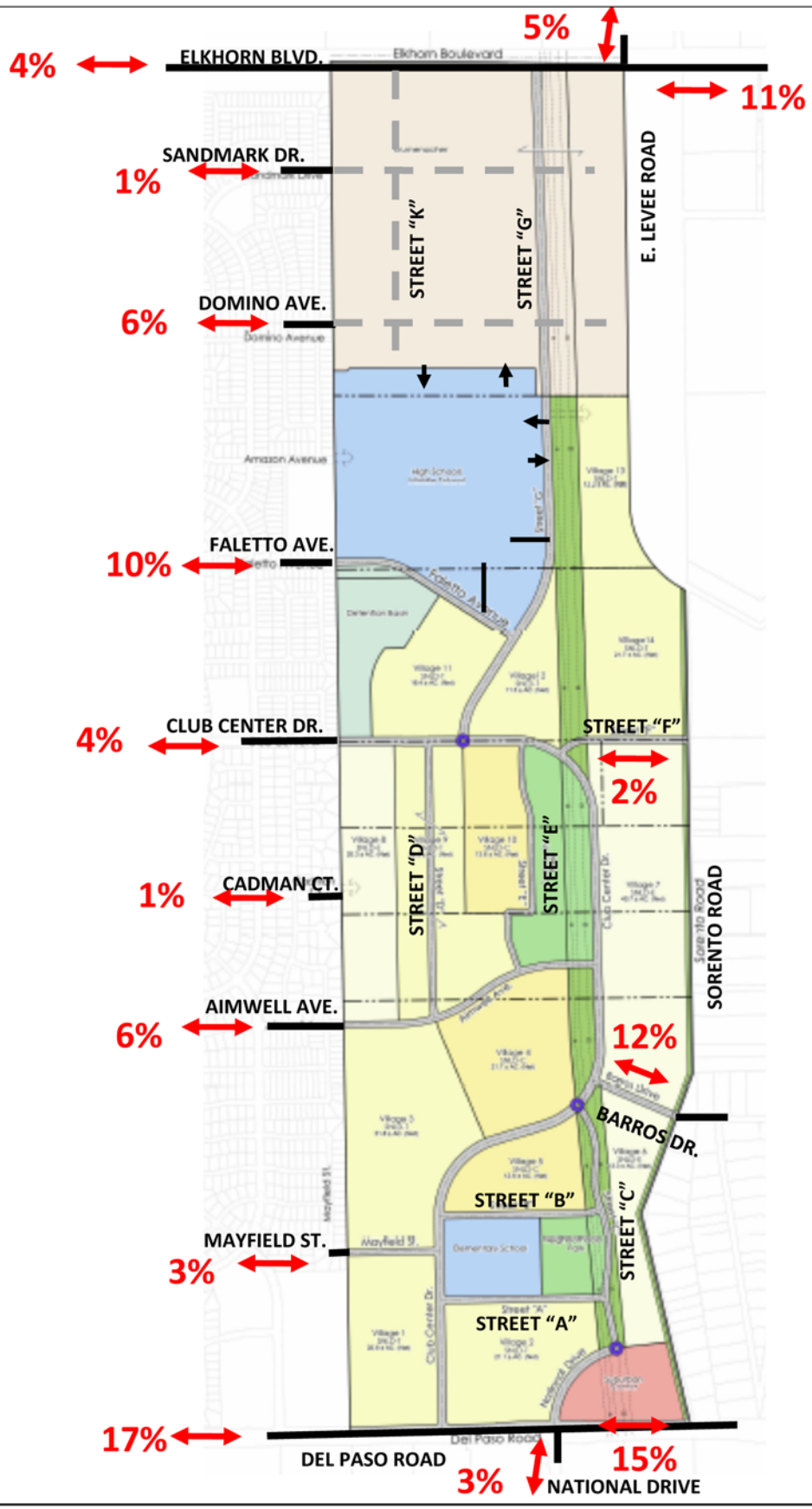
Impact 5.11-9: Cumulative Construction Traffic Impacts

Project traffic from construction activities, in combination with traffic from cumulative development construction activities near the project area, could contribute to significant traffic congestion and disruptions in the area. However, with implementation of the mitigation measures proposed, the project’s contribution to this impact would be reduced to a less than significant level. Therefore, the project’s contribution to cumulative construction impacts **would not be cumulatively considerable**.

As identified in Table 5-2, there are other large-scale development projects (e.g., Natomas North Precinct Master Plan) that could be under construction at the same time as the project that collectively generates substantial construction traffic (trucks, equipment, construction workers, and deliveries) volumes that are disruptive to the local roadway network. Del Paso Road, Sorento Road, Elkhorn Boulevard, Club Center Drive, Mayfield Street, Aimwell Avenue, and Faletto Avenue could all be impacted from cumulative construction activities by the project as well as by other development projects. However, implementation of Mitigation Measure 5.11-1 would mitigate project construction traffic impacts by requiring the development and implementation of a construction management plan that would establish temporary traffic control procedures and prohibit truck traffic on local residential roadways. Therefore, the project **would not have a considerable contribution** related to cumulative construction traffic impacts.

Mitigation Measures

No mitigation is required.



Source: DKS 2017

X16010111 01 024

Exhibit 5.11-15

Daily Trip Distribution, Cumulative (2036) Plus Project



Impact 5.11-10: Cumulative Intersection Operations

The project’s incremental increase in traffic to study intersections, in combination with traffic from cumulative development, would contribute to the deficient operation of the Sorento Road/Del Paso Road intersection. However, with implementation of the mitigation measures proposed, the project’s contribution to this impact would be reduced to a less than significant level. Therefore, the project’s contribution to cumulative intersection operation impacts **would not be cumulatively considerable**.

Table 5.11-21 summarizes the results of the cumulative plus project peak hour intersection analysis. Exhibits 5.11-16, 5.11-17, and 5.11-18 shows cumulative plus project traffic volumes. Intersection LOS exceeding significance thresholds are shown in bold font.

As summarized in Table 5.11-22, under the cumulative plus project scenario, project generated traffic would result in a degradation of operating conditions to unacceptable levels at the following intersection:

- ▲ Sorento Road / Del Paso Road –Project generated traffic would result in a change from LOS A to LOS E or F conditions in the peak hours.

Mitigation Measure 5.11-2 will require the project to install a traffic signal at the intersection of Sorento Road / Del Paso Road before deficient operation of the intersection. As shown in Table 5.11-25, implementation of this mitigation measure would mitigate cumulative traffic conditions provide acceptable level of service operations. Therefore, the project **would not have a considerable contribution** related to cumulative intersection operations.

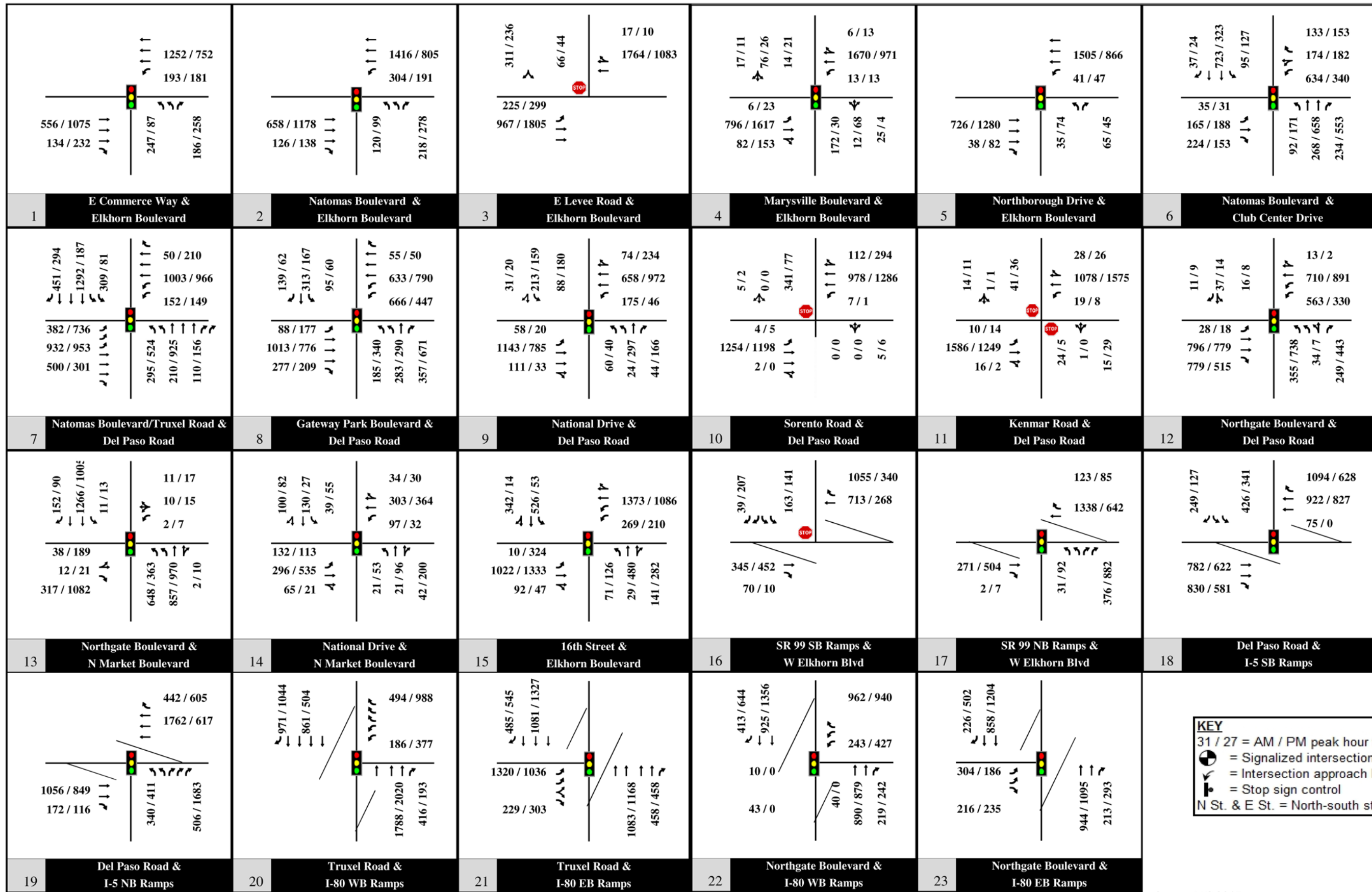
Table 5.11-25 Cumulative Plus Project Intersection Operating Conditions Without and With Mitigation

Intersection	LOS Criteria	Traffic Control	AM Peak Hour				PM Peak Hour			
			Cumulative		Cumulative Plus Project		Cumulative		Cumulative Plus Project	
			LOS	Delay (Seconds)	LOS	Delay (Seconds)	LOS	Delay (Seconds)	LOS	Delay (Seconds)
Without Mitigation										
10. Sorento Road / Del Paso Road	D	Unsignalized	A	0.7	F	125.9	A	0.7	E	42.8
With Mitigation										
10. Sorento Road / Del Paso Road	D	Signalized			B	11.3			A	7.9

Source: Data provided by DKS in 2017

Mitigation Measures

No mitigation is required.



KEY

- 31 / 27 = AM / PM peak hour traffic volume
- = Signalized intersection
- = Intersection approach lane
- = Stop sign control
- N St. & E St. = North-south street / east-west street

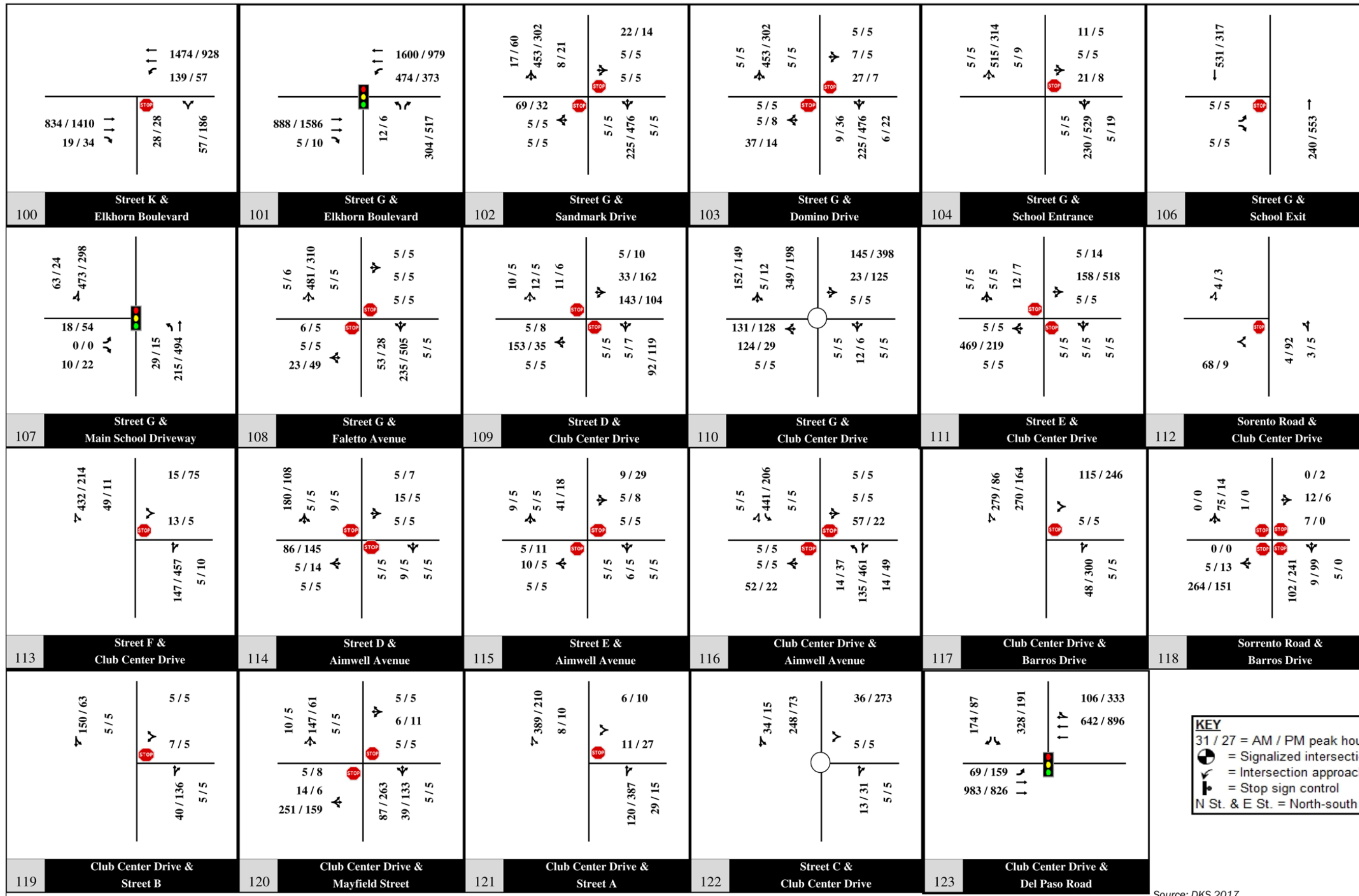
Source: DKS 2017

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Exhibit 5.11-16

Cumulative (2036) Plus Project Volumes and Geometry





KEY

- 31 / 27 = AM / PM peak hour traffic volume
- ⦿ = Signalized intersection
- ↔ = Intersection approach lane
- ⊥ = Stop sign control
- N St. & E St. = North-south street / east-west street

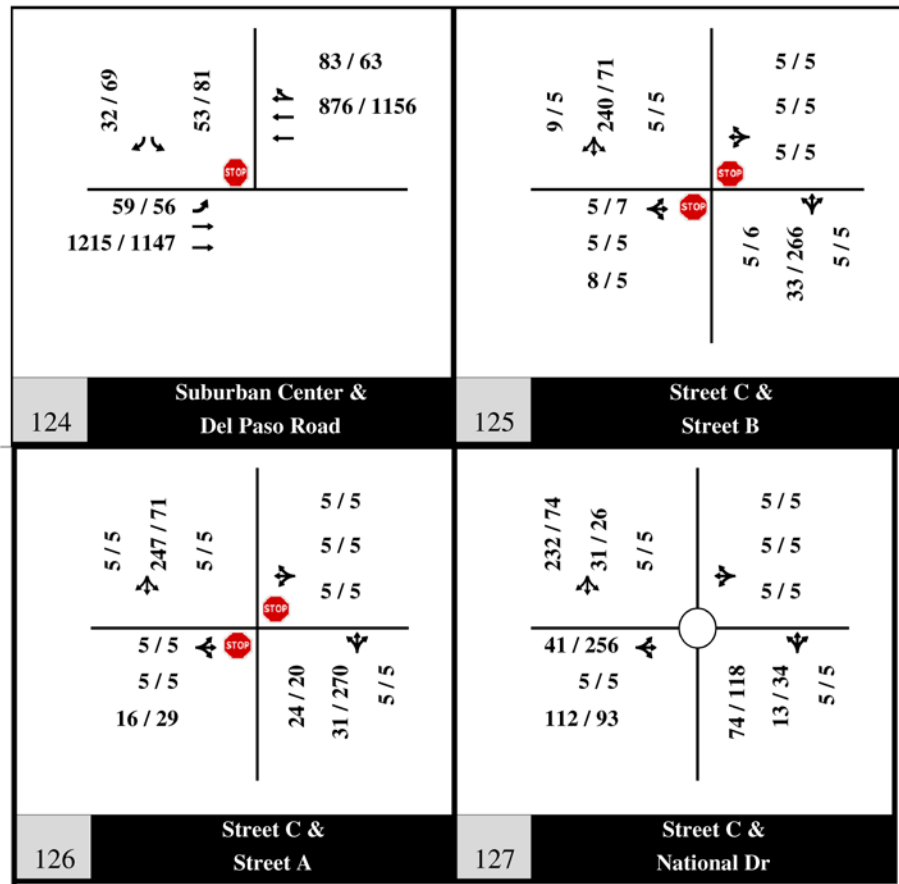
Source: DKS 2017

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Exhibit 5.11-17

Cumulative (2036) Plus Project Volumes and Geometry





KEY

- 31 / 27 = AM / PM peak hour traffic volume
- ⊙ = Signalized intersection
- ↔ = Intersection approach lane
- ⊥ = Stop sign control
- N St. & E St. = North-south street / east-west street

Source: DKS 2017

X16010111 01 027

Impact 5.11-11: Cumulative Roadway Segment Operations

The project's incremental increase in traffic to study roadway segments, in combination with traffic from cumulative development, would result in deficient level of service operations. Overall, cumulative impacts to roadway segment operations would be significant and the project's contribution would be **cumulatively considerable**.

Table 5.11-22 summarizes the results of the cumulative plus project roadway segment analysis. Roadway segment LOS exceeding significance thresholds are shown in bold font.

As summarized in Table 5.11-22, under the cumulative plus project scenario, project generated traffic would result in a degradation of operating conditions to unacceptable levels along the following roadway segments:

- ▲ Elkhorn Boulevard – Sageview Drive to East Levee Road – Project generated traffic would result in LOS E conditions.
- ▲ Regency Park Circle – North of Club Center Drive - Project generated traffic would result in LOS F conditions and an increase in volume-to-capacity ratio of 0.02 or greater.
- ▲ Danbrook Drive – South of Club Center Drive - Project generated traffic would result in LOS F conditions and an increase in volume-to-capacity ratio of 0.02 or greater.
- ▲ Sorento Road – North of Del Paso Road - Project generated traffic would result LOS F conditions.
- ▲ Barros Drive – Sorento Road to Club Center Drive - Project generated traffic would result in LOS F conditions on the proposed roadway.
- ▲ Mayfield Street – West of Club Center Drive - Project generated traffic would result in LOS F conditions on the proposed roadway.

As identified in under Impact 5.11-3, implementation of Mitigation Measure 5.11-3b would propose the implementation of neighborhood traffic management plans for the segments along Regency Park Circle, Danbrook Drive, and Sorento Road experiencing deficient operations consistent with General Plan Policy M 4.3.2 on the provision of traffic calming measures. However, the traffic volume reductions associated with these plans are uncertain. Widening of these roadways are considered infeasible as it would require right-of-way acquisition from adjoining residential areas and would conflict with General Plan policies that promote pedestrian and bicycle usage (policies M 1.2.1, M 2.1.3, M 4.2.2, and M 4.3.2). No mitigation measure has been identified for the deficient roadway segment along Barros Drive and Mayfield Street. The intersections along these roadway segments would function at an acceptable level of service without the need for further widening. In accordance with General Plan policies to promote non-automotive modes of travel, no widening of Barros Drive and Mayfield Street is proposed. No alternative mitigation measure in accordance with General Plan Policy M 1.2.2 has been identified.

Mitigation Measure 5.11-11: Cumulative roadway segment improvements to Elkhorn Boulevard.

The project developer shall implement the following measures within the within the study area:

- ▲ Elkhorn Boulevard – Sageview Drive to East Levee Road – Widen to six lanes. This improvement will be incorporated in the project's public facilities financing plan for fair-share contribution and in place before deficient operation.

Table 5.11-26 summarizes cumulative plus project roadway segment conditions with mitigation.

Table 5.11-26 Cumulative Plus Project Roadway Segment Conditions Without and With Mitigation

Roadway	Segment	Operational Class	Cumulative				Cumulative Plus Project			
			Lanes	Daily Volume	Volume-to-Capacity Ratio	LOS	Lanes	Daily Volume	Volume-to-Capacity Ratio	LOS
Without Mitigation										
Elkhorn Boulevard	Sageview Drive to E. Levee Road	Arterial - Moderate Access Control	4	28,900	0.80	D	4	35,400	0.98	E
With Mitigation										
Elkhorn Boulevard	Sageview Drive to E. Levee Road	Arterial - Moderate Access Control					6	35,400	0.66	B

Source: Data provided by DKS in 2017

Significance after Mitigation

Elkhorn Boulevard

As shown in Table 5.11-26, with the implementation of Mitigation Measure 5.11-6 would reduce the impact of project generated traffic along Elkhorn Boulevard in the study area to an acceptable LOS and would decrease the volume-to-capacity ratio. The environmental impacts of widening of Elkhorn Boulevard from a two-lane to a four- to six-lane facility was programmatically evaluated as part of the City of Sacramento 2035 General Plan implementation in the City of Sacramento 2035 General Plan Update Master EIR. Implementation of Mitigation Measure 5.11-6 would offset the project's contribution to this cumulative impact by improving Elkhorn Boulevard's LOS operation and result in a **less than cumulatively considerable** impact.

Regency Park Circle, Danbrook Drive, Sorento Road, Barros Drive, and Mayfield Street

There is no feasible mitigation available to offset the level of service impacts to Regency Park Circle, Danbrook Drive, Sorento Road, Barros Drive, and Mayfield Street. The project's contribution to cumulative impacts related to deficient operation of these roadways is considered **cumulatively considerable and significant and unavoidable**.

Impact 5.11-12: Cumulative Freeway Operations

The proposed project's incremental increase in traffic to freeway segments, in combination with traffic from cumulative development, would not result in deficient level of service operations. This is a less-than-significant cumulative impact and the project's traffic contribution **would not be considerable** such that new significant cumulative impact would occur

Table 5.11-23 summarizes the cumulative plus project peak hour freeway mainline levels of service, while Table 5.11-24 summarizes the cumulative plus project peak hour freeway ramp queuing. As shown in Table 5.11-23, segments of SR-99 and I-5 would operate at deficient level of service (LOS F) under cumulative conditions. The project's traffic contribution would not trigger any additional deficient level of service operations or substantially worsen level of service operations for SR-99 and I-5. As shown in Table 5.11-23, the project's traffic contribution would also not trigger any ramp terminus queuing beyond the available storage area under cumulative conditions.

Because the project's contribution to cumulative traffic conditions on freeway facilities would not trigger additional cumulative operational impacts, no significant cumulative impacts would occur and the project's cumulative demands **would not be considerable**.

Mitigation Measures

No mitigation necessary.

Impact 5.11-13: Cumulative Demand for Bicycle Facilities

The project, in combination with cumulative development in the North Natomas area, would further increase bicycle usage and the demand for bicycle facilities. However, with implementation of the project design includes new on-street and off-street bicycle facilities that would interconnect with existing and planned facilities, the project's contribution to this impact would be reduced to a less than significant level. Therefore, the project's contribution to cumulative bicycle facility demand impacts **would not be cumulatively considerable**.

Further development in the North Natomas area (e.g., Greenbriar and the Natomas North Precinct Master Plan) would increase the number of bicyclists and the demand for new and expanded bicycle facilities and connections through the region. As described in Impact 5.11-5, the project would not disrupt or interfere with existing or planned bicycle facilities; rather, it would improve the existing infrastructure and create a bicycle network and interconnections within the North Natomas Community Plan area, including the development of the Ninos Parkway. Thus, the project **would not have a considerable contribution** to cumulative impacts of bicycle facility needs.

Mitigation Measures

No mitigation required.

Impact 5.11-14 Cumulative Demand for Pedestrian Facilities

The project, in combination with cumulative development in the North Natomas area, would further increase pedestrian activity and the demand for new on-street and off-street pedestrian facilities. However, with implementation of the project design includes new on-street sidewalks and off-street trails that would interconnect with existing and planned pedestrian facilities, the project's contribution to this impact would be reduced to a less than significant level. Therefore, the project's contribution to cumulative pedestrian facility demand impacts **would not be cumulatively considerable**.

Further development in the North Natomas area (e.g., Natomas North Precinct Master Plan) would increase pedestrian usage and the demand for new and expanded pedestrian facilities and connections through the North Natomas area. As described in Impact 5.11-6, the project would not disrupt or interfere with existing or planned pedestrian facilities; rather, it would improve the existing infrastructure and create an on-street and off-street pedestrian network and interconnections within the North Natomas Community Plan area, including the development of the Ninos Parkway. Thus, the project **would not have a considerable contribution** to cumulative impacts of pedestrian facility needs.

Mitigation Measures

No mitigation required.

Impact 5.11-15: Cumulative Transit Impacts

The project's incremental increase in area population would increase the demand for transit services, in combination with demands from cumulative development, would contribute to cumulative transit service impacts. However, with implementation of the mitigation measures proposed, the project's contribution to this impact would be reduced to a less than significant level. Therefore, the project's contribution to cumulative transit service impacts **would not be cumulatively considerable**.

Mitigation Measure 5.11-7 will require the project to join the North Natomas Transportation Management Association and will coordinate on feasible measures to provide transit information and services to project residents that is phased with development and transit demand that would address project transit impacts. Therefore, the project **would not have a considerable contribution** related to cumulative transit service impacts.

Mitigation Measures

No mitigation required.

Impact 5.11-16: Impair Emergency Vehicle Access and Hazardous Design Features under Cumulative Conditions

The project, in combination with cumulative development in the North Natomas area, would further increase potential roadway hazards and increase the need for new emergency access routes. However, the project would not interfere with emergency response; rather, it would enhance emergency access, and be designed to meet all the design and safety standards. Therefore, the project's contribution to cumulative roadway hazards and the need for new emergency access impacts **would not be cumulatively considerable**.

Further development in the North Natomas area (e.g., Natomas North Precinct Master Plan) would the population and vehicle use in the area that could generate roadway hazards and would require the provision of new emergency access routes. As described in Impact 5.11-8, the project would provide new roadway improvements and connections in the project area that would enhance emergency access and would not interfere with emergency response. Additionally, the project would be designed to meet all the design and safety standards established by the City, and would provide adequate site distances and access for vehicles entering and leaving the site. Thus, the project **would not have a considerable contribution** to cumulative impacts associated traffic hazards or emergency access.

Mitigation Measures

No mitigation required.

5.11.5 Cumulative (Post-2036) Analysis

As identified above in Section 5.11.4, cumulative traffic analysis utilizes growth anticipated to be in place by the year 2036 based on land use projections in the SACOG 2016 MTP/SCS database. However, this does not factor build-out of several large-scale development projects (Natomas North Precinct Master Plan, Placer Vineyards, Regional University, Sierra Vista, and Sutter Pointe [see Table 5-2 for details on these projects]) in the region that are anticipated to impact roadway facilities some time beyond the year 2036. It would be inappropriate to include this growth in the year 2036 cumulative analysis, because the exact timing of when these projects would reach build-out is not currently known.

However, because the development potential of these large-scale development projects is large, this EIR includes a disclosure of the potential traffic increases beyond the year 2036. Table 5.11-27 summarizes the additional development potential of these projects beyond the year 2036, which includes approximately 50,000 additional households, and 61,000 additional jobs. The Regional University also assumes an increase of about 3,300 students to 6,000 in the post-2036 scenario.

Table 5.11-27 Cumulative (Post-2036) Development Land Use Estimates

Development Project	Cumulative (2036)		Cumulative (Post-2036)	
	Households	Employment	Households	Employment
Natomas North Precinct Master Plan	32	435	20,477	24,512
Placer Vineyards	4,581	1,499	14,132	11,135
Regional University	1,594	381	4,387	1,348
Sierra Vista	6,000	3,500	8,357	4,512
Sutter Pointe	2,848	2,995	17,500	28,254
Total	15,055	8,810	64,853	69,761

Source: Data provided by DKS in 2017

See Table 5-2 for further description of these development projects.

The post-2036 scenario also includes many transportation improvements to accommodate the major growth districts. These improvements include:

- ▲ Placer Parkway - SR 65 to SR 99 (six lanes)
- ▲ SR 99 – I-5 to Sankey Road (six lanes)
- ▲ Riego Road in Sutter County (six to eight lanes)
- ▲ Baseline Road – Sutter County to Watt Avenue (six lanes)
- ▲ Watt Avenue – Elverta Road to Baseline Road (six lanes)
- ▲ Elverta Road – SR 99 to Rio Linda Boulevard (four lanes)
- ▲ Walerga Road – North Loop Boulevard to Baseline Road (four lanes)
- ▲ Fiddymment Road – Baseline Road to Pleasant Grove Boulevard (six lanes)
- ▲ Lone Tree Road – Meister Way to Elverta Road (four lanes)

Table 5.11-28 summarizes the cumulative (post-2036) plus project daily traffic volumes and LOS on several selected roadways in the study area.

Table 5.11-28 Cumulative Plus Project Roadway Segment Conditions

Roadway	Segment	Operational Class	Cumulative (2036) Plus Project				Cumulative (Post-2036) Plus Project			
			Lanes	Daily Volume	Volume-to-Capacity Ratio	LOS	Lanes	Daily Volume	Volume-to-Capacity Ratio	LOS
Elkhorn Boulevard	SR 99 to East Commerce Way	Arterial – Moderate Access Control	6	22,700	0.42	A	6	49,300	0.91	E
	East Commerce Way to Northborough Drive		6	27,500	0.51	A	6	57,200	1.06	F
	Northborough Drive to Natomas Boulevard		6	26,400	0.49	A	6	42,600	0.79	C
	Natomas Boulevard to Sageview Drive		6	28,300	0.52	A	6	41,100	0.76	C
	Sageview Drive to E. Levee Road		4	35,400	0.98	E	6	48,000	0.89	D
	E. Levee Road to Marysville Boulevard		4	32,400	0.90	D	4	39,200	1.09	F
Natomas Boulevard	North Bend Drive to Club Center Drive		4	29,200	0.81	D	4	31,900	0.89	D
	Club Center Drive to Elkhorn Boulevard		4	13,400	0.37	A	4	16,600	0.46	A
Del Paso Road	Truxel Road to Gateway Park Boulevard		6	30,300	0.56	A	6	31,900	0.59	A
	Gateway Park Boulevard to Black Rock Drive	6	35,100	0.65	B	6	36,600	0.68	B	

Table 5.11-28 Cumulative Plus Project Roadway Segment Conditions

Roadway	Segment	Operational Class	Cumulative (2036) Plus Project				Cumulative (Post-2036) Plus Project			
			Lanes	Daily Volume	Volume-to-Capacity Ratio	LOS	Lanes	Daily Volume	Volume-to-Capacity Ratio	LOS
Del Paso Road	Black Rock Drive to National Drive	Arterial – Moderate Access Control	4	26,900	0.75	C	4	36,900	1.03	F
	National Drive to Northgate Boulevard		4	35,300	0.98	E	4	40,500	1.13	F
Northgate Boulevard	Del Paso Road to North Market Boulevard		4	29,400	0.82	D	4	32,000	0.89	D
	North Market Boulevard to I-80		6	42,400	0.79	C	6	47,000	1.31	F
Main Avenue	Northgate Boulevard to Norwood Avenue		4	28,000	0.78	C	4	32,200	0.89	D
Club Center Drive	Danbrook Drive to Danbrook Drive	Minor Collector	2	4,300	0.49	A	2	3,600	0.41	A
	Street “A” to Del Paso Road	Major Collector	2	9,200	0.66	B	2	8,400	0.60	A
National Drive	Del Paso Road to Street “C”		2	6,300	0.45	A	2	5,700	0.41	A
Street “G”	Elkhorn Boulevard to Sandmark Drive		2	11,000	0.79	C	2	11,000	0.79	C

Source: Data provided by DKS in 2017

As shown in Table 5.11-28, post-2036 cumulative conditions are anticipated to result in deficient traffic operations on Elkhorn Boulevard, Del Paso Road, and Northgate Boulevard. The ability to address these anticipated post-2036 deficient operations is tied to fair share participation to regional transportation improvement programs, but these programs to address post-2036 conditions are not currently available. Further, in some instances, some improvements that are not financially feasible and/or would require right-of-way acquisition may not be available. It is suggested that the City of Sacramento and Sacramento, Sutter, and Placer counties consider a regional transportation fee program to fund regional improvements for post-2036 conditions to the degree feasible.

5.11.6 Vehicle Miles Traveled

INTRODUCTION

Senate Bill (SB) 743 was signed into law on September 27, 2013. Among other things, SB 743 creates a process to change the way transportation impacts are analyzed under CEQA. SB 743 adds Chapter 2.7, Modernization of Transportation Analysis for Transit-Oriented Infill Projects, to Division 13 (Section 21099) of the Public Resources Code. SB 743 started a process that could change the way transportation impacts are analyzed under CEQA. These changes will shift agencies away from using auto delay, level of service, and other similar measures of vehicular capacity or traffic congestion as a basis for determining significant traffic impacts in California. SB 743 includes amendments that allow cities and counties to opt out of traditional level of service standards where congestion management programs are used and requires the state Office of Planning and Research (OPR) to update the CEQA Guidelines and establish “criteria for determining the significance of transportation impacts of projects within transit priority areas.” As part of the new CEQA Guidelines, the new criteria “shall promote the reduction of greenhouse gas emissions, the development of multimodal transportation networks, and a diversity of land uses.”

The OPR released for public review the Revised Proposal on Updates to the CEQA Guidelines on Evaluating Transportation Impacts in CEQA on January 20, 2016. The public comment period ended on February 29, 2016. The revised proposal currently proposes the use of VMT as a metric for evaluating traffic impacts. Once the final draft of changes to the CEQA Guidelines is published, certification and adoption by the

Secretary for Resources will be required before the amendments go into effect. Cities will then have two years to implement the new guidelines.

These updates to the CEQA Guidelines had not been completed as of the release of the Notice of Preparation for this project. However, the City of Sacramento has elected to disclose an analysis of the project's VMT.

PROJECT ANALYSIS OF VEHICLE MILES TRAVELED

Travel forecasting for the project transportation analysis was conducted with the use of SACOG's SACSIM travel model. SACSIM is a complete travel demand model that SACOG uses for planning in the Sacramento region. The demand for personal travel within the region is modeled by DaySim, an activity-based demand model. DaySim incorporates a variety of model features, including

- ▲ The ability to model each person in the Sacramento region separately through the use of a population synthesizer that creates a synthetic population representing each person and household in the region;
- ▲ The ability to model the complete daily activity pattern for each individual, including the number and sequencing of activities defined by seven purposes;
- ▲ A series of logit destination, mode, and time-of-day choice models at the tour and trip levels to simulate the choices for each individual;
- ▲ Estimation of the start and end times of all activities and trips to the half-hour level of resolution; and
- ▲ Parcel-level spatial resolution for home and activity locations.

Other components of SACSIM are used to model, at an aggregate level, the remaining components of regional travel - including travel into, out of, and through the region (external travel); truck travel; and travel to and from Sacramento International Airport.

All travel into, out of, and within the project area is estimated by the model. The model predicts the number of trips, trip purposes, origins and destinations of trips, time of day of the trips, travel mode (walk, bike, transit, automobile), and travel path. Project-specific factors that are considered in the model include:

- ▲ Demographics of the households (income levels, household size, number of workers, auto ownership, etc.) – assumed to be similar to adjacent North Natomas neighborhoods.
- ▲ Characteristics of the schools (number of students, typical number of employees).
- ▲ Characteristics of the commercial center (number of employees by type) – assumed to be retail oriented.
- ▲ Roadway network – connections to existing roadway system, number of lanes, free-flow travel speeds.
- ▲ Pedestrian network.
- ▲ Bicycle network, on-street and off-street.
- ▲ Development patterns (grid connectivity).

The SACSIM regional travel model was utilized to estimate regional VMT with and without the project. The estimated change in daily VMT is the result of the project. The change in VMT is a result of many factors, including:

- ▲ Travel characteristics associated with the project land use:

- Person trip generation
 - Mode choice (motor vehicle [SOV, HOV], transit, walk, bike)
 - Trip origins and destinations (trip length)
- ▲ Redistribution of regional trips associated with new land use (residences, schools, commercial development)
 - ▲ Network effects:
 - Availability of new roadways associated with the project
 - Change in roadway travel speeds associated with changes in traffic volumes.

As shown in Table 5.11-29, the project is estimated to increase daily VMT by 142,246.

Table 5.11-29 Estimated Project VMT

Roadway Type	Regional Daily Vehicle Miles Travelled		
	Existing	Existing Plus Project	Difference
Freeways and Rural Roads	33,632,214	33,682,030	49,816
Urban Streets	24,622,056	24,714,487	92,430
Total	58,254,270	58,396,516	142,246

Source: Data provided by DKS in 2017

5.11.7 Project Circulation Recommendations

Quantitative analysis of traffic operations for the project, consisting of intersection and street segment operations, were described earlier in this report. The project circulation plan (street network) was reviewed for conformity with general transportation engineering principles. It should be noted that at this stage of planning, the project plans do not detail specific locations for local residential streets and driveways. Similarly, no plan for the commercial center is available.

Based upon the review, the following items are recommended:

- ▲ Intersection spacing of the streets shown on the plan appears to be adequate to meet City design guidelines and general engineering principles. As individual villages are designed, care should be given to provide an access design with proper intersection and driveway spacing, as well as allowing convenient pedestrian and bicycle circulation in multiple directions. Pedestrian and bicycle travel through and between villages should be encouraged.
- ▲ The access plan for the East Natomas Education Complex was assumed as a given for purposes of analysis. The only assumed change is the extension of Faletto Avenue across the southern edge of the school site. The following recommendations are made:
 - Reduce the number of access points to National Drive. The area of the East Lot includes a one-way entrance driveway, a one-way exit driveway, and a pedestrian walk to Street "G." The access plan should consider how access will be provided to Village 13 and 14 opposite the school, with emphasis on aligning pedestrian and vehicular access.
 - In accordance with the school plan, a traffic signal has been assumed at the main school entrance (intersection 107). Pedestrian access should be oriented to this location to provide safe crossing of Street "G" with pedestrian traffic signal control.

- Provide pedestrian and bicycle access to North Natomas via Amazon Avenue.
- ▲ In accordance with General Plan Policy M 4.1.6, roundabouts are planned at three locations. It is expected that they will operate efficiently and safely. It is suggested that another roundabout be considered on Street “G” north of the school site as the Krumenacher property is developed, potentially at intersection 103 (Domino Avenue).
- ▲ The Class 1 (off-street) bikeway along the powerline crosses the commercial center, terminating at a mid-block location along Del Paso Road. It is recommended that this bikeway follow National Drive between Del Paso Road and intersection 127. Thus, bicyclists are oriented to a signalized crossing of Del Paso Road, with access to National Drive to the south.

5.11.8 Project Phasing Analysis

A phasing analysis was conducted to determine the relationship between development on the project site and necessary roadway connections, improvements, and mitigation measures. The phasing analysis is based upon the addition of phased project traffic to existing conditions.

For analysis purposes, it was necessary to assume a phasing pattern for the project. Development is assumed to begin on the south end of the project adjacent to Del Paso Road, and then proceed northerly. Table 5.11-30 summarizes the assumed project phasing.

Table 5.11-30 Assumed Project Phasing

Phase	Development Component	Number of Units	Daily Vehicle Trip-Ends	Percentage of Total Daily Vehicle Trip-Ends
1	Villages 1 through 14	1,816	11,463	41%
	Elementary School	500 students	1,263	5%
	Commercial Development	101,277 square feet	4,399	16%
	<i>Subtotal</i>		17,125	62%
	East Natomas Education Complex	2,800 students	5,110	18%
	Krumenacher Ranch	844 dwelling units	5,392	20%
Total			27,627	100%

Source: Data provided by DKS in 2017

With the development of Phase 1, it was assumed that Street “G” would be constructed northerly from Club Center Drive to Village 14, but would not be extended northerly to Elkhorn Boulevard. Street connections to the west to North Natomas and to the east to Sorento Road would occur as adjacent project components are developed.

The phasing of necessary roadway connections, improvements, and mitigation measures is based upon ensuring that traffic conditions with phased development are no worse than anticipated with full development of the project. Table 5.11-31 summarizes the results of the analysis.

Table 5.11-31 Phased Transportation Improvements

Transportation Element	When Required
Extension of Street "G" to Elkhorn Boulevard	Opening of High School and / or Middle School and /or Development on K-Property
Widening - Elkhorn Boulevard - Northborough Drive to East Levee Road - 4 lanes	Extension of Street "G" to Elkhorn Boulevard
Widening - Elkhorn Boulevard - East Levee Road to Marysville Boulevard - 4 lanes	Extension of Street "G" to Elkhorn Boulevard and 20% of total daily vehicle trip-ends
Widening - Elkhorn Boulevard - East Commerce Way to Northborough Drive - 4 lanes	Extension of Street "G" to Elkhorn Boulevard and 40% of total daily vehicle trip-ends
Widening - Elkhorn Boulevard - SR 99 to East Commerce Way - 4 lanes	Extension of Street "G" to Elkhorn Boulevard and 55% of total daily vehicle trip-ends
Neighborhood Traffic Management Plan - Regency Park Circle north of Club Center Drive	Project Connection to Club Center Drive
Neighborhood Traffic Management Plan - Danbrook Drive south of Club Center Drive	Project Connection to Club Center Drive and / or Aimwell Avenue
Neighborhood Traffic Management Plan - Sorento Road north of Del Paso Road	Any project connection to Sorento Road
Traffic Signal - Elkhorn Boulevard / Street "G"	Extension of Street "G" to Elkhorn Boulevard
Traffic Signal Modifications - Del Paso Road / National Drive	Opening of National Drive at Del Paso Road
Traffic Signal - Del Paso Road / Club Center Drive	Opening of Club Center Drive at Del Paso Road

Source: Data provided by DKS in 2017

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5.12 URBAN DESIGN AND VISUAL RESOURCES

This section describes the visual character of the project and the surrounding area and addresses aesthetic impacts associated with the development of the project area with suburban land uses. The analysis is based on field review of the project area and review of pertinent City development and urban design standards.

The following comments were received in response to the Notice of Preparation (see Appendix A) that are addressed in this section:

- ▲ compatibility with the rural development conditions of the Valley View Acres community, and
- ▲ cumulative visual impacts.

5.12.1 Concepts Related to Scenic Resources

Scenic or visual resources are generally defined as both the natural and built features of the landscape that contribute to the experience and appreciation of the environment by the general public. Depending on the extent to which a project would adversely alter the perceived visual character and quality of the environment, a visual or scenic impact may occur.

Assessment of visual changes and determining the degree to which they are considered adverse are highly subjective. One person may conclude that any change in a pleasing visual setting is adverse. Others may find the same changes to be acceptable or even an improvement. Further, there are few formal tools available to evaluate changes to the visual environment and conclude significance. This EIR uses certain terms and concepts, described below, to aid the reader in understanding the content of this chapter. These terms and definitions are general in nature; however, they draw upon the methodologies of the U.S. Department of Agriculture, Forest Service (USFS) and Federal Highway Administration, two of the relatively few public agencies that have formalized visual resource assessment.

VISUAL QUALITY

Visual quality is defined as the overall visual impression or attractiveness of an area as determined by the particular landscape characteristics, including landforms, rock forms, water features, and vegetation patterns. The attributes of line, form, and color combine in various ways to create landscape characteristics whose variety, vividness, coherence, uniqueness, harmony, and pattern contribute to the overall visual quality of an area.

The visual quality of a particular view is based on using three primary criteria: vividness, intactness, and unity. These three criteria are defined as follows:

- ▲ vividness is the visual power or memorability of the landscape components as they combine in striking and distinctive visual pattern.
- ▲ intactness is the visual integrity of the landscape and its freedom from atypical encroaching elements. If all of the various elements of a landscape seem to “belong” together, there will be a high level of intactness. Visual intrusions are typically artificial features that reduce the intactness of a view.
- ▲ unity is the visual harmony of the landscape considered as a whole. Unity represents the degree to which the visual elements maintain a coherent visual pattern.

The visual quality of a particular scene or viewpoint is also judged within the context of the general visual character of an area. Therefore, visual quality can be described according to three levels:

- ▲ indistinctive, or industrial: generally lacking in natural or cultural visual resource amenities typical of the region;
- ▲ representative: typical or characteristic of the region's natural and cultural visual amenities; and
- ▲ distinctive: unique or exemplary of the region's natural or cultural scenic amenities.

Viewpoints with exceptionally high visual quality may be a scenic vista. A scenic vista is generally considered to be a location from which the public can experience unique and exemplary high-quality views—often from elevated vantage points that offer panoramic views of great breadth and depth.

VIEWER GROUPS

Viewer groups are differentiated by physical factors that modify perception, such as location, activities, and awareness or concern. Activities such as driving for commuting, shopping, or working can distract the observer from the visual environment. On the other hand, activities such as driving for pleasure, engaging in recreational pursuits like hiking or relaxing in scenic surroundings can heighten awareness of visual surroundings. Viewer groups may also be differentiated by levels of concern regarding changes to the visual environment; viewers who are very familiar with surroundings, such as residents or frequent visitors are more aware of adverse changes than viewers who are passing through an area on an infrequent basis.

VIEWER EXPOSURE

Viewer exposure addresses the variables that affect viewing conditions of potentially modified views resulting from the project. Viewer exposure considers the following factors:

- ▲ landscape visibility – the ability to see the potentially modified portion of the landscape;
- ▲ viewing distance – the proximity of viewers to the modified view;
- ▲ viewing angle – whether the project would be viewed from above (superior), below (inferior), or from a level (normal) line of sight;
- ▲ extent of visibility – whether the line of sight is open and panoramic to the project area or restricted by terrain, vegetation and/or structures; and
- ▲ duration of view – the elapsed time the project area would be visible to a particular viewer.

For purposes of analysis, landscapes are separated into foreground, middleground, and background views. In general, the foreground is characterized by clear details (from immediate foreground to within 0.5 mile of the viewer); the middleground is characterized by the loss of clear detail in a landscape, creating a uniform appearance (from the foreground to 4 miles in the distance); and the background extends from the middleground to the limit of human sight.

Generally, the closer a resource is to the viewer, the more dominant, and thus the more visually important it is to the viewer. However, middleground views can be of longer duration and provide viewers with more context and coherency than do foreground views.

VIEWER SENSITIVITY

Viewer sensitivity is the overall measure of the degree to which potential viewers would be sensitive to adverse visual changes in an existing landscape. Viewer sensitivity is evaluated based on the viewer exposure to the visual resource, the existing visual quality, the frequency and duration of views, the number of viewers, and the type and expectations of individuals and viewer groups. People in different visual settings, typically characterized by different land uses near a project, have varying degrees of sensitivity to

changes in visual conditions. In areas of more distinctive visual quality, such as designated scenic highways, designated scenic roads, parks, and recreation and natural areas, viewer sensitivity is more pronounced. In areas of more indistinctive or representative visual quality, sensitivity to change tends to be less pronounced. Viewer sensitivity is described as high, moderate, or low, depending on these factors.

LIGHT POLLUTION

Light pollution refers to all forms of unwanted light in the night sky, including glare, light trespass, skyglow, and over-lighting. Excessive light and glare can also be visually disruptive to humans and nocturnal animal species.

Electric lighting also increases night sky brightness and is the human-made source of skyglow. Light that is either emitted directly upward by luminaires or reflected from the ground is scattered by dust and gas molecules in the atmosphere, producing a luminous background. It has the effect of reducing one's ability to view the stars. Skyglow is highly variable depending on weather conditions, quantity of dust and gas in the atmosphere, amount of light directed skyward, and the direction from which it is viewed. In poor weather conditions, more particles are present in the atmosphere to scatter the upward-bound light.

5.12.2 Environmental Setting

The project is located in the eastern portion of the North Natomas community within an area that has been transforming from rural residential and agricultural uses to suburban uses over the past 20 years. The relatively flat terrain of the project area is characteristic of the North Natomas Basin. Land uses within the project consists of natural grasses, grazing land, and some pasture/hay crop land (see Section 5.8, "Biological Resources," for a further discussion on natural habitat conditions of the project area). Previous agricultural operations and development of the East Natomas Education Complex on the project area have altered the natural topography and drainage conditions. The western portion of the Krumenacher Ranch site has retained its natural topography and drainage features.

While most the project area is undeveloped, there are existing structures that consist of the residence site at Krumenacher Ranch near West Elkhorn Boulevard and school facilities at the partially constructed East Natomas Education Complex. Existing high-voltage power lines (consisting of two sets of steel lattice towers supporting double-circuit 230 kilovolt (kV) lines and a single 115-kV line) owned by the Western Area Power Administration and Sacramento Municipal Utility District bisect the project area and are the most visually prominent feature in the project area. Typical views of the project area are provided in Exhibits 5.12-1 through 5.12-4.

The visual landscape characteristics of the surrounding area include suburban uses south of the project area along Del Paso Road that are comprised of industrial and commercial buildings. The visual character east of the project area consists of open space and natural resources associated with the Natomas East Main Drainage Canal (NEMDC) and the Wolf Ranch Wildlife Sanctuary, industrial uses (e.g., rock material stockpiling, an asphalt plant, and Brasher's Sacramento Auto Auction), vacant land (some of which is currently being utilized for cattle grazing), and rural residential uses associated with the Valley View Acres community along Sorento Road. Agricultural fields (rice crops) and pasture lands make up the visual landscape character to the north, while suburban single-family residential uses of the North Natomas community are the dominant visual feature to the west of the project area.

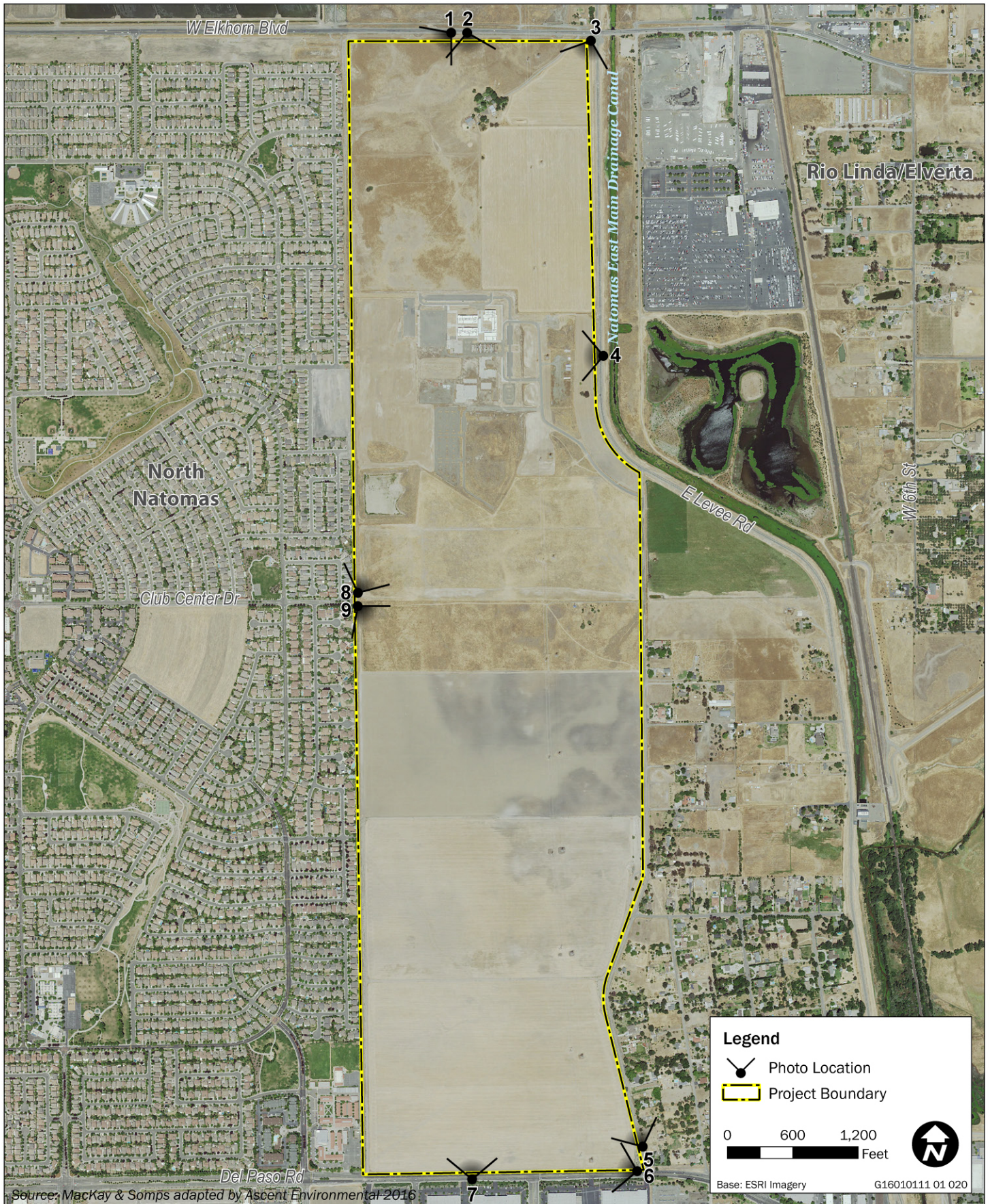


Exhibit 5.12-1

Photograph Locations



Photo 1

View of Project Area Looking South from West Elkhorn Boulevard



Photo 2

View of Krumenacher Ranch from West Elkhorn Boulevard



Photo 3

View of Project Area Looking South at West Elkhorn Boulevard/East Levee Road



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Exhibit 5.12-2

Views of Project Area from West Elkhorn Boulevard



Photo 4

View of Project Area Looking West from East Levee Road

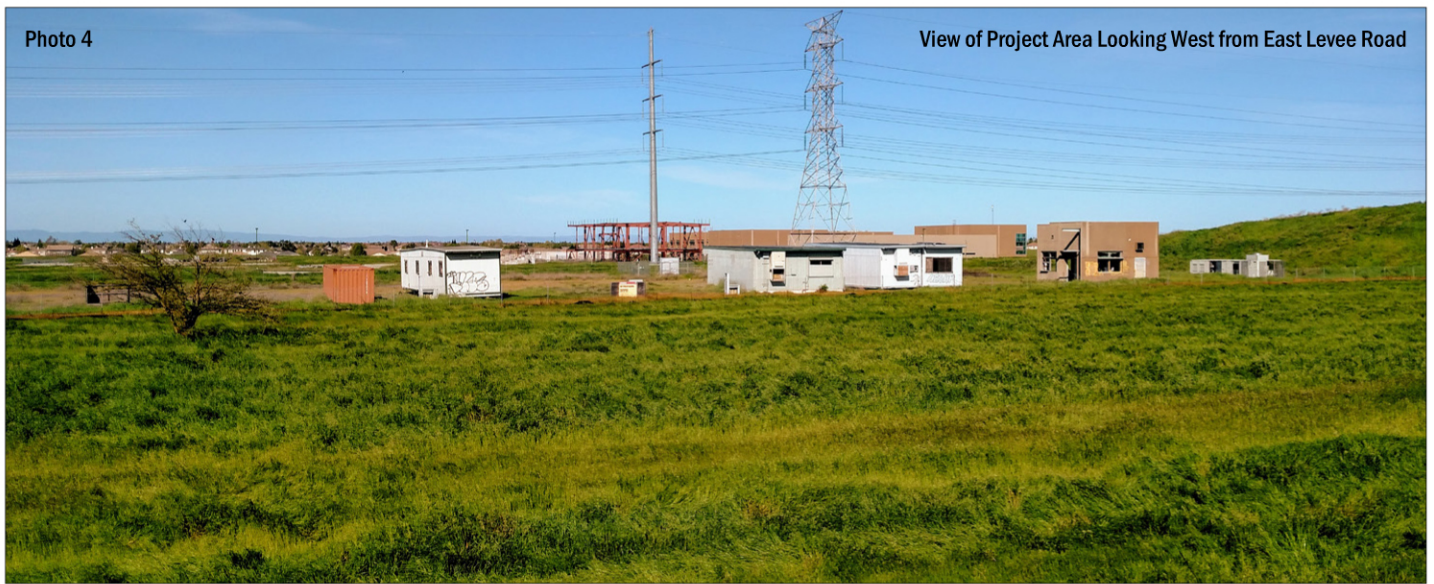


Photo 5

View of Project Area Looking North from Sorento Road



Photo 6

View of Project Area Looking West from Sorento Road



X16010111.01.028

Exhibit 5.12-3

Views of Project Area from East Levee Road and Sorento Road



Photo 7

View of Project Area Looking North from Del Paso Road



Photo 8

View of Project Area Looking Northeast from Club Center Drive



Photo 9

View of Project Area Looking Southeast from Club Center Drive



Exhibit 5.12-4

View of Project from Del Paso Road and Club Center Drive



SIGNIFICANT VISUAL FEATURES OF THE PROJECT AREA

Wetland Resources

Wetlands and vernal pools are seasonally flooded depressions found on soils with an impermeable layer. The impermeable layer allows the seasonal pools to retain water much longer than the surrounding uplands, and often fill and empty several times during the rainy season. Natural wetland features exist on the western portion of the Krumenacher Ranch site. Please refer to Section 5.8, "Biological Resources," for further discussion of wetland resources in the project area.

Tree Resources

The project area contains 36 trees consisting of native oaks, sycamore, and cottonwoods that scattered throughout the project. The only clusters of trees occur in areas around the residence on the Krumenacher Ranch site.

LIGHT AND GLARE CONDITIONS

The project area is currently undeveloped and has been used for agricultural activities. This type land use typically does not generate substantial amounts of glare, lighting, or illumination, and the ambient nighttime lighting and illumination levels are very low. However, suburban land uses to the south and west of the project area contain substantial sources of light and glare associated with buildings, residences, and street lighting. Sources of daytime glare include, but are not limited to, daytime light reflection from windows, architectural coatings, glass, and other shiny reflective surfaces on the existing industrial and commercially developed properties.

PROJECT SITE VISIBILITY – VISUAL PROFILES

As shown in Exhibits 5.12-1 through 5.12-4, there are open public views of the project area from West Elkhorn Boulevard, local roadways serving residential uses to the west (e.g., Faletto Avenue, Club Center Drive, Aimwell Avenue, and Mayfield Street), Del Paso Road, Sorento Road, and East Levee Road. There are no designated scenic vistas that overlook the project area.

KEY OBSERVATION POINTS

Views from West Elkhorn Boulevard

Exhibit 5.12-1 and 5.12-2 display typical views along West Elkhorn Boulevard, which includes open views of the Krumenacher Ranch features and the East Natomas Education Complex. As shown in these photos, the dominant visual landscape characteristics of this view consist of agricultural grazing/grasslands, high-voltage power lines and towers, Krumenacher residence and domestic water tower, and a cluster of trees. Distant views into the project area beyond Krumenacher Ranch and East Natomas Education Complex are limited because of the variations in topography of this portion of the site.

Views from the East along Sorento Road and the East Levee Road

Exhibit 5.12-1 and 5.12-3 display views of the project area from Sorento Road (Valley View Acres community) and along East Levee Road. As shown in these photos, the visual landscape characteristics of this view consist of the grazing lands and grasslands, the East Natomas Education Complex, high-voltage power lines and towers, and distant views of suburban single-family residential areas along the western boundary of the project area. The variations of the project area's topography are evident from these views (generally flat conditions near Del Paso Road to gentle rolling terrain through the center and northern portions of the project area).

Views from the South along Del Paso Road

Exhibit 5.12-1 and 5.12-4 display views of the project area from Del Paso Road. The visual landscape characteristics of this view consist of the grazing lands and grasslands, high-voltage power lines and towers, and distant views of suburban single-family residential areas along the western boundary of the project area. The topography in this portion of the project area is generally flat.

Views from the West from Club Center Drive

Exhibit 5.12-1 and 5.12-4 display typical open views of the project within existing urban single-family residential development along the western boundary of the project area. As shown in these photos, the visual landscape characteristics of this view consist of the grazing lands and grasslands, distant views of the high-voltage power lines and towers as well as the East Natomas Education Complex.

VIEWER SENSITIVITY

As viewed from West Elkhorn Boulevard, Club Center Drive, Sorento Road, and East Levee Road, the project area generally provides a visual transition between the suburban single-family, commercial, and industrial developed conditions of the North Natomas community and the agricultural and rural residential conditions east of the NEMDC. However, the East Natomas Education Complex buildings are a suburban feature that extend the developed visual condition of existing North Natomas community into the project area. There are also industrial uses east of the project area and NEMDC that provide suburban visual characteristics to the West Elkhorn Boulevard corridor.

As viewed from Del Paso Road, the project appears as an undeveloped in-fill site surrounded by existing development of the North Natomas community to the west and the Valley View Acres community to the east.

5.12.3 Regulatory Setting

FEDERAL

There are no federal laws, regulations, plans, or ordinances associated with visual resources that are relevant to environmental review of the project.

STATE

California Energy Commission Building Energy Efficiency Standards for Outdoor Lighting

Title 24, Parts 1 and 6, Building Energy Efficiency Standards, adopted by the California Energy Commission on November 5, 2003, includes requirements for outdoor lighting. These standards are updated periodically; the last update took effect in July of 2014. The standards contain lighting power allowances for newly installed equipment and specific alterations that are dependent on the "Lighting Zone" in which the project is located. The Energy Commission defines the boundaries of Lighting Zones based on U.S. Census Bureau boundaries for urban and rural areas as well as the legal boundaries of wilderness and park areas. The smallest amount of power is allowed in Lighting Zone 1 and increasingly more power is allowed in Lighting Zones 2, 3, and 4. By default, government-designated parks, recreation areas, and wildlife preserves are Lighting Zone 1; rural areas are Lighting Zone 2; and urban areas are Lighting Zone 3. Lighting Zone 4 is a special use district that may be adopted by a local government.

Existing outdoor lighting systems are not required to meet these lighting power allowances. However, alterations that increase the connected load, or replace more than 50 percent of the existing luminaires for each outdoor lighting application that is regulated by the standards must meet the lighting power allowances for newly installed equipment.

The allowed lighting power is based on the brightness of existing lighting in the surrounding area. This is because the eyes adapt to darker surrounding conditions, and less light is needed for visibility; when the surrounding conditions get brighter, more light is needed to see. Providing greater power than needed potentially leads to debilitating glare, and to a spiral of increasing brightness as over-bright projects become the ambient conditions for future projects, causing future projects to install lighting that unnecessarily consumes energy and contributes to light pollution.

State Scenic Highway Systems

The California Department of Transportation administers 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 designated scenic highways with a view of the project area.

LOCAL

City of Sacramento 2035 General Plan

The following policies are relevant to the project.

- ▲ Policy LU 2.1.2: Protect Established Neighborhoods. The City shall preserve, protect, and enhance established neighborhoods by providing sensitive transitions between these neighborhoods and adjoining areas, and by requiring new development, both private and public, to respect and respond to those existing physical characteristics, buildings, streetscapes, open spaces, and urban form that contribute to the overall character and livability of the neighborhood.
- ▲ Policy LU 2.3.1: Multi-functional Green Infrastructure. The City shall strive to create a comprehensive and integrated system of parks, open space, and urban forests that frames and complements the city's urbanized areas.
- ▲ Policy LU 2.3.2: Adjacent Development. The City shall require that development adjacent to parks and open spaces complements and benefits from this proximity by:
 - preserving physical and visual access;
 - requiring development to front, rather than back, onto these areas;
 - using single-loaded streets along the edge to define and accommodate public access;
 - providing pedestrian and multi-use trails;
 - augmenting nonaccessible habitat areas with adjoining functional parkland;
 - extending streets perpendicular to parks and open space and not closing off visual and/or physical access with development; and
 - addressing the operations, maintenance, and public safety needs of the Local Maintaining Agencies.
- ▲ Policy LU 2.4.1: Unique Sense of Place. The City shall promote quality site, architectural and landscape design that incorporates those qualities and characteristics that make Sacramento desirable and memorable including: walkable blocks, distinctive parks and open spaces, tree-lined streets, and varied architectural styles.
- ▲ Policy LU 4.1.7: Neighborhood Transitions. The City shall provide for appropriate transitions between different land use and urban form designations along the alignment of alleys or rear lot lines and along

street centerlines, in order to maintain consistent scale, form, and character on both sides of public streetscapes.

- ▲ Policy LU 4.1.9: Neighborhood Street Trees. The City shall encourage the strategic selection of street tree species to enhance neighborhood character and identity and preserve the health and diversity of the urban forest.
- ▲ Policy LU 4.5.1: New Growth Neighborhoods. The City shall ensure that new residential growth areas include neighborhoods that maintain a mix of residential types and densities, and that the residential mix will provide appropriate transitional features that integrate the area with adjacent existing neighborhoods and development.

North Natomas Community Plan

The North Natomas Community Plan is a component of the City of Sacramento 2035 General Plan. The following policies are relevant to the project.

- ▲ Policy NN.ERC 1.10: Agricultural Buffers. The City shall maintain an agricultural buffer along the north and west boundaries of the plan area as a method to avoid land use conflicts between urban uses and agricultural operations. The north buffer along Elkhorn Boulevard includes a 250-foot-wide strip of land along the south side of Elkhorn Boulevard, the 136-foot-wide public right-of-way of Elkhorn Boulevard, and any maintenance road or irrigation canal on the north side of Elkhorn Boulevard. The uses allowed in the buffer include pedestrian trails and bikeways, linear parks and open space, drainage canals or detention basins, irrigation canals, public roads, and maintenance roads. The buffer along the west side of the plan area is 200 feet wide and allows the same uses as the northern buffer. The area devoted to the agricultural buffer is 195.9 acres. As an alternative to agricultural buffers, other methods to reduce land use conflicts between urban and agricultural zoned lands include (1) provide separation among uses through the placement of roadways and landscape corridors, (2) through design (i.e., orientation and heights of buildings), (3) provide disclosure of potential agricultural operations nearby, and/or (4) provide temporary buffers that could be extinguished if agriculturally zoned property is rezoned to urban uses.
- ▲ Policy NN.ERC 1.12: Other Open Space. The City shall allow for Open Space to include an open space parkway (Ninos Parkway) from Del Paso Road to Elkhorn Boulevard that includes the Western Area Power Administration lines (46.6 acres); an open space buffer along the eastern boundary of the plan area that includes the existing Natomas East Main Drainage Canal and the Union Pacific Railroad right-of-way (123 acres); a proposed lake in the Northborough project (24 acres); and the Witter Ranch Historic Farm located near the northeast corner of El Centro Road and San Juan Road (26.2 acres). The area of land devoted to “Other Open Space” is 219.8 gross acres.

City of Sacramento Planning and Development Code

The City’s land use and design regulations are contained in the City’s Planning and Development Code (Title 17 of the City Code). Division VI of Planning and Development Code include architectural and site development standards that regulate building design and siting, open space provision, parking design, landscaping, equipment screening, exterior lighting, and walls and fences (Chapters 17.600 through 17.624). As part of these provisions, Planned Unit Developments are required to establish their own site-specific development guidelines.

5.12.4 Impacts and Mitigation Measures

SIGNIFICANCE CRITERIA

Based on the Appendix G of the State CEQA Guidelines, the project would result in a potentially significant impact on scenic or aesthetic resources if it would:

- ▲ result in 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.

METHODS AND ASSUMPTIONS

This section analyzes the visual changes that would occur in the project area at full build-out. The visual resource analysis is based on field surveys, existing planning documents, the visual impact analysis provided in the City of Sacramento 2035 General Plan Master EIR, reviews of existing and anticipated changes in topographic conditions of the project area in relation to the surrounding vicinity, and the proposed land use plan and development guidelines for the Panhandle PUD. The analysis focused on whether the project would result in alteration of the visual characteristics of the area and/or view, the scale or degree of which appears as a substantial obvious and disharmonious modification of the overall visual character of the surrounding area.

While not included in the Panhandle PUD, the future development of the Krumenacher Ranch site is addressed in the impact analysis below.

ISSUES DISMISSED FROM FURTHER CONSIDERATION

The project area is not located within a designated scenic vista or along a state scenic highway. Thus, the project would not result in any impacts to these issue areas and they are not further addressed in this EIR.

PROJECT IMPACTS AND MITIGATION MEASURES

Impact 5.12-1: Degradation of visual character

The visual character surrounding the project area consists of suburban uses that transition to rural residential and agricultural conditions. The project would convert the visual open space character of project area to suburban uses and would further expand suburban development conditions east of existing North Natomas Community that would substantially alter public views. Because of the size of project area and its location along the northern boundary of the City, the change in visual character would be considered a **significant** impact.

As shown in Exhibits 5.12-1 through 5.12-4, implementation of the project would alter the existing visual landscape characteristics of the project area from open space/grazing and grasslands to suburban uses (buildings, dense development, parks, and new roadway facilities). This would expand existing on-site development conditions associated with the East Natomas Education Complex buildings. This would substantially alter public views of the site from West Elkhorn Boulevard, local roadways to the west (e.g., Faletto Avenue, Club Center Drive, Aimwell Avenue, and Mayfield Street), Del Paso Road, Sorento Road, and East Levee Road.

The Panhandle PUD includes “Traditional” lot densities primarily along the western project boundary which would generally be consistent with residential uses and densities in the adjacent North Natomas neighborhoods. Lower density “Estate” lots are proposed primarily in the eastern portion of the PUD that transition project residential densities to compliment the rural residential character of the Valley View Acres community to the east of the project, while the denser “Compact” residential lots would be centrally located adjacent to key project features (parks, elementary school, and the Ninos Parkway). This neighborhood design would transition densities to match existing development to the west and east of the project area, consistent with General Plan policies LU 2.1.2, LU 4.1.7, and LU 4.5.1.

The Panhandle PUD Guidelines also include the following design provisions for the rural residential interface with Sorento Road to further protect the character of the Valley View Acres community:

- ▲ landscaped wall and 18.5-foot landscaping setback from the Sorento Road, and
- ▲ new roadway access to Sorento Road would be limited to two access point.

The Panhandle PUD Schematic Plan establishes the Nino Parkway that is part of the open space buffering for the North Natomas Community Plan eastern boundary as identified in North Natomas Community Plan Policy NN.ERC 1.12.

While the above project design features would address visual character and density transition between the suburban residential areas to the west and the rural residential areas to the east, the project would still involve the conversion of 489 acres (excluding the East Natomas Education Complex) from visual open space to suburban uses and would further expand the suburban footprint in the North Natomas Basin. Because of the size of project area and its location along the northern boundary of the City, the change in visual character would be considered a **significant** impact.

Mitigation Measures

Because of the scale and location of the project, there is no feasible mitigation available to address aesthetic resource impacts associated with the conversion of open space and agricultural land to suburban development. Although design, architectural, development, and landscaping standards are included to ensure that suburban development on the project site remains within certain aesthetic guidelines and consistent with applicable General Plan policies, there is no mechanism to allow implementation of the project while avoiding the conversion of the local viewshed from open space and agricultural uses to suburban development. Impacts related to the degradation of the local viewshed through conversion to suburban development are considered **significant and unavoidable**.

Impact 5.12-2: Day-time glare and nighttime lighting

Development of the project area would result in the introduction of buildings and facilities that may create lighting and glare on adjoining areas. This impact would be **significant**.

The project would create light and glare sources currently not present in the project area that could affect adjoining residential uses as well as travelers on Del Paso Road and West Elkhorn Boulevard. Potential sources of light and glare would include building features, streetlights within the project, parking lot lighting, and lights associated with residential, commercial, park uses, and park related sports facilities. Of particular concern is the potential for lighting of sports facilities at the parks. Sports facilities typically require floodlights that could potentially be in use until late into the nighttime hours. There are no proposed lighting or glare provisions in the Panhandle PUD Guidelines related to the protection of adjacent land uses. Section 17.608.040 of the City Planning and Development Code would require that exterior lighting for project parking areas be shielded or otherwise designed to avoid spillover lighting on adjacent roadways and land areas. However, this provision does not apply to sports facility lighting. Because the project could result in the development of features that could result in adverse lighting and glare impacts to adjacent land uses, this would be a **significant** impact.

Mitigation Measure 5.12-2: Light fixture design

Outdoor lighting for commercial uses and community parks/sports facilities shall be designed to be turned off when not in use where security and safety is not a concern. This requirement shall be included in lighting plans submitted to the City as part of the improvement plans. Light fixtures for sports fields that are planned to be lighted shall be directed away from residential areas and roadways to reduce light spillover and glare. Light fixtures shall be designed to limit illumination to the sports fields and shall demonstrate that the illumination of adjacent residential properties will not exceed 1.0 foot-candles. These lighting requirements will be included in the Panhandle PUD Guidelines.

Significance after Mitigation

Implementation of the above mitigation measure would require that commercial and sport facility lighting be designed to minimize its operation and avoid lighting and glare impacts. Compliance with mitigation measure 5.12-2 in combination with the outdoor lighting restrictions for parking areas provided in Section 17.608.040 of the City Planning and Development Code (avoidance of spillover lighting) would ensure that this impact is mitigated to a **less-than-significant** level.

5.12.5 Cumulative Setting, Impacts, and Mitigation Measures

CUMULATIVE SETTING

The visual resources cumulative setting consists of the North Natomas Community Plan and Sacramento metropolitan area. The existing and projected future urban development throughout the Sacramento metropolitan area is expected to further contribute to the conversion of open space and agricultural areas to suburban uses. The cumulative impact analysis takes into account planned and proposed development identified in Table 5-2.

CUMULATIVE IMPACTS AND MITIGATION MEASURES

Impact 5.12-3: Cumulative visual resource impacts

The project would convert the visual open space character of project area to suburban uses and would further extend suburban development conditions east of existing North Natomas Community. This would contribute to the cumulative conversion of open space and agricultural areas in the Sacramento metropolitan area. Overall, cumulative impacts to visual character would be significant and the project's contribution would be **cumulatively considerable**.

Implementation of the project would alter the existing visual landscape characteristics of the project area's 489 acres from open space/grazing and grasslands to suburban uses (buildings, dense development, parks, and new roadway facilities). This would substantially alter public views of the site from public roadways. This would contribute to the regional loss of approximately 24,153 acres of open space and agricultural lands as a result of development in the City of Sacramento, Sacramento County, Sutter County, Placer County, and the City of Roseville (based on the development projects identified in Table 5-2). Cumulatively, the loss of open space as a visual aesthetic feature would be a significant impact.

While project design features would address visual character and density transition between the suburban residential areas to the west and the rural residential areas to the east, the project would ultimately result in the conversion of open space land and further contribute to regional losses of this visual resource. Thus, the project's contribution to this impact would be **cumulatively considerable**.

Because of the scale and location of the project, there is no feasible mitigation available to offset the aesthetic resource impacts associated with the conversion of open space and agricultural lands to suburban development. The project's contribution to cumulative impacts related to the regional loss of the open space and agricultural lands is considered **cumulatively considerable and significant and unavoidable**.

Mitigation Measures

No mitigation is available to address this impact.

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5.13 UTILITIES

This section analyzes the project’s environmental effects from providing utility services associated with development of the project area. Impacts related to drainage are discussed in Section 5.8, “Hydrology and Water Quality.” Electric and natural gas services are addressed in Section 5.14, “Energy.”

The following comments were received in response to the Notice of Preparation (see Appendix A) and are addressed in this section:

- ▲ the project must complete a sewer study that identifies connection points, project phasing, and evaluation of capacity; and
- ▲ the Draft EIR needs to consider cumulative impacts.

5.13.1 Environmental Setting

Public utilities in the project area are provided by various entities, as identified in Table 5.13-1, and discussed in detail below.

Table 5.13-1 Utilities Providers for the Project Area at Annexation

Utility	Agency/Provider
Water Supply	City of Sacramento
Wastewater Collection and Conveyance	Sacramento Area Sewer District
Wastewater Treatment	Sacramento Regional County Sanitation District
Solid Waste Services	City of Sacramento/Sacramento Regional Solid Waste Authority

Source: data provided by Ascent Environmental, Inc. in 2017

WATER SUPPLY

Water Service Provider

The City of Sacramento provides water service within its boundaries. Its water supply consists of surface water from the American River and Sacramento River and groundwater. A description of the City’s water supply sources and infrastructure is provided below.

CEQA Guidelines Section 15155 requires preparation of a water supply assessment (WSA) when a project is of sufficient size to be defined as a “water-demand project.” The project is subject to this requirement and a WSA (City’s WSA Checklist) has been prepared (see Appendix I).

Current and Future Water Supply Sources

The following discussion is based on information provided in the City of Sacramento 2015 Urban Water Management Plan (City of Sacramento 2016a).

Surface Water

Surface water is currently diverted at two locations: the American River downstream of the Howe Avenue Bridge (Fairbairn Water Treatment Plant), and from the Sacramento River downstream of the confluence of the American and Sacramento rivers (Sacramento River Water Treatment Plant). Table 5.13-2 summarizes City surface water rights.

Table 5.13-2 City of Sacramento Surface Water Rights Summary

Application Permit and License No.	Priority Date	River Source	Maximum Amount Specified		Purpose of Use	Period of Use	Place of Use	Deadline to Perfect by Full Use
			cfs	AFY				
A. 1743 P. 992	3.30.1920	Sacramento	225	81,800	Municipal	Jan 1 to Dec 31	City	12.31.2030
A. 12140 P. 11358	10.29.1947	American	675 ¹	245,000 ²	Municipal	Nov 1 to Aug 1	79,500 acres within and adjacent to City	12.31.2030
A. 12321 P. 11359	2.13.1948	Tributaries of American			Municipal	Nov 1 to Aug 1 ⁵	96,000 acres within and adjacent to City	12.31.2030
A. 12622 P. 11360	7.28.1948	Tributaries of American			Municipal	Nov 1 to Aug 1 ⁵	96,000 acres within and adjacent to City	12.31.2030
A. 16060 P. 11361	9.22.1954	Tributaries of American			Municipal	Nov 1 to Aug 1 ³	79,500 acres within and adjacent to City	12.31.2030

Notes: cfs = cubic feet per second, AFY = acre-feet per year

¹ Combined total 675 cfs diversion

² Combined total 245,000 afy diversion

³ Year-round period for re-diversion of water previously diverted by Sacramento Municipal Utility District Upper American River Reservoirs.

Source: City of Sacramento 2015 Urban Water Management Plan Table 6-5

The City also has a water rights settlement contract entered into in 1957 by the City and the U.S. Bureau of Reclamation (USBR). Under settlement contract the City agreed to limit its combined rate of diversion under its American River water rights permits to a maximum of 675 cubic feet per second (cfs) and a maximum amount of 245,000 acre-feet per year (afy) in the year 2030, and to limit its rate of diversion under its Sacramento River water rights permit to a maximum of 225 cfs and a maximum amount of 81,800 afy.

USBR is required in the contract to make available at all times enough water in the rivers to enable the agreed-upon diversions by the City. The City makes annual payments to USBR for Folsom Reservoir storage capacity used to meet the USBR's obligations under the contract, beginning with payment for 8,000 acre feet of storage capacity in 1963 and building up to payment for the use of 90,000 acre feet of storage capacity in 2030. This USBR contract, in conjunction with the City's water rights, provides the City with a reliable and secure surface water supply source.

The City's diversions of American River water are also subject during certain time periods to limitations specified in the Water Forum Agreement (WFA). As part of the WFA, each water purveyor (including the City of Sacramento) signed a purveyor specific agreement (PSA) that specified that purveyor's Water Forum commitments. The City's PSA limits the quantity of water diverted from the American River at the Fairbairn Water Treatment Plant during two hydrologic conditions: extremely dry years (i.e., "Conference Years") and periods when river flows are below the so-called "Hodge Flow Criteria."

Conference Years are time periods when the California Department of Water Resources (DWR) projects an annual unimpaired flow into Folsom Reservoir of 550,000 afy or less, or the projected March through November unimpaired flow into Folsom Reservoir is less than 400,000 afy. During Conference Years, the City has agreed to limit its diversions for water treated to 155 cfs and 50,000 afy. Conference Years have occurred on the American River in years 1924, 1977, and 2015.

In addition to Conference Years, the City's PSA includes diversion limitations when American River flows passing the Fairbairn Water Treatment Plant are less than the Hodge Flow:

- ▲ 2,000 cfs from October 15 through February;
- ▲ 3,000 cfs from March through June; and
- ▲ and, 1,750 cfs from July through October 14.

The City's 2015 Urban Water Management Plan (page 6-9) identifies that the maximum annual diversion from the American River during a year when flows are below Hodge Flow criteria every day of the year is approximately 82,260 afy.

Groundwater

The City utilizes groundwater that is extracted from two subbasins of the Sacramento Valley Groundwater Basin (the North American Subbasin, located north of the American River, and the South American Subbasin, located south of the American River). As part of the Water Forum process, a groundwater model was developed that defined a Central Basin boundary that took into account the hydrogeologic boundaries and political boundaries of the water purveyors in the Sacramento region. The Central Basin boundary overlies the South American Subbasin, but the boundaries differ to match the Sacramento County groundwater model grid. The Central Basin underlies the City of Sacramento south of the American River.

Table 5.13-3 provides a summary of historic groundwater production by the City.

Table 5.13-3 City of Sacramento Groundwater Production in Acre Feet Per Year

Location or Groundwater Basin	2011	2012	2013	2014	2015
North American Subbasin	17,210	13,305	11,462	13,261	12,509
South American Subbasin	602	1,057	1,106	1,132	970
Sacramento International Airport and Metro Air Park ¹	298	254	266	238	227
Total	18,110	14,616	12,834	14,631	13,706

Notes:

¹ Water supplied to Sacramento County Water Agency to serve the Sacramento International Airport and Metro Air Park under a wholesale agreement.

Source: City of Sacramento 2015 Urban Water Management Plan Table 6-3 and 6-4

Future Water Supply Projects

The City is participating as a partner in the Sacramento River Regional Water Reliability Project (known as the RiverArc Project), a multi-agency effort to evaluate the feasibility of a regional surface water supply project on the Sacramento River. The RiverArc Project would divert water from the Sacramento River to offset water currently diverted from the American River, and deliver that water to a new regional water treatment plant. That water would then be distributed through existing and new pipelines to local water agencies, including the City of Sacramento. For the City of Sacramento, the RiverArc Project would enable the city to divert surface water when the Hodge flow restrictions are in place on the American River. A new water treatment plant could also be used to during peak periods. A Planning Phase 1 report has been prepared. Environmental review for this project is anticipated to be completed in 2018 and construction completed in 2023. (West Yost Associates 2005)

The City does not purchase or import water from any wholesale water suppliers and currently does not plan to in the future. There are mutual aid agreements between the City and neighboring water purveyors that can be used to purchase water on an as-needed basis. The City's 2015 Urban Water Management Plan does not report wholesale water as supply as the agreements are non-firm and for emergency aid.

The City also does not currently utilize recycled water. The Sacramento Regional County Sanitation District is constructing a six-mile recycled water pipeline to the Cogen Facility, which is located south of the City. The Cogen Facility currently utilizes potable water from the City for its cooling needs and will utilize 1,000 acre feet per year of recycled water upon completion of this project.

Total Available Water Supply

The City's 2015 Urban Water Management Plan identifies that the City's total retail water supplies were 84,832 acre-feet in 2015. Table 5.13-4 provides an overview of total City water supplies for year 2020 to

2040. The City's 2015 Urban Water Management Plan projected yield for the City's water supply is shown under the following three conditions:

- ▲ Normal Water Year: The year, or an averaged range of years, that most closely represents the average water supply available to the City.
- ▲ Single Dry Year: The year with the lowest annual runoff or allocation in the historical sequence.
- ▲ Multiple-Dry Year: The lowest average runoff or allocation for a consecutive three-year period in the historical sequence.

The basis of hydrologic years uses data from the Department of Water Resources that consists of water year classification indices for the Sacramento Valley for years 1906 through 2015 and Lower American River Flow Management System (CALSIMII) Hodge Criteria from 1922 through 1994.

Table 5.13-4 City of Sacramento Water Supply Summary in Acre Feet Per Year (Retail Only)

Water Condition	2020	2025	2030	2035	2040
Normal Water Year	275,917	288,288	294,419	294,419	294,419
Single-Dry Year	275,917	288,288	294,419	294,419	294,419
Multiple-Dry Year	275,917	288,288	294,419	294,419	294,419

Source: City of Sacramento 2015 Urban Water Management Plan Table 7-7, 7-9, and 7-11

As noted above the USBR contract, in conjunction with the City's water rights, provides the City with a reliable and secure surface water supply source. There have been only three years (1924, 1977, and 2015) where the City was required to reduce its diversions from the American River due to drought conditions pursuant to the "Conference Years" under the Water Forum Agreement.

Existing and Projected Water Demand

Tables 5.13-5 and 5.13-6 summarize historic and projected water demand for the City. Future water demands are based on the City's 2013 Water Supply Master Plan (which assumes 208 gallons per capita per day demand factor) and considers anticipated reduction in future water use as a result of existing and expanded water conservation measures. Growth projections for the City's service area were based on the City of Sacramento 2035 General Plan and anticipated expansion of the City's service area to include its sphere of influence areas.

Table 5.13-5 City of Sacramento Historic Water Demands in Acre Feet Per Year (Retail Only)

	2011	2012	2013	2014	2015
Single-Family	48,442	52,819	54,749	40,554	36,024
Multi-Family	21,638	21,958	22,533	15,105	14,657
Other (Commercial/Industrial)	17,703	19,216	20,210	18,146	17,054
Institutional (and governmental)	5,133	5,528	5,805	4,598	3,938
Landscape	5,130	5,172	5,641	3,678	3,418
Other	198	158	165	189	102
Losses	10,378	9,402	8,100	12,953	9,639
Total	108,621	114,253	117,203	95,222	84,832

Source: City of Sacramento 2015 Urban Water Management Plan Table 4-1 and 4-2

Table 5.13-6 City of Sacramento Projected Water Demands in Acre Feet Per Year (Retail Only)

	2020	2025	2030	2035	2040
Single-Family	54,354	57,582	61,699	65,815	72,899
Multi-Family	23,097	24,469	26,218	27,967	29,889
Other (Commercial/Industrial)	20,873	22,172	23,829	25,485	27,305
Institutional (and governmental)	5,995	6,351	6,805	7,259	7,758
Landscape	5,374	5,693	6,100	6,507	6,954
Other	214	227	243	259	277
Losses	12,323	13,055	13,988	14,921	15,947
Total	122,229	129,548	138,882	148,213	162,029

Source: City of Sacramento 2015 Urban Water Management Plan Table 4-3

In addition to City water demands, the City provides wholesale water supply to areas outside and adjacent to the City. Water providers who are currently receiving water from the City include Sacramento County Water Agency, California American Water Company, and Fruitridge Vista Water Company. In 2015, the City provided 1,199 acre feet of water supply to these entities, and is anticipated to provide 58,586 acre feet annually of wholesale water by the year 2030 and through 2040 (City of Sacramento 2016a:4-7).

Status of the Groundwater Basin

In compliance with Sustainable Groundwater Management Act of 2014, the Sacramento Groundwater Authority (SGA) was formed and prepared a Groundwater Management Plan (GMP) in 2014, for the portion of the North American Subbasin that is located north of the American River to the Sacramento County line (referred to as the North Basin). As a result of the Water Forum Successor Effort, the Central Sacramento County Groundwater Management Plan (CSCGMP) has also been prepared for the Central Basin (located south of the American River). Both plans address the need to carefully manage groundwater resources for the region and include provisions to maintain groundwater resources. The Water Forum Agreement identified a sustainable yield for the North Basin of 131,000 afy. The estimated annual average extractions for the North Basin are 99,500 afy. The GMP identifies that groundwater use has declined due to implementation of conjunctive use and water use efficiency measures. The GMP identifies that the North Basin is within its sustainable yield and is not expected that new water demands would cause the North Basin to approach its average annual sustainable yield. The Water Forum estimated that the long-term average annual sustainable yield of the Central Basin was 273,000 afy, while extractions were estimated at 250,000 afy. The CSCGMP identifies provisions to maintain groundwater pumping levels within the sustainable yield, including reducing demand, conjunctive use, and aquifer storage and recovery projects. (City of Sacramento 2016a:6-1 through 6-4 and 2016b:4.13-24)

Water Distribution Facilities

Water Treatment

As noted above, Fairbairn Water Treatment Plant (FWTP) and the Sacramento River Water Treatment Plant (SRWTP) treat water diverted from the American River and Sacramento River, respectively. Both the SRWTP and FWTP have a permitted capacity of 160 million gallons per day (mgd).

Water Distribution

The City operates 17 storage facilities, each with a capacity of three million gallons except for the Florin Reservoir, which has a capacity of 15 million gallons. The City operates pumping facilities throughout the City. There are 18 high lift service pumps at SRWTP and FWTP. The City also maintains pumping facilities at 10 of the City's storage reservoirs. These pump stations are of varying sizes and capacities. Water mains are

separated by the City into two distinct categories. Water distribution mains are typically two inches to 12 inches in diameter and utilized for water services, fire services and fire hydrants. Transmission mains are 18 inches and larger and are used to convey large volumes of water from the treatment plants to selected points throughout the distribution system. They are also utilized to transfer water to and from the storage reservoirs to meet fluctuating daily and seasonal demands. The City determines placement of new water distribution facilities as development plans are formulated. Water distribution facilities in the project area are located along Faletto Avenue, Club Center Drive, Aimwell Avenue, Mayfield Street, and Del Paso Road.

Groundwater is extracted from 22 municipal wells, most of which are located north of the American River. Total capacity for the City's municipal groundwater wells is approximately 20.6 mgd. (City of Sacramento. 2016a)

WASTEWATER TREATMENT

The Sacramento Regional County Sanitation District (SRCSD) provides wastewater treatment and large pipeline conveyance from three active contributing agencies including, Sacramento Area Sewer District (which the project is located in), and the cities of Folsom and Sacramento. The largest contributing agency is Sacramento Area Sewer District, which includes most unincorporated areas of the County, Citrus Heights, Elk Grove, Rancho Cordova and portions of the City. As such, SRCSD and Sacramento Area Sewer District would serve the project area. The SRCSD also maintains regional interceptors that convey sewage and wastewater to the Sacramento Regional Wastewater Treatment Plant (SRWWTP). The SRWWTP is owned and operated by the SRCSD. The plant is located just south of the City near the unincorporated community of Freeport. Wastewater is routed to the plant by collection systems owned by Sacramento Area Sewer District and the cities of Sacramento and Folsom. SRWWTP is permitted to treat an average dry weather flow (ADWF) of 181 mgd. The facility's 2014 ADWF was approximately 106 mgd (City of Sacramento. 2016b). The treated wastewater is discharged into the Sacramento River. The SRCSD is in the process of upgrading the WWTP that would include new treatment technologies and facilities that would increase the quality of effluent discharged. The environmental impacts of these improvements were addressed in the Sacramento Regional County Sanitation District EchoWater Project EIR (State Clearinghouse No. 2012052017). This EIR identified that significant environmental impacts associated with the EchoWater Project would be mitigated to a less-than-significant with the exception of cumulative construction air quality impacts and construction-related traffic impacts.

The Sacramento Area Sewer District is divided into trunk sheds. Each trunk shed generally consists of a number of hydraulically independent systems that each discharge into the SRCSD interceptor system. The project area is located within the NN Natomas Trunk Shed area. There are eight gravity wastewater (sewer) pipelines stub-outs adjacent to the project area to the west (MacKay & Soms 2016b):

- ▲ Sandmark Drive (10-inch diameter),
- ▲ Domino Avenue (10-inch diameter),
- ▲ Amazon Avenue (8-inch diameter),
- ▲ Faletto Avenue (8-inch diameter),
- ▲ Club Center Drive (10-inch diameter),
- ▲ Aimwell Avenue (21-inch diameter),
- ▲ Mayfield Street (8-inch diameter), and
- ▲ Del Paso Road (15-inch diameter).

SOLID WASTE DISPOSAL

Within the City, residential solid waste is collected by the City's Recycling and Solid Waste Division and commercial solid waste is collected private solid waste haulers. Residential solid waste is taken to the Sacramento Recycling and Transfer Station and the North Area Recovery Station where it is sorted for transportation to the following landfills (based on 2015 data):

- ▲ Kiefer Landfill (Sloughouse, California): the landfill has a permitted capacity of 10,815 tons per day. The landfill has approximately 113 million cubic yards of available capacity that is anticipated to have sufficient capacity through the year 2035.
- ▲ Forward Landfill (Stockton, California): the landfill has a maximum daily throughput capacity of 8,668 tons per day and approximately 24 million cubic yards of remaining capacity. It is anticipated to have sufficient capacity through the year 2021.
- ▲ L and D Landfill (Sacramento, California): the landfill has a maximum daily capacity of 2,540 tons and a total remaining permitted capacity of 6,031,055 cubic yards. It is anticipated to have a sufficient capacity through the year 2023.
- ▲ Yolo County Central Landfill (Yolo County, California): the landfill has a maximum daily throughput capacity of 1,800 tons and a total permitted capacity of 49 million cubic yards. It is anticipated to have sufficient capacity through the year 2081. (City of Sacramento 2016b)

CalRecycle identifies that the City disposed of 508,213.83 tons of solid waste in 2015 (approximately 1,392.37 tons per day). The City was below its disposal rate targets for population (5.8 pounds per day [target was 6.9 pounds per day]) and employment (9.3 pounds per day [target was 10.8 pounds per day]). (CalRecycle. 2017a)

5.13.2 Regulatory Setting

The following section provides an overview of laws and regulations related to utilities that are relevant to the project.

FEDERAL

Water

Clean Water Act

The federal Clean Water Act (CWA) employs a variety of regulatory and non-regulatory tools to reduce direct pollutant discharges into waterways, finance municipal wastewater treatment facilities, and manage polluted runoff. The U.S. Environmental Protection Agency (EPA) established primary drinking water standards in Section 304 of the CWA. States are required to ensure that the public's potable water meets these standards.

Section 402 of the CWA creates the National Pollutant Discharge Elimination System (NPDES) regulatory program. Point sources must obtain a discharge permit from the proper authority (usually a state, sometimes EPA, a tribe, or a territory). NPDES permits cover various industrial and municipal discharges, including discharges from storm sewer systems in larger cities, stormwater associated with numerous kinds of industrial activity, runoff from construction sites disturbing more than 1 acre, and mining operations. All so-called "indirect" dischargers are not required to obtain NPDES permits. "Indirect" dischargers send their wastewater into a public sewer system, which carries it to the municipal sewage treatment plant, through which it passes before entering any surface water.

Safe Drinking Water Act

As mandated by the Safe Drinking Water Act (Public Law 93-523), passed in 1974, EPA regulates contaminants of concern to domestic water supply. Such contaminants are defined as those that pose a public health threat or that alter the aesthetic acceptability of the water. These types of contaminants are regulated by EPA primary and secondary maximum contaminant levels (MCLs). MCLs and the process for setting these standards are reviewed every three years. Amendments to the Safe Drinking Water Act enacted in 1986 established an accelerated schedule for setting drinking water MCLs. EPA has delegated

responsibility for California's drinking water program to the State Water Resources Control Board Division of Drinking Water (SWRCB-DDW). SWRCB-DDW is accountable to EPA for program implementation and for adoption of standards and regulations that are at least as stringent as those developed by EPA.

Solid Waste

Resource Conservation and Recovery Act

The Resource Conservation and Recovery Act, Subtitle D, contained in Title 42 of the U.S. Code (USC) Section 6901 et seq. contains regulations for municipal solid waste landfills and requires states to implement their own permitting programs incorporating the federal landfill criteria. The federal regulations address the location, operation, design, groundwater monitoring, and closure of landfills.

STATE

Water

Urban Water Management Planning Act

The Urban Water Management Planning Act (Water Code Sections 10610 – 10656) requires that every urban water supplier that provides water to 3,000 or more customers or that provides over 3,000 acre-feet of water annually prepare and adopt an urban water management plan. The act states that urban water suppliers should make every effort to ensure the appropriate level of reliability in its water service sufficient to meet the needs of its various categories of customers during normal, dry, and multiple dry years. The act also states that the management of urban water demands and the efficient use of water shall be actively pursued to protect both the people of the state and their water resources.

The City of Sacramento is currently operating under its 2015 Urban Water Management Plan.

California Water Code, Water Supply Wells, and Groundwater Management

The California Water Code is enforced by DWR. The mission of DWR is "to manage the water resources of California in cooperation with other agencies, to benefit the State's people, and to protect, restore, and enhance the natural and human environments." DWR is responsible for promoting California's general welfare by ensuring beneficial water use and development statewide. The laws regarding groundwater wells are described in Water Code Division 1, Article 2 and Articles 4.300 to 4.311; and Division 7, Articles 1-4. Groundwater Management is outlined in the Water Code, Division 6, Part 2.75, Chapters 1-5, Sections 10750 through 10755.4.

Sustainable Groundwater Management Act of 2014

The Sustainable Groundwater Management Act of 2014 (SGMA) became law on January 1, 2015, and applies to all groundwater basins in the state (Water Code Section 10720.3). (The SGMA is comprised of three separate bills: Senate Bill 1168, Senate Bill 1319, and Assembly Bill 1739. All three were signed into law by the Governor on September 16, 2014.) By enacting the SGMA, the legislature intended to provide local agencies with the authority and the technical and financial assistance necessary to sustainably manage groundwater within their jurisdiction (Water Code Section 10720.1).

Pursuant to SGMA, any local agency that has water supply, water management, or land use responsibilities within a groundwater basin may elect to be a "groundwater sustainability agency" for that basin (Water Code Section 10723). Local agencies have until January 1, 2017 to elect to become or form a groundwater sustainability agency. In the event a basin is not within the management area of a groundwater sustainability agency, the county within which the basin is located will be presumed to be the groundwater sustainability agency for the basin. However, the county may decline to serve in this capacity (Water Code Section 19724). As noted above, SGA was formed and prepared a GMP in 2014, for the portion of the North American Subbasin that is located north of the American River to the Sacramento County line.

California Water Code, Water Supply

According to Water Code Section 10910 (referenced in CEQA Guidelines Section 15155), lead agencies (in this case the City of Sacramento), are required to identify the public water system(s) that would serve a project and assess whether the water supply is sufficient to provide for projected water demand associated with a project when existing and future uses are also considered (Water Code Section 10910 [c] [3]). The definition of a water-demand project is the same as CEQA Guidelines Section 15155. The project's WSA is provided in Appendix I.

A lead agency (City of Sacramento) must condition approval of a subdivision of certain sizes (including the project), upon "a requirement that a sufficient water supply shall be available" (Government Code Section 66473.7 [b][1]).

Solid Waste

California Integrated Waste Management Act

To minimize the amount of solid waste that must be disposed of in landfills, the State Legislature passed the California Integrated Waste Management Act of 1989 (AB 939), effective January 1990. According to AB 939, all cities and counties were required to divert 25 percent of all solid waste from landfill facilities by January 1, 1995 and 50 percent by January 1, 2000. Solid waste plans are required to explain how each city's AB 939 plan will be integrated with the County plan. In order of priority, the plans must promote source reduction, recycling and composting, and environmentally safe transformation and land disposal. Per capita disposal rates for unincorporated Sacramento County are below the target disposal rates established by AB 939.

In 2011, AB 341 modified the California Integrated Waste Management Act and directed CalRecycle to develop and adopt regulations for mandatory commercial recycling. The resulting Mandatory Commercial Recycling Regulation (2012) requires that on and after July 1, 2012, certain businesses that generate four cubic yards or more of commercial solid waste per week shall arrange for recycling services. To comply with this requirement, businesses may either separate recyclables and self-haul them or subscribe to a recycling service that includes mixed waste processing. The Eastern Regional MRF is a mixed waste processing facility. This facility receives and sorts waste to recover recyclable materials, assisting Placer County in meeting the state's waste reduction goal.

AB 341 (2011) also established a statewide recycling goal of 75 percent (Public Resources Code Section 41780); the 50 percent disposal reduction mandate still applies for cities and counties under AB 939 (1989), the Integrated Waste Management Act.

LOCAL

City of Sacramento 2035 General Plan

The following policies are relevant to the discussion of utility services for the project.

- ▲ Policy U 1.1.1 Provision of Adequate Utilities. The City shall continue to provide and maintain adequate water, wastewater, and stormwater drainage utility services utility services to areas in the city currently receiving these services from the City, and shall provide and maintain adequate water, wastewater, and stormwater drainage utility services to areas in the city that do not currently receive these City services upon funding and construction of necessary infrastructure.
- ▲ Policy U 1.1.4 Timing of Urban Expansion. The City shall assure that new public facilities and services are phased in conjunction with the approved urban development they are intended to serve.
- ▲ Policy U 1.1.5 Growth and Level of Service. The City shall require new development to provide adequate facilities or pay its fair share of the cost for facilities needed to provide services to accommodate growth without adversely impacting current service levels.

- ▲ Policy U 2.1.9 New Development. The City shall ensure that water supply capacity is in place prior to granting building permits for new development.
- ▲ Policy U 5.1.5 Residential and Commercial Waste Disposal. The City shall continue to provide curbside trash and recycling collection service to single-family residential dwellings and offer collection service to commercial and multifamily residential development.

City Code Chapter 15.92 (Water Efficient Landscape Requirements)

Chapter 15.92 establishes requirements for water efficiency for landscaping that consists of efficient irrigation systems, planting requirements that limit high water use plants to 55% for residential landscape projects and 45% for nonresidential landscaped areas. This chapter is based on the state's Model Efficient Landscape Ordinance.

Sacramento Regional Solid Waste Authority Code

The Sacramento Regional Solid Waste Authority is a joint powers authority that oversees solid waste and recycling services in the region. The Authority regulates commercial solid waste and construction waste by franchised haulers. Specifically, the Authority requires all franchised haulers to meet state diversion requirements (30% recycling rate for all commercial hauling).

Source Reduction Recycling Element

The City's Source Reduction Recycling Element was adopted by the State. To achieve compliance with AB 939, the City has implemented the following services:

- ▲ residential recycling,
- ▲ curbside recycling,
- ▲ home composting,
- ▲ less toxic pest management,
- ▲ household toxics,
- ▲ business recycling,
- ▲ business resources,
- ▲ business hazardous waste,
- ▲ special events recycling,
- ▲ business food waste composting, and
- ▲ waste reduction.

Chapter 17.616 of Sacramento City Code (Recycling and Solid Waste Disposal Regulations)

This chapter regulate the location, size, and design features of recycling and trash enclosures in order to provide adequate and convenient space for the collection, storage, and loading of recyclable and solid waste material for existing and new development; increase recycling of used materials; and reduce litter. The regulations in this chapter are necessary to lengthen the lifespan of landfills, encourage recycling, and meet state-mandated goals for waste reduction and recycling.

5.13.3 Impacts and Mitigation Measures

SIGNIFICANCE CRITERIA

Based on Appendix G of the State CEQA Guidelines, the project would result in a potentially significant impact on utilities if it would:

- ▲ require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects;

- ▲ have insufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed;
- ▲ result in a determination by the wastewater treatment provider which serves or may serve the project that it has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments;
- ▲ substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table;
- ▲ be served by a landfill with insufficient permitted capacity to accommodate the project's solid waste disposal needs; and
- ▲ conflicts with federal, state, and local statutes and regulations related to solid waste.

METHODS AND ASSUMPTIONS

While not included in the Panhandle PUD, the future development of the Krumenacher Ranch site is addressed in the utility impact analysis below.

Water Supply

The water supply analysis below utilizes the Revised Preliminary Water Study Evaluation for the Panhandle Development (MacKay & Somps 2016a) (see Appendix I), City's 2015 Urban Water Management Plan (City of Sacramento 2016a), and the City's WSA checklist (see Appendix I). Water supply demands are based on use factors from the City's WSA checklist except where noted. The Revised Preliminary Water Study Evaluation for the Panhandle Development evaluates the anticipated project water distribution system to meet fire flow and water pressure requirements of the City.

Wastewater

The wastewater analysis below is based on the Sanitary Sewer Study Level Three for the Natomas Panhandle (MacKay & Somps 2016b) (see Appendix I). This report evaluates the downstream sewer network has adequate capacity to accommodate the project and whether any off-site improvements would be required.

Solid Waste

The solid waste analysis below is based on current information on landfill and transfer facility capacity, 2015 CalRecycle population and employment disposal rates for the City, and City requirements. Construction waste generation is qualitatively addressed.

ISSUES DISMISSED FROM FURTHER CONSIDERATION

The project's wastewater flows would be typical of urban development and would not require any special treatment that would alter current wastewater treatment requirements with the SRWWTP. Thus, this issue will not be addressed further in this EIR.

PROJECT IMPACTS AND MITIGATION MEASURES

Impact 5.13-1: Wastewater and water supply facility impacts

Implementation of the project would interconnect with existing water and wastewater infrastructure stub-outs along the project area boundaries and would not require off-site improvements. All on-site facilities have been evaluated throughout the resource chapters of this EIR. As a result, the project would have **less-than-significant** wastewater and water supply facility impacts.

The Revised Preliminary Water Study Evaluation for the Panhandle Development evaluated the water distribution system design using the WaterCAD Version 8i computer program and confirmed that the development of the project can be adequately served through connections with existing water distribution facilities in the project area which are located along Faletto Avenue, Club Center Drive, Aimwell Avenue, Mayfield Street, and Del Paso Road. Adequate distribution capacity exists and no off-site water distribution improvements would be required to serve build-out of the project area. Thus, no environmental impacts beyond the footprint of the project area would occur.

The Sanitary Sewer Study Level Three for the Natomas Panhandle identified that project can be served with the existing gravity sewer connections (Sandmark Drive, Domino Avenue, Amazon Avenue, Faletto Avenue, Club Center Drive, Aimwell Avenue, Mayfield Street, and Del Paso Road). The Sanitary Sewer Study identifies that there is adequate wastewater capacity in existing collector and trunk pipelines stubbed at the project and no downstream improvements are required as there is adequate capacity (including the Upper Northwest Interceptor). Thus, no environmental impacts beyond the footprint of the project area would occur.

All on-site facilities have been evaluated throughout the resource chapters of this EIR. As a result, the project would have **less-than-significant** wastewater and water supply facility impacts.

Mitigation Measures

None required.

Impact 5.13-2: Sufficient water supplies and groundwater overdraft impacts

Implementation of the project would increase water supply demands in the City that would involve the use of both surface water and groundwater. Pursuant to the City's 2015 Urban Water Management Plan, the City has adequate water supplies to serve the project under normal, dry, and multiple-dry year conditions. The City would maintain groundwater production within the sustainable yields of the North Basin. This impact would be **less than significant**.

The project area is currently outside the City's service area and does not obtain water service from the City. Upon annexation, the project would be included in the City's service area. The City of Sacramento 2015 Urban Water Management Plan projects and evaluates water demands for the City's sphere of influence (which includes the project). Table 5.13-7 identifies the water supply demand of the project.

Table 5.13-7 Estimated Project Water Demand at Build-Out

Land Use	Water Demand (acre-feet per year)
Suburban Neighborhood Low Density (2,660 dwelling units)	1,622.60
Suburban Center (272 employees)	24.48
Elementary School and Middle/High School (East Natomas Education Complex) ¹	226.40
Parks	67.50
Total	1,940.98

¹ Water demand was estimated based on the Panhandle 2006 Water Supply Assessment.

Source: Panhandle Annexation and PUD Water Supply Assessment Checklist (Appendix I)

As identified in Table 5.13-6, City 2020 retail water demands are anticipated to be 122,229 acre-feet, while 2020 City water supplies are 275,917 acre-feet in all water year conditions. Wholesale water demands are anticipated to be 40,588 acre-feet in 2020. If the project reached full build-out by 2020, it would increase 2020 retail water demands of the City to 124,169.98 acre-feet and would be within 2020 City water supplies for normal, dry year, and multiple-dry year conditions. The USBR contract, in conjunction with the City's water rights, provides the City with a long-term reliable and secure surface water supply source.

As noted above, the Sacramento Groundwater Authority prepared a GMP for the portion of the North American Subbasin (North Basin). The GMP identifies that the North Basin is within its sustainable yield and

is not expected that new water demands would cause the North Basin to approach its average annual sustainable yield. Thus, water supply impacts would be **less than significant**.

Mitigation Measures

None required.

Impact 5.13-3: Wastewater treatment capacity impacts

The project's wastewater treatment demands would be within the wastewater treatment capacity of the SRWTP. No additional treatment facilities would be required. This impact would be **less than significant**.

The project is located within the Sacramento Area Sewer District and would obtain wastewater treatment service from the SRWTP. The Sanitary Sewer Study Level Three for the Natomas Panhandle identifies that the project average dry weather flow is 0.891 mgd and peak wet weather flow of 2.24 mgd.

SRWTP is permitted to treat an average dry weather flow (ADWF) of 181 mgd. The facility's 2014 ADWF was approximately 106 mgd (City of Sacramento 2016b). The project would not exceed capacity of the WWTP or trigger improvements to the WWTP that could result in environmental impacts. Thus, this impact would be **less than significant**.

Mitigation Measures

None required.

Impact 5.13-4: Solid waste service impacts

Implementation of the project would require solid waste disposal services from the City during construction and operation of the project. There is adequate landfill capacity to accommodate the project at build-out. This impact would be **less than significant**.

Table 5.13-8 provides an estimate of solid waste disposal for project operations at build-out based on 2015 disposal rates for the City identified by CalRecycle (CalRecycle 2017a). This assumes current City waste diversion and recycling programs would continue to be implemented (e.g., City Planning and Development Code Section 17.616.030 that specifies recycling volume requirements for new development).

As shown in Table 5.13-8, the project would generate approximately 23.74 tons per day of solid waste for disposal. This would increase the City's 2015 solid waste disposal rate of 1,392.37 tons per day to 1,416.11 tons per day. There is adequate capacity to accommodate the project's solid waste generation as this would be 0.1% of the total combined daily permitted capacity of approximately 23,823 tons per day of the Kiefer, Forward, L and D, and Yolo County Central landfills. In addition, these landfills have 143.03 million cubic yards of remaining capacity to accommodate solid waste.

Table 5.13-8 Estimated Project Solid Waste Disposal at Build-Out

Land Use	Tons Per Day	Tons Per Year
Suburban Neighborhood Low Density (2,660 dwelling units/7,182 residents) ¹	20.83	7,602.95
Suburban Center (272 employees) ²	1.26	459.90
Elementary School and Middle/High School (East Natomas Education Complex) (3,300 students) ³	1.65	602.25
Total	23.74	8,665.10

¹ City of Sacramento 2015 solid waste disposal factor of 5.8 pounds per day per person.

² City of Sacramento 2015 solid waste disposal factor of 9.3 pounds per day per person.

³ CalRecycle Estimate Solid Generation Rate: schools factor of 1 pound per day per student.

Source: CalRecycle 2017a and b

In addition to the solid waste generation from project operations, construction activities would generate solid waste from excess/unused building materials, demolition waste from the existing Krumenacher Ranch structures, packing materials, and other related sources. City Code Section 17.616.020 requires that a demolition and construction plan be developed for the project to address the recycling of construction waste to reduce construction solid waste disposal at landfills. Construction solid waste generation would be temporary and would not exceed daily permitted capacities of the regions landfills.

Sufficient landfill capacity exists to accommodate project construction and operational solid waste needs without the need for new or expanded facilities. Thus, this impact would be **less than significant**.

Mitigation Measures

None required.

5.13.4 Cumulative Setting, Impacts, and Mitigation

CUMULATIVE SETTING

The utilities cumulative setting consists of the City and its water service area, Sacramento Regional County Sanitation District service area, and the Sacramento region. The existing and projected future urban development in the region is expected to further contribute to the increased demand for utility services. The cumulative impact takes into account planned and proposed development anticipated in the County (see Section 5.0 for a further description of cumulative growth conditions).

CUMULATIVE IMPACTS AND MITIGATION MEASURES

Impact 5.13-5: Cumulative water supply impacts

Implementation of the project in combination with potential development in the City's service area and wholesale water customers would further increase the demand for water service. Pursuant to the City's 2015 Urban Water Management Plan, there would be adequate water supply to meet anticipated water demands through the year 2040. This is a less-than-significant cumulative impact and the project's cumulative demands **would not be considerable** such that new significant cumulative impact would occur.

The City of Sacramento 2015 Urban Water Management Plan projects and evaluates water demands for the City's sphere of influence (which includes the project) as well as the Natomas Joint Vision area (currently known as Natomas North Precinct Master Plan) as part of its year 2035 and 2040 water demand projections. These water demand projections also include other large-scale projects within the City (e.g., Greenbriar and the Natomas Central Planned Unit Development) and water service to Metro Air Park. Table 5.13-6 identifies cumulative retail water demands for the City to be 162,029 acre-feet by the year 2040. Wholesale water demands are expected to 58,586 acre-feet by year 2040. As identified in Table 5.13-7, project water demands at build-out are anticipated to be 1,940.98 afy. Thus, the total water demand for the City with the project would be approximately as much as 222,556 acre-feet by the year 2040.

The City's projected available water supplies would be 294,419 afy by the year 2030 and through 2040 for normal, dry, and multiple-dry water year conditions (see Table 5.13-4). The City's contract with USBR, in conjunction with the City's water rights, provides the City with a reliable and secure surface water supply source. Thus, adequate water would be available to serve cumulative retail and wholesale water demands. This includes compliance with SGA's GMP for the North Basin.

The City's 2015 Urban Water Management Plan does acknowledge that the FWTP currently has distribution system capacity constraints that limits its distribution capacity to 110 mgd (FWTP has a diversion and treatment capacity of 160 mgd). The City is evaluating options for improving the distribution system to

ensure the ability to meet future demands (there are no existing supply issues with this constraint). There are also limits on diversions from the American River under certain conditions set forth under the “Conference Years” provisions of the Water Forum Agreement and the “Hodge Flow” criteria. These regulations do not limit the use of groundwater by the City or full diversion of Sacramento River water rights should allowed water extractions from American River be reduced during drought conditions. The proposed RiverArc Project, should it be approved, would also provide the City the ability to divert surface water from the Sacramento River when the Hodge flow restrictions are in place on the American River. Thus, the City does not anticipate future disruption of supplies as a result of these conditions.

Because the project and cumulative development would be within the City’s water supplies and the City would continue to improve its water distribution infrastructure, no significant cumulative water supply impacts would occur and the project’s cumulative demands **would not be considerable** such that new significant cumulative impact would occur.

Water distribution needs are a site-specific issue addressed under Impact 5.13-1 and no cumulative impacts are would occur.

Mitigation Measures

None required.

Impact 5.13-6: Cumulative wastewater service impacts

Implementation of the project in combination with potential development in the SRCSD’s service area would increase wastewater service demands. The SRWWTP has adequate capacity to accommodate projected future growth based on its current permits. This would be a less-than-significant cumulative impact and the project’s cumulative demands **would not be considerable** such that new significant cumulative impact would occur.

As identified under Impact 5.13-3, the SRWWTP is permitted to treat an ADWF of 181 mgd, while the facility’s 2014 ADWF was approximately 106 mgd. Future growth in the SRCSD service area will increase demands for wastewater service and will utilize the remaining capacity of the SRWWTP. The 181 mgd permitted capacity has been in effect since 1990. While the approved EchoWater project will result in improved effluent water quality, this project does not increase treatment capacity of SRWWTP. In the 1990s and early 2000s, the Sacramento Regional County Sanitation District considered capacity expansion from 181 to 218 mgd ADWF and had flows as high as 155 mgd ADWF, with expectations that treatment needs would increase. Since then, water conservation and a reduction in water use has reversed the growth in wastewater capacity use. The District expects per capita consumption to fall 25 percent over the next 20 years through the ongoing installation and use of water meters as well as compliance with water conservation measures. As such, substantial additional water conservation is expected throughout the District’s service area, putting off the expectation that the existing 181 mgd ADWF capacity will be exhausted at least year 2050. (Sacramento Regional Sanitation District 2014:6-2.)

Because there is adequate wastewater treatment capacity available in the SRWWTP to accommodate the project and future growth into the foreseeable future, this would be a less-than-significant cumulative impact and the project’s cumulative demands **would not be considerable** such that new significant cumulative impact would occur.

Wastewater conveyance facility needs are a site-specific issue addressed under Impact 5.13-1 and no cumulative impacts would occur.

Mitigation Measures

None required.

Impact 5.13-7: Cumulative solid waste service impacts

Implementation of the project in combination with development in the City and in the County would increase solid waste collection and disposal service demands. There is adequate landfill capacity to accommodate cumulative solid waste disposal needs. This is a less-than-significant cumulative impact and the project's cumulative demands **would not be considerable** such that new significant cumulative impact would occur.

As identified under Impact 5.13-4, the Kiefer, Forward, L and D, and Yolo County Central landfills have 143.03 million cubic yards of remaining capacity to accommodate solid waste that can accommodate the project under existing conditions. The Kiefer and Yolo County Central landfills are anticipated to have sufficient capacity to meet future solid waste disposal demands through the year 2035 (Kiefer) and 2081 (Yolo County Central). The project would also be subject to source reduction measures such as City Planning and Development Code Section 17.616.030 that specifies recycling volume requirements for new development.

There is adequate permitted landfill capacity available to accommodate the project and future growth into the foreseeable future. This is a less-than-significant cumulative impact and the project's cumulative demands **would not be considerable** such that new significant cumulative impact would occur.

Mitigation Measures

None required.

5.14 ENERGY

This section was prepared pursuant to CEQA Guidelines Section 15126 and Appendix F of the CEQA guidelines, which require that EIRs include a discussion of the potential energy impacts of projects. The analysis considers whether the Panhandle Annexation and PUD (project) would result in inefficient, wasteful, and unnecessary consumption of energy.

Energy related to the project would include energy directly consumed for space heating and cooling, and electric facilities and lighting at residential units, the elementary school, and retail land uses. Indirect energy consumption would be associated with the generation of electricity at power plants. Transportation-related energy consumption includes the use of fuels and electricity to power cars, trucks, and public transportation. Energy would also be consumed by equipment and vehicles used during project construction and routine maintenance activities.

5.14.1 Environmental Setting

PHYSICAL SETTING

Energy Facilities and Services in the Project Area

Electric services in the City and Sacramento County is provided by the Sacramento Municipal Utility District (SMUD), while natural gas services are provided by the Pacific Gas and Electric Company (PG&E). There are existing electrical and natural gas infrastructure facilities along Elkhorn Boulevard, Del Paso Road, Aimwell Avenue, Club Center Drive, Sorento Drive, and Sandmark Drive. High-voltage electrical power lines consisting of two sets of steel lattice towers supporting double-circuit 230 kilovolt (kV) lines owned by the Western Area Power Administration and a 115-kV line owned by SMUD within a 200-foot powerline easement that traverse the project area. SMUD is proposing improvements to its electric system that would consist of a new double circuit 69-kilovolt aboveground powerline adjacent to the existing 200-foot powerline easement within the project. This new powerline is not a direct component of the project. However, it would provide electrical capacity and reliability to the area.

Energy Types and Sources

In 2013, the world total energy consumption was about 543 quadrillion Btu, 18 percent of which occurred within the U.S. Fossil fuels provide approximately 80 percent of the energy used in the U.S., nuclear power provides about 8.5 percent, and renewable energy provides approximately 9.8 percent (U.S. Energy Information Administration [EIA] 2016, Barr 2001). California is the most populous state in the U.S., and its energy consumption is second only to Texas; however, California has the lowest per capita energy consumption rate in the U.S. California relies on a regional power system comprised of a diverse mix of natural gas, renewable, hydroelectric, and nuclear generation resources. Recent trends associated with energy use in California are discussed below.

Petroleum

Gasoline and diesel fuel sold in California for motor vehicles is refined in California to meet specific formulations required by the California Air Resources Board. Major petroleum refineries in California are concentrated in three counties: Contra Costa County in northern California, Kern County in central California, and Los Angeles County in southern California.

Natural Gas

One third of energy commodities consumed in California is natural gas. The natural gas market continues to evolve and service options expand, but its use falls mainly into four sectors – residential, commercial, industrial, and electric power generation. In addition, natural gas is an alternative to petroleum for use in

trucks, buses, and some cars. Alternative transportation-related vehicles are increasing in use by consumers along with the development of a safe, reliable refueling infrastructure (California Energy Commission [CEC] 2016).

In 2014, approximately 35 percent of all natural gas consumed in the State was used to generate electricity. Residential land uses represented approximately 17 percent of California's natural gas consumption with the balance consumed by the industrial, resource extraction, and commercial sectors (EIA 2014).

Electricity and Renewables

Power plants in California meet approximately 68 percent of the in-state electricity demand; hydroelectric power from the Pacific Northwest provides another 12 percent; and power plants in the southwestern U.S. provide another 20 percent (EIA 2014). The contribution of in-state and out-of-state power plants depends upon, among other factors, the precipitation that occurred in the previous year and the corresponding amount of hydroelectric power that is available. SMUD is the primary electricity supplier in Sacramento County.

California regulations require that electricity consist of 33 percent renewables by 2020 and 50 percent renewables by 2030 for all electricity retailers in the state. As of July 2016, the California electricity system was powered by 21.9 percent renewables, including biomass, geothermal, small hydroelectric, solar, and wind. In-state generation of electricity consisted of 24.5 percent renewables (CEC 2016).

Alternative Fuels

A variety of alternative fuels are used to reduce demand for petroleum-based fuel. The use of these fuels is encouraged through various statewide regulations and plans (e.g., Low Carbon Fuel Standard, AB 32 Scoping Plan). Conventional gasoline and diesel may be replaced (depending on the capability of the vehicle) with many transportation fuels, including:

- ▲ biodiesel,
- ▲ electricity,
- ▲ ethanol (E-10 and E-85),
- ▲ hydrogen,
- ▲ natural gas (methane in the form of compressed and liquefied natural gas),
- ▲ propane,
- ▲ renewable diesel (including biomass-to-liquid),
- ▲ synthetic fuels, and
- ▲ gas-to-liquid and coal-to-liquid fuels.

California has a growing number of alternative fuel vehicles through the joint efforts of the California Energy Commission (CEC), California Air Resources Board, local air districts, federal government, transit agencies, utilities, and other public and private entities. As of September 2016, California contained nearly 14,000 alternative fueling stations (AFDC 2017).

COMMERCIAL AND RESIDENTIAL ENERGY USE

Homes built between 2000 and 2015 used 14 percent less energy per square foot than homes built in the 1980s, and 40 percent less energy per square foot than homes built before 1950. However, the increase size of newer homes has offset these efficiency improvements. Primary energy consumption in the residential sector total 21 quadrillion Btu in 2009 (the latest year the EIA's *Residential Energy Consumption Survey* was completed), equal to 54 percent of consumption in the buildings sector and 22 percent of total primary energy consumption in the U.S. Energy consumption increased 24 percent from 1990 to 2009. However, because of projected improvements in building and appliance efficiency, the EIA 2012 Annual Energy Outlook forecast a 13 percent increase in energy consumption from 2009 to 2035 (EIA 2016).

Commercial buildings represent just under one-fifth of U.S. energy consumption with office space, retail, and educational facilities representing about half of commercial sector energy consumption. In aggregate,

commercial buildings consumed 46 percent of building energy consumption and approximately 19 percent of U.S. energy consumption. In comparison, the residential sector consumed approximately 22 percent of U.S. energy consumption (U.S. Department of Energy 2012).

ENERGY USE FOR TRANSPORTATION

Transportation is the second largest energy consumer nationwide, accounting for 27 percent of the total national energy use (U.S. Department of Energy 2016). On-road vehicles are estimated to consume approximately 80 percent of California's transportation energy demand, with cars, trucks, and buses accounting for nearly all of the on-road fuel consumption. Petroleum products (gasoline, diesel, jet fuel) account for almost 99 percent of the energy used in California by the transportation sector, with the rest provided by ethanol, natural gas, and electricity (Bureau of Transportation Statistics 2015).

On-road vehicles use about 90 percent of the petroleum consumed in California. The California Department of Transportation (Caltrans) projected 782 million gallons of gasoline and diesel were consumed in Sacramento County in 2015, an increase of approximately 88 million gallons of fuel from 2010 levels (Caltrans 2008).

Vehicle Miles Traveled and Gasoline Consumption

According to Caltrans, total gasoline consumption in California is expected to increase 57 percent from 2007 to 2030, and the number of vehicle miles traveled (VMT) is expected to increase 61 percent over the same time (Caltrans 2009). As noted in the Regulatory Setting of this section, several State mandates and efforts, such as SB 375, seek to reduce VMT. Fuel consumption per capita in California decreased by nearly 11 percent from 2008 to 2011 (Bureau of Transportation Statistics 2015). Despite the progress in reducing per capita VMT and per capita fuel consumption, the continued projected increases in total fuel consumption and VMT can be attributed to the overall increase in population; see Section 5.11, "Transportation and Circulation," for more information on VMT and other travel-related data.

Total gasoline using in California varies from year to year due to a variety of factors such as gas prices, periods of economic growth and decline, and fuel economy of vehicles. Between January 2007 and May 2016, an average of approximately 672 billion gallons of gasoline were purchased in California. During this time, the volume of gasoline purchased ranged from a minimum of approximately 1.1 billion gallons in February 2013 to a maximum of approximately 1.37 billion gallons in August 2007 (California State Board of Equalization 2016).

Energy Used by Private and Commercial Vehicles

Commercial vehicles, generally composed of light-, medium-, and heavy-duty trucks, are typically fueled by diesel or gasoline and are part of the general fleet mix of vehicles present within the Sacramento region transportation system.

Average fuel economy is expected to increase for automobiles and all types of trucks. The federal Corporate Average Fuel Economy (CAFE) is the required average fuel economy for a vehicle manufacturer's entire fleet of passenger cars and light-duty trucks for each model year. For many years, the standard for passenger automobile was 27.5 miles per gallon (mpg), and the standard for light-duty trucks, a classification that also includes sport utility vehicles (SUVs) under 8,500 pounds, rose to 22.5 mpg for 2008 models. Effective with the 2011 model year, the CAFE standard was revised from a single number to a model-specific formulation based on the size of the vehicle, in square feet (wheelbase times track, or the distance between the axles multiplied by the distance between the wheels of each axle), referred to as the vehicle's "footprint." For 2012, the average CAFE standard for passenger cars is 33.3 mpg, while for light-duty trucks it is 25.4 mpg (Federal Register 2010).

ENERGY USE AND CLIMATE CHANGE

Scientists and climatologists have produced evidence that the burning of fossil fuels by vehicles, power plants, industrial facilities, residences, and commercial facilities has led to an increase of the earth's temperature. For an analysis of greenhouse gas production and the project's impacts on climate change, refer to Section 5.6, "Greenhouse Gas Emissions and Climate Change."

5.14.2 Regulatory Setting

Federal and State agencies regulate energy consumption through various policies, standards, and programs. At the local level, individual cities and counties establish policies in their general plans and climate action plans related to the energy efficiency of new development and land use planning and to the use of renewable energy sources.

Energy conservation is embodied in many federal, state, and local statutes and policies. At the federal level, energy standards apply to numerous products (e.g., the U.S. Environmental Protection Agency's (EPA) EnergyStar™ program) and transportation (e.g., fuel efficiency standards). At the state level, Title 24 of the California Code of Regulations sets forth energy standards for buildings. Further, the State provides rebates/tax credits for installation of renewable energy systems, and offers the Flex Your Power program promotes conservation in multiple areas.

FEDERAL

Energy Policy and Conservation Act, and CAFE Standards

The Energy Policy and Conservation Act of 1975 established nationwide fuel economy standards to conserve oil. Pursuant to this Act, the National Highway Traffic and Safety Administration, part of the U.S. Department of Transportation (DOT), is responsible for revising existing fuel economy standards and establishing new vehicle economy standards.

The Corporate Average Fuel Economy (CAFE) program was established to determine vehicle manufacturer compliance with the government's fuel economy standards. Compliance with CAFE standards is determined based on each manufacturer's average fuel economy for the portion of their vehicles produced for sale in the U.S. EPA calculates a CAFE value for each manufacturer based on the city and highway fuel economy test results and vehicle sales. The CAFE values are a weighted harmonic average of the EPA city and highway fuel economy test results. Based on information generated under the CAFE program, DOT is authorized to assess penalties for noncompliance. Under the Energy Independence and Security Act of 2007 (described below), the CAFE standards were revised for the first time in 30 years.

Energy Policy Act of 1992

The Energy Policy Act of 1992 (EPAAct) was passed to reduce the country's dependence on foreign petroleum and improve air quality. EPAAct includes several parts intended to build an inventory of alternative fuel vehicles (AFVs) in large, centrally-fueled fleets in metropolitan areas. EPAAct requires certain federal, state, and local government and private fleets to purchase a percentage of light-duty AFVs capable of running on alternative fuels each year. In addition, financial incentives are also included in EPAAct. Federal tax deductions will be allowed for businesses and individuals to cover the incremental cost of AFVs. State are also required by the act to consider a variety of incentive programs to help promote AFVs.

Energy Policy Act of 2005

The Energy Policy Act of 2005 provides renewed and expanded tax credits for electricity generated by qualified energy sources, such as landfill gas; provides bond financing, tax incentives, grants, and loan guarantees for clean renewable energy and rural community electrification; and establishes a federal purchase requirement for renewable energy.

Energy Independence and Security Act of 2007

The Energy Independence and Security Act of 2007 is designed to improve vehicle fuel economy and help reduce U.S. dependence on oil. It represents a major step forward in expanding the production of renewable fuels, reducing dependence on oil, and confronting global climate change. The Energy Independence and Security Act of 2007 increases the supply of alternative fuel sources by setting a mandatory Renewable Fuel Standard requiring fuel producers to use at least 36 billion gallons of biofuel in 2022, which represents a nearly five-fold increase over current levels; and reduces U.S. demand for oil by setting a national fuel economy standard of 35 miles per gallon by 2020—an increase in fuel economy standards of 40 percent.

By addressing renewable fuels and CAFE standards, the Energy Independence and Security Act of 2007 will build on progress made by the Energy Policy Act of 2005 in setting out a comprehensive national energy strategy for the 21st century.

STATE

Warren-Alquist Act

The 1975 Warren-Alquist Act established the California Energy Resources Conservation and Development Commission, now known as CEC. The Act established state policy to reduce wasteful, uneconomical, and unnecessary uses of energy by employing a range of measures. The California Public Utilities Commission (CPUC) regulates privately-owned utilities in the energy, rail, telecommunications, and water fields.

State of California Energy Plan

CEC is responsible for preparing the State Energy Plan, which identifies emerging trends related to energy supply, demand, conservation, public health and safety, and the maintenance of a healthy economy. The current plan is the 1997 California Energy Plan. The plan calls for the State to assist in the transformation of the transportation system to improve air quality, reduce congestion, and increase the efficient use of fuel supplies with the least environmental and energy costs. To further this policy, the plan identifies a number of strategies, including assistance to public agencies and fleet operators in implementing incentive programs for zero-emission vehicles and addressing their infrastructure needs; and encouragement of urban design that reduces VMT and accommodates pedestrian and bicycle access.

Assembly Bill 2076: Reducing Dependence on Petroleum

Pursuant to Assembly Bill (AB) 2076 (Chapter 936, Statutes of 2000), CEC and the California Air Resources Board (CARB) prepared and adopted a joint agency report in 2003, *Reducing California's Petroleum Dependence*. Included in this report are recommendations to increase the use of alternative fuels to 20 percent of on-road transportation fuel use by 2020 and 30 percent by 2030, significantly increase the efficiency of motor vehicles, and reduce per capita VMT (CEC; ARB 2003). Further, in response to the CEC's 2003 and 2005 *Integrated Energy Policy Reports*, Governor Davis directed CEC to take the lead in developing a long-term plan to increase alternative fuel use.

A performance-based goal of AB 2076 was to reduce petroleum demand to 15 percent below 2003 demand.

Integrated Energy Policy Report

Senate Bill (SB) 1389 (Chapter 568, Statutes of 2002) required CEC to: “[C]onduct assessments and forecasts of all aspects of energy industry supply, production, transportation, delivery and distribution, demand, and prices. The Energy Commission shall use these assessments and forecasts to develop energy policies that conserve resources, protect the environment, ensure energy reliability, enhance the state's economy, and protect public health and safety” (Public Resources Code Section 25301(a)). This work culminated in the Integrated Energy Policy Report (IEPR).

CEC adopts an IEPR every two years and an update every other year. The 2015 IEPR is the most recent IEPR, which was adopted February 24, 2016. The 2015 IEPR provides a summary of priority energy issues currently facing the State, outlining strategies and recommendations to further the State's goal of ensuring

reliable, affordable, and environmentally-responsible energy sources. Energy topics covered in the report include progress toward statewide renewable energy targets and issues facing future renewable development; efforts to increase energy efficiency in existing and new buildings; progress by utilities in achieving energy efficiency targets and potential; improving coordination among the State's energy agencies; streamlining power plant licensing processes; results of preliminary forecasts of electricity, natural gas, and transportation fuel supply and demand; future energy infrastructure needs; the need for research and development efforts to statewide energy policies; and issues facing California's nuclear power plants.

Senate Bill 1078: California Renewables Portfolio Standard Program

SB 1078 (Chapter 516, Statutes of 2002) establishes a renewable portfolio standard (RPS) for electricity supply. The RPS requires that retail sellers of electricity, including investor-owned utilities and community choice aggregators, provide 20 percent of their supply from renewable sources by 2017. This target date was moved forward by SB 1078 to require compliance by 2010. In addition, electricity providers subject to the RPS must increase their renewable share by at least 1 percent each year. The outcome of this legislation will impact regional transportation powered by electricity. As of 2016, the State has reported that 21 percent of electricity is sourced from certified renewable sources (see Section 5.14.1.2, "Environmental Setting").

Senate Bill X1-2: California Renewable Energy Resources Act

SB X1-2 of 2011 requires all California utilities to generate 33 percent of their electricity from renewables by 2020. SB X1-2 sets a three-stage compliance period requiring all California utilities, including independently-owned utilities, energy service providers, and community choice aggregators, to generate 20 percent of their electricity from renewables by December 31, 2013; 25 percent by December 31, 2016; and 33 percent by December 31, 2020. SB X1-2 also requires the renewable electricity standard to be met increasingly with renewable energy that is supplied to the California grid from sources within, or directly proximate to, California. SB X1-2 mandates that renewables from these sources make up at least 50 percent of the total renewable energy for the 2011-2013 compliance period, at least 65 percent for the 2014-2016 compliance period, and at least 75 percent for 2016 and beyond.

Senate Bill 350: Clean Energy and Pollution Reduction Act of 2015

The Clean Energy and Pollution Reduction Act of 2015 (SB 350) requires the amount of electricity generated and sold to retail customers per year from eligible renewable energy resources to be increased to 50 percent by December 31, 2030. This act also requires doubling of the energy efficiency savings in electricity and natural gas for retail customers through energy efficiency and conservation by December 31, 2030.

Energy Action Plan

The first Energy Action Plan (EAP) emerged in 2003 from a crisis atmosphere in California's energy markets. The State's three major energy policy agencies (CEC, CPUC, and the Consumer Power and Conservation Financing Authority [established under deregulation and now defunct]) came together to develop one high-level, coherent approach to meeting California's electricity and natural gas needs. It was the first time that energy policy agencies formally collaborated to define a common vision and set of strategies to address California's future energy needs and emphasize the importance of the impacts of energy policy on the California environment.

In the October 2005 *Energy Action Plan II*, CEC and CPUC updated their energy policy vision by adding some important dimensions to the policy areas included in the original EAP, such as the emerging importance of climate change, transportation-related energy issues and research and development activities. The CEC recently adopted an update to the EAP II in February 2008 that supplements the earlier EAPs and examines the State's ongoing actions in the context of global climate change.

Assembly Bill 1007: State Alternative Fuels Plan

AB 1007 (Chapter 371, Statutes of 2005) required CEC to prepare a state plan to increase the use of alternative fuels in California. CEC prepared the State Alternative Fuels Plan (SAF Plan) in partnership with ARB and in consultation with other state, federal, and local agencies. The SAF Plan presents strategies and

actions California must take to increase the use of alternative non-petroleum fuels in a manner that minimizes the costs to California and maximizes the economic benefits of in-state production. The SAF Plan assessed various alternative fuels and developed fuel portfolios to meet California's goals to reduce petroleum consumption, increase alternative fuel use, reduce greenhouse gas (GHG) emissions, and increase in-state production of biofuels without causing a significant degradation of public health and environmental quality.

Executive Order S-06-06

Executive Order (EO) S-06-06, signed on April 25, 2006, establishes targets for the use and production of biofuels and biopower, and directs state agencies to work together to advance biomass programs in California while providing environmental protection and mitigation. The Executive Order establishes the following target to increase the production and use of bioenergy, including ethanol and biodiesel fuels made from renewable resources: produce a minimum of 20 percent of its biofuels within California by 2010, 40 percent by 2020, and 75 percent by 2050. The Executive Order also calls for the State to meet a target for use of biomass electricity. The 2011 Bioenergy Action Plan identifies those barriers and recommends actions to address them so that the State can meet its clean energy, waste reduction, and climate protection goals. The 2012 Bioenergy Action Plan updates the 2011 plan and provides a more detailed action plan to achieve the following goals:

- ▲ increase environmentally- and economically-sustainable energy production from organic waste;
- ▲ encourage development of diverse bioenergy technologies that increase local electricity generation, combined heat and power facilities, renewable natural gas, and renewable liquid fuels for transportation and fuel cell applications;
- ▲ create jobs and stimulate economic development, especially in rural regions of the state; and
- ▲ reduce fire danger, improve air and water quality, and reduce waste.

As of 2015, 3.2 percent of the total electricity system power in California was derived from biomass.

California Green Building Standards

California Code of Regulations, Title 24, Part 6, is California's Energy Efficiency Standards for Residential and Non-Residential Buildings. Title 24 was established by CEC in 1978 in response to a legislative mandate to create uniform building codes to reduce California's energy consumption, and provide energy efficiency standards for residential and non-residential buildings. In 2013, CEC updated Title 24 standards with more stringent requirements, effective July 1, 2014. All buildings for which an application for a building permit is submitted on or after July 1, 2014 must follow the 2013 standards. Energy efficient buildings require less electricity; therefore, increased energy efficiency reduces fossil fuel consumption and decreases greenhouse gas emissions. The CEC *Impact Analysis for California's 2013 Building Energy Efficiency Standards* estimates that the 2013 standards are 23.3 percent more efficient than the previous 2008 standards for residential construction and 21.8 percent more efficient for non-residential construction. In 2016, CEC updated Title 24 standards again, effective January 1, 2017. While the impact analysis of these standards has not yet been released, CEC estimates that the 2016 standards are 28 percent more efficient than 2013 standards for residential construction and are 5 percent more efficient for non-residential construction. The building efficiency standards are enforced through the local plan check and building permit process. Local government agencies may adopt and enforce additional energy standards for new buildings as reasonably necessary due to local climatologic, geologic, or topographic conditions, provided that these standards exceed those provided in Title 24.

Assembly Bill 32, Climate Change Scoping Plan and Update

In December 2008, ARB adopted its Climate Change Scoping Plan, which contains the main strategies California will implement to achieve reduction of approximately 118 million metric tons (MMT) of CO₂-equivalent (CO₂e) emissions, or approximately 21.7 percent from the State's projected 2020 emission level

of 545 MMT of CO₂e under a business-as-usual scenario (this is a reduction of 47 MMT CO₂e, or almost 10 percent, from 2008 emissions). In May 2014, ARB released and has since adopted the *First Update to the Climate Change Scoping Plan* to identify the next steps in reaching AB 32 goals and evaluate progress that has been made between 2000 and 2012 (CARB 2014:4 and 5). According to the update, California is on track to meet the near-term 2020 GHG limit and is well positioned to maintain and continue reductions beyond 2020 (CARB 2014:ES-2). The update also reports the trends in GHG emissions from various emissions sectors (e.g., transportation, building energy, agriculture).

On January 20, 2017, ARB released its proposed 2017 Climate Change Scoping Plan Update, which lays out the framework for achieving the 2030 reductions as established in more recent legislation (discussed below). The proposed 2017 Scoping Plan Update identifies the GHG reductions needed by each emissions sector to achieve a statewide emissions level that is 40 percent below 1990 levels before 2030.

The measures identified in the proposed 2017 Climate Change Scoping Plan Update will have the co-benefit of reducing California's dependency of fossil fuels and making land use development and transportation systems more energy efficient. At the time of writing this environmental document, ARB has not yet approved its proposed 2017 Scoping Plan Update. More details about the statewide GHG reduction goals and Scoping Plan measures are provided in the regulatory setting of Section 5.6, "Greenhouse Gas Emissions and Climate Change."

Senate Bill 375

Senate Bill 375 (SB 375), signed by the Governor in September 2008, aligns regional transportation planning efforts, regional GHG emission reduction targets, and land use and housing allocation. SB 375 requires metropolitan planning organizations (MPOs) to adopt a Sustainable Communities Strategy (SCS) or Alternative Planning Strategy, showing prescribed land use allocation in each MPO's Regional Transportation Plan. ARB, in consultation with the MPOs, is to provide each affected region with reduction targets for GHGs emitted by passenger cars and light trucks in their respective regions for 2020 and 2035. Implementation of SB 375 will have the co-benefit of reducing California's dependency of fossil fuels and making land use development and transportation systems more energy efficient.

The Sacramento Area Council of Governments (SACOG) serves as the MPO for Sacramento, Placer, El Dorado, Yuba, Sutter, and Yolo Counties, excluding those lands located in the Lake Tahoe Basin. The project site is in Sacramento County. SACOG adopted its Metropolitan Transportation Plan/Sustainable Communities Strategy (MTP/SCS) 2035 in 2012, and completed an update adopted on February 18, 2016. SACOG was tasked by ARB to achieve a 9 percent per capita reduction compared to 2012 emissions by 2020 and a 16 percent per capita reduction by 2035, which ARB confirmed the region would achieve by implementing its SCS (CARB 2013). The MTP/SCS forecasted land use development by community types: Center and Corridor Communities, Established Communities, Developing Communities, Rural Residential Communities, and Lands Not Identified for Development in the MTP/SCS Planning Period.

Executive Order B-30-15

On April 20, 2015 Governor Edmund G. Brown Jr. signed Executive Order B-30-15 to establish a California GHG reduction target of 40 percent below 1990 levels by 2030. The Governor's executive order aligns California's GHG reduction targets with those of leading international governments such as the 28-nation European Union which adopted the same target in October 2014. California is on track to meet or exceed the target of reducing GHG emissions to 1990 levels by 2020, as established in the California Global Warming Solutions Act of 2006 (Assembly Bill 32, discussed above). California's new emission reduction target of 40 percent below 1990 levels by 2030 will make it possible to reach the ultimate goal of reducing emissions 80 percent below 1990 levels by 2050. This is in line with the scientifically established levels needed in the U.S. to limit global warming below 2 degrees Celsius, the warming threshold at which major climate disruptions are projected, such as super droughts and rising sea levels.

Senate Bill 32 and Assembly Bill 197 of 2016

In August 2016, Governor Brown signed SB 32 and AB 197, which serve to extend California's GHG reduction programs beyond 2020. SB 32 amended the Health and Safety Code to include Section 38566, which contains language to authorize ARB to achieve a statewide GHG emission reduction of at least 40 percent below 1990 levels by no later than December 31, 2030. SB 32 codified the targets established by EO B-30-15 for 2030, which set the next interim step in the State's continuing efforts to pursue the long-term target expressed in EOs S-3-05 and B-30-15 of 80 percent below 1990 emissions levels by 2050. Achievement of these goals will have the co-benefit of reducing California's dependency of fossil fuels and making land use development and transportation systems more energy efficient.

Advanced Clean Cars Program

In January 2012, ARB approved the Advanced Clean Cars program which combines the control of GHG emissions and criteria air pollutants, as well as requirements for greater numbers of zero-emission vehicles, into a single package of standards for vehicle model years 2017 through 2025. The new rules strengthen the GHG standard for 2017 models and beyond. This will be achieved through existing technologies, the use of stronger and lighter materials, and more efficient drivetrains and engines. The program's zero-emission vehicle regulation requires battery, fuel cell, and/or plug-in hybrid electric vehicles to account for up to 15 percent of California's new vehicle sales by 2025. The program also includes a clean fuels outlet regulation designed to support the commercialization of zero-emission hydrogen fuel cell vehicles planned by vehicle manufacturers by 2015 by requiring increased numbers of hydrogen fueling stations throughout the state. The number of stations will grow as vehicle manufacturers sell more fuel cell vehicles. By 2025, when the rules will be fully implemented, the statewide fleet of new cars and light trucks will emit 34 percent fewer global warming gases and 75 percent fewer smog-forming emissions than the statewide fleet in 2016 (CARB 2016).

LOCAL

City of Sacramento

Sacramento 2035 General Plan

The City of Sacramento 2035 General Plan includes the following policies applicable to the energy efficiency of new development and reducing community-wide energy consumption in Sacramento:

- ▲ Policy U 6.1.5. Energy Consumption per Capita. The City shall encourage residents and businesses to consume 25 percent less energy by 2030 compared to the baseline year of 2005.
- ▲ Policy U 6.1.6. Renewable Energy. The City shall encourage the installation and construction of renewable energy systems and facilities such as wind, solar, hydropower, geothermal, and biomass facilities.
- ▲ Policy U 6.1.7. Solar Access. The City shall ensure, to the extent feasible, that sites, subdivisions, landscaping, and buildings are configured and designed to maximize passive solar access.
- ▲ Policy U 6.1.8. Other Energy Generation Systems. The City shall promote the use of locally shared solar, wind, and other energy generation systems as part of new planned developments.
- ▲ Policy U 6.1.15. Energy Efficiency Appliances. The City shall encourage builders to supply EnergyStar™ appliances and HVAC [heating, ventilation, and cooling] systems in all new residential developments, and shall encourage builders to install high-efficiency boilers where applicable, in all new non-residential developments.

Sacramento Climate Action Plan

The Sacramento Climate Action Plan (CAP) was adopted on February 14, 2012 by the Sacramento City Council and was incorporated into the 2035 General Plan. The CAP includes GHG emission reduction

targets, strategies, and implementation measures developed to help the city reach these targets. Reduction strategies address GHG emissions associated with transportation and land use, energy, water, waste management and recycling, agriculture, and open space. The City's goals related to energy use from buildings and transportation are described below.

- ▲ Improve accessibility and system connectivity by removing physical and operational barriers to safe travel;
- ▲ Reduce reliance on the private automobile;
- ▲ Use emerging transportation technologies and services to increase transportation system efficiency;
- ▲ Design, construct, and maintain a universally accessible, safe, convenient, integrated and well-connected pedestrian system that promotes walking;
- ▲ Create and maintain a safe, comprehensive, and integrated transit system as an essential component of a multimodal transportation system;
- ▲ Support the development and provision of privately funded and/or privately-operated transit services that support citywide and regional goals by reducing single-occupant vehicle (SOV) trips, vehicle miles traveled and GHG emissions;
- ▲ The City and other agencies within jurisdiction over roadways within City limits shall plan, design, operate and maintain all streets and roadways to accommodate and promote safe and convenient travel for all users—pedestrians, bicyclists, transit riders, and persons of all abilities, as well as freight and motor vehicle drivers;
- ▲ Enhance the quality of life within existing neighborhoods through the use of neighborhood traffic management and traffic calming techniques, while recognizing the City's desire to provide a grid system that creates a high level of connectivity;
- ▲ Maintain an interconnected system of streets that allows travel on multiple routes by multiple modes, balancing access, mobility and place-making functions with sensitivity to the existing and planned land use context of each corridor and major street segment;
- ▲ Create and maintain a safe, comprehensive, and integrated bicycle system and set of support facilities throughout the city that encourage bicycling that is accessible to all. Provide bicycle facilities, programs and services and implement other transportation and land use policies as necessary to achieve the City's bicycle mode share goal as documented in the Bicycle Master Plan; and
- ▲ Provide and manage parking such that it balances the citywide goal of economic development, livable neighborhoods, sustainability, and public safety with the compact multi-modal urban environment prescribed by the General Plan.
- ▲ Provide for the energy needs of the city and decrease dependence on nonrenewable energy sources through energy conservation, efficiency, and renewable resource strategies.

5.14.3 Impacts and Mitigation Measures

SIGNIFICANCE CRITERIA

The following significance criteria area based on CEQA Guidelines Appendix F (energy), under which implementation of the project would have a potentially significant adverse impact if the project would:

- ▲ Result in wasteful, inefficient, or unnecessary consumption of energy, during project construction or operation, as evidenced by a failure to decrease overall per capita energy consumption or decrease reliance on fossil fuels such as coal, natural gas, and oil;
- ▲ Fail to incorporate feasible renewable energy or energy efficiency measures into building design, equipment use, transportation, or other project features, or otherwise fail to increase reliance on renewable energy sources; or
- ▲ Exceed the available capacities of energy supplies that require the construction of facilities.

METHODS AND ASSUMPTIONS

Levels of construction- and operation-related energy consumption by the project, measured in megawatt-hours of electricity, Therms of natural gas, gallons of gasoline, and gallons of diesel fuel. Energy consumption estimates were calculated using the California Emissions Estimator Model (CalEEMod) version 2016.3.1 computer program. Where project-specific information was not known, CalEEMod default values based on the project's location were used. Table 5.14-1 summarizes the levels of energy consumption for each year of construction and Table 5.14-2 summarizes the levels of energy consumption for the first year of operation during the buildout year of 2036. Table 5.14-3 summarizes the gasoline and diesel consumption estimated for the project in 2036.

Table 5.14-1 Construction Energy Consumption

Year	Diesel (Gallons)	Gasoline (Gallons)
2018	592,590	10,429,017
2019	490,915	14,961,712
2020	486,759	8,947,915
2021	484,434	8,905,781
2022	482,109	8,863,648
2023	482,109	8,863,648
2024	486,759	8,947,915
Total	3,505,615	69,919,636

Notes: Gasoline gallons include on-road gallons from worker trips. Diesel gallons include off-road equipment and on-road gallons from worker and vendor trips.

Source: Calculations by Ascent Environmental in 2017

Table 5.14-2 Operational Energy Consumption

Land Use/Energy Type	Energy Consumption	Units
Single Family Residential		
Electricity	23,522	MWh/year
Natural Gas	63,265	MMBtu/year
Suburban Center		
Electricity	1,184	MWh/year
Natural Gas	528	MMBtu/year
Elementary School		
Electricity	309	MWh/year
Natural Gas	611	MMBtu/year
Middle/High School		
Electricity	2,436	MWh/year
Natural Gas	4,809	MMBtu/year
All Land Uses		
Electricity	27,451	MWh/year
Natural Gas	69,213	MMBtu/year

Notes: MWh/year = megawatt-hours per year; MMBtu/year = million British thermal units per year.

Source: Calculations by Ascent Environmental in 2017

Table 5.14-3 Gasoline and Diesel Consumption in 2036

Vehicle Category	Gasoline (gal/year)	Diesel (gal/year)
Passenger Vehicles	566,018	5,925
Trucks	584,746	328,115
Buses	12,994	15,182
Other Vehicles	3,026	598
Total (All Vehicle Types)	1,166,783	349,820

Notes: gal/year = gallons per year.

Source: Calculations by Ascent Environmental in 2017

PROJECT IMPACTS AND MITIGATION MEASURES

Impact 5.14-1: Wasteful, inefficient, or unnecessary consumption of energy, during project construction or operation

The project would increase electricity and natural gas consumption at the site relative to existing conditions. However, City Code would require the project to generate at least 15 percent of the project's energy demand through on-site renewable systems (e.g., photovoltaic systems). The project would be required to meet the California Code of Regulations Title 24 standards for building energy efficiency. The project's design features bicycle and pedestrian infrastructure also would decrease VMT. Implementation of mitigation measures addressing greenhouse gases and transit needs would also improve the energy efficiency of the project. Construction energy consumption would be temporary and would not require additional capacity or increased peak or base period demands for electricity or other forms of energy. The project would not result in wasteful, inefficient, or unnecessary consumption of energy. Thus, the impact would be **less than significant**.

Appendix F of the State CEQA Guidelines requires the consideration of the energy implications of a project. CEQA requires mitigation measures to reduce "wasteful, inefficient and unnecessary" energy usage (Public Resources Code Section 21100, subdivision (b)(3)). Neither the law nor the State CEQA Guidelines establish criteria that define wasteful, inefficient, or unnecessary use. Compliance with California Code of Regulations Title 24 Energy Efficiency Standards would result in energy-efficient buildings. However, compliance with building codes does not adequately address all potential energy impacts during project construction and operation. For example, energy would be required to transport people and goods to and from the project site.

Construction-Related Energy

Energy would be required to construct the project, operate, and maintain construction equipment, and produce and transport construction materials. The one-time energy expenditure required to construct the physical buildings and infrastructure associated with the project would be nonrecoverable. Most energy consumption would result from operation of construction equipment and vehicle trips associated with commutes by construction workers and haul trucks supplying materials. An estimated 69,919,636 gallons of gasoline and 3,505,615 gallons of diesel would be consumed to enable project construction. The energy needs for project construction would be temporary and is not anticipated to require additional capacity or increase peak or base period demands for electricity or other forms of energy. Construction equipment use and associated energy consumption would be typical of that associated with construction of new residential and commercial projects in a suburban setting.

Building Energy

Operation of the project would be typical of residential, educational, and commercial uses requiring electricity and natural gas for lighting, space and water heating, appliances, and landscape maintenance activities. Indirect energy use would include wastewater treatment and solid waste removal. The project would increase electricity and natural gas consumption in the region relative to existing conditions and would construct new utility connections to existing electrical and natural gas facilities.

The project would meet the California Code of Regulations Title 24 standards for energy efficiency that are in effect at the time of construction that will continue to require improved building energy efficiency. The project would likely subject to 2016 Title 24 requirements and future 2020 Title 24 requirements. As required by the City of Sacramento Planning and Development Code, the project's residential component must generate at least 15 percent of the project's energy demand through on-site renewable systems (e.g., photovoltaic systems).

Implementation of Mitigation Measure 5.6-1a provided in Section 5.6, "Greenhouse Gas Emissions and Climate Change," would further improve the project's energy efficiency through measures such as increased use of on-site renewable energy, efficient lighting, energy efficient plumbing fixtures, and/or consideration of zero net energy development (if feasible). A combination of feasible measures would reduce wasteful energy consumption for buildings and improve energy efficiency of the project.

Transportation Energy

Fuel consumption associated with vehicle trips generated by the project would not be considered inefficient, wasteful, or unnecessary in comparison to other similar developments in the region. The regional estimated annual vehicle miles traveled (VMT) (51,919,790 miles) is based on the regional average for 2036 as reported in the Sacramento Area Council of Government's 2016 Metropolitan Transportation Plan/Sustainable Communities Strategy (2016). The project would generate a daily VMT of 142,246 would consume 349,820 gallons of diesel per year and 1,166,783 gallons of gasoline per year.

Fuel use estimates were calculated from the combination of fuel consumption rates and fuel mix by vehicle class from ARB's EMFAC2014 model with overall vehicle miles traveled and mode share by vehicle class modeled for the project in CalEEMod (see Section 5.2 "Air Quality," and Appendix J of this EIR). State and federal regulations regarding standards for vehicles in California are designed to reduce wasteful, unnecessary, and inefficient use of energy for transportation. The project involves the implementation of bicycle and pedestrian facilities, traffic calming measures, and a trip reduction program which reduces annual vehicle miles traveled and encourages a mode shift.

Section 5.11, "Transportation and Circulation," details project features that aim to reduce the project's VMT several through the implementation of bicycle and pedestrian facilities, detailed below:

- ▲ The project would establish on-street bike facility connections that would connect with on-street bike facilities on Del Paso Road, Mayfield Street, Aimwell Avenue, Club Center Drive, and Faletto Avenue. In addition, the project would establish a new off-street bike/pedestrian facility associated with the Ninos Parkway. These proposed bike facilities are consistent with the alignments set forth in the City's Bicycle Master Plan.
- ▲ The project includes the construction of new pedestrian facilities along City streets per City standards. Consistent with the City's Pedestrian Master Plan, the project would establish a new off-street bike/pedestrian facility associated with the Ninos Parkway. Sidewalks and off-street paths would provide pedestrian access throughout the project, and the proposed pedestrian facilities would connect to the existing pedestrian facilities abutting the site.

Mitigation Measure 5.6-1a would provide for adequate electric wiring and infrastructure in all single-family residential units to support a 240-volt electric vehicle charger and electric vehicle charging stations, similar or better than Level 2, in parking areas within the designated suburban center.

According to Appendix F of the CEQA Guidelines, the means to achieve the goal of conserving energy include decreasing overall per capita energy consumption, decreasing reliance on natural gas and oil, and increasing reliance on renewable energy sources. At least 15 percent of the project's energy demand would be generated through on-site renewable systems and the project's buildings would meet the Title 24 building efficiency standards in effect at the time of construction. These actions would reduce building energy consumption and would reduce per capita energy use compared to other similar projects.

Through the project's design to incorporate bicycle and pedestrian facilities and the implementation of increased transit availability, the project would not result in a wasteful or inefficient use of transportation-related energy.

The project's energy consumption through construction, building operation, or transportation would not be considered wasteful, inefficient, or unnecessary. This impact would be **less than significant**.

Mitigation Measures

No mitigation is required.

Impact 5.14-2: Demand for energy services and facilities

Adequate infrastructure and capacity exists adjacent to the project area that can meet the project's energy needs. Thus, this impact would be **less than significant**.

While the project provides no details on the extension of electrical and natural gas infrastructure into the project area, there are existing electrical and natural gas infrastructure facilities along Elkhorn Boulevard, Del Paso Road, Aimwell Avenue, Club Center Drive, Sorento Drive, and Sandmark Drive that are available for connection. It is not anticipated that additional off-site extension of facilities or improvements would be required. SMUD services are funded by developers who pay design and construction costs based on SMUD's existing rates, rules, and regulations. The project's impact to energy services and facilities would be **less-than-significant** because there are adequate facilities adjacent to the project area to supply energy to the project.

Mitigation Measures

No mitigation is required.

5.14.4 Cumulative Setting, Impacts, and Mitigation Measures

CUMULATIVE SETTING

The geographic area considered for cumulative impacts related to energy use includes the service areas for SMUD and PG&E. These providers employ various programs and mechanisms to support provision of these services to new development; various utilities charge connection fees and re-coup costs of new infrastructure through standard billings for services. There is currently sufficient infrastructure and energy supply to support existing demand. SMUD is planning to offset growth in peak demands through implementation of energy efficiency and conservation measures. Through a combination of increases in energy efficiency and power management strategies (e.g., importation of power from the grid during peak usage periods), SMUD is anticipated to maintain sufficient capacity to provide power through 2050. (City of Sacramento 2016:4.5-24)

CUMULATIVE IMPACTS AND MITIGATION MEASURES

Impact 5.14-3: Cumulative demand for energy services and facilities

The project, in combination with other development, would contribute to the increase demand for energy. However, it is expected that there would be adequate energy capacity through the year 2050. The project also includes design features to reduce transportation energy demands. Implementation of mitigation measures proposed would further improve the energy efficiency of the project and reduce its contribution to cumulative energy needs. Therefore, the project's contribution to cumulative energy demands **would not be cumulatively considerable**.

The cumulative context for energy usage is Sacramento County. The project, in combination with other development in Sacramento County, would contribute to the increased demand of energy. SMUD anticipates having adequate energy capacity through the year 2050.

The project would not trigger the need for new electrical or natural gas facilities because adequate facilities exist adjacent to the project. The project would further reduce its energy demand through compliance with the California Code of Regulations Title 24 standards for energy efficiency that are in effect at the time of construction. As required by the City of Sacramento Planning and Development Code, the project's residential component must generate at least 15 percent of the project's energy demand through on-site renewable systems (e.g., photovoltaic systems).

Implementation of Mitigation Measure 5.6-1a provided in Section 5.6, “Greenhouse Gas Emissions and Climate Change,” would further improve the energy efficiency of the project through increase use of on-site renewable energy, efficient lighting, energy efficient plumbing fixtures, and/or consideration of zero net energy development (if feasible). The combination of these measures would improve the energy efficiency of the project and reduce its contribution to the cumulative demand for energy from buildings.

The project transportation system design would reduce its contribution to cumulative transportation energy use through new on-street and off-street bicycle facilities that would interconnection with bicycle facilities in the North Natomas Community Plan area. This would reduce project VMT and associated fuel usage. Mitigation Measure 5.6-1a would reduce fuel usage by providing for infrastructure for electric vehicle charging at residences and the designated suburban center.

Therefore, the project’s contribution to cumulative energy demand impacts **would not be cumulatively considerable**.

Mitigation Measures

No mitigation is required.

6 REORGANIZATION

6.1 INTRODUCTION

The Reorganization chapter of the EIR summarizes setting information and identifies potential impacts related to reorganization of the project specific to the Sacramento Local Agency Formation Commission's (LAFCo) policies and standards related to the environment. A reorganization is defined as two or more changes of organization. Reorganization of the proposed project site consists of annexation of the project area to the City of Sacramento (City) and detachment from affected special districts. The project and cumulative environmental impacts of the conversion of the project area from agricultural/vacant land to suburban development are addressed in Sections 5.1 through 5.14 of this EIR.

Materials utilized to prepare this chapter include the Sacramento LAFCo *Policy, Standards, and Procedures Manual*, the *City of Sacramento 2035 General Plan*, Chapter 4, "Land Use, Population, and Housing," Section 5.1, "Agricultural Resources," Section 5.8, "Hydrology and Water Quality," and Section 5.10, "Public Service and Recreation."

6.2 ENVIRONMENTAL SETTING

6.2.1 Overview of Annexation Request

The project would involve the annexation of 589.4 acres (project area) of the total 1,424.7 acres that comprise the City's sphere of influence (SOI) in the North Natomas area (see Exhibit 3-5). The proposed annexation would create an 835.3-acre unincorporated island within the City. This reorganization would involve detachment of the 589.4 acres from the following service districts:

- ▲ detachment from Rio Linda Elverta Recreation and Parks District (RLERPD) (parks and recreation services);
- ▲ detachment from Natomas Fire Protection District (fire protection and emergency services); and
- ▲ detachment from Sacramento County Water Agency Zone 13 (water supply and drainage planning services);
- ▲ detachment from County Service Area No. 1 (street and highway lighting); and
- ▲ detachment from County Service Area No. 10 (enhanced transportation services).

6.2.2 Affordable Housing

A majority of the project's land area is undeveloped. Built features on-site include two existing home sites located near West Elkhorn Boulevard¹, high-voltage power lines consisting of two sets of steel lattice towers supporting double-circuit 230 kilovolt (kV) lines owned by the Western Area Power Administration and a 115-kV line owned by Sacramento Municipal Utility District (SMUD) within a 200-foot powerline easement, and the partially constructed East Natomas Education Complex (junior and senior high schools in the Twin Rivers Unified School District) that is not being utilized (see Exhibit 3-3). No affordable housing exists on the site.

¹ West Elkhorn Boulevard is also referred to as "Elkhorn Boulevard" in some instances in the Draft EIR.

6.2.3 Disadvantaged Unincorporated Communities

In 2011, Senate Bill (SB) 244 was enacted, resulting in changes to the Cortese-Knox-Hertzberg Local Government Reorganization Act of 2000 (Cortese-Knox-Hertzberg Act). LAFcos are now required to deny any application to annex to a city territory that is contiguous to a disadvantaged unincorporated community unless a second application is submitted to annex the disadvantaged community as well and LAFcos are required to evaluate disadvantaged unincorporated communities in a municipal service review. SB 244 defines “disadvantaged unincorporated community” as any area with 12 or more registered voters where the median household income is less than 80 percent of the statewide annual median.

The project is not located contiguous to any disadvantaged unincorporated communities; therefore, the project would not result in any impacts to said communities and disadvantaged unincorporated communities will not be addressed further.

6.2.4 Parks and Recreation

RIO LINDA ELVERTA RECREATION AND PARKS DISTRICT

The project area is currently located within the Rio Linda Elverta Recreation and Park District. The Rio Linda Elverta Recreation and Park District (RLERPD) was formed by the Sacramento County (County) Department of Parks and Recreation, during 1961 –1962 to provide parks and recreation services to the residents of the Rio Linda area. The Town of Elverta was later included by annexation to the growing area. The former County service areas were originally created by a mandate to provide autonomy with parks and recreation services. The goal of the mandate was to convert these areas to a dependent district, and ultimately to an independent district. As a result, the RLERPD became a dependent park district in 1990, and later became an independent district in 1993.

The RLERPD is located in the northern portion of the County and directly north of the City. RLERPD occupies approximately 30 square miles of land and consists of six planning areas. There are no parks within the project area, the closest RLERPD Park is Westside Park, which is less than three miles from the project area.

The RLERPD has an overall park service goal of five acres for every 1,000 residents in its planning area. In May 2005, the RLERPD’s level of service was 1.5 acres per 1,000 residents. The District has a current dedication requirement for new development of five acres per 1,000 residents.

CITY OF SACRAMENTO DEPARTMENT OF PARKS AND RECREATION

The City of Sacramento Parks and Recreation Department (SPRD) oversees and manages park and recreation resources within the city limits. The City currently owns and operates 226 parks and parkways totaling nearly 3,200 acres of land including developed and passive parks, golf courses, bikeways and trails, lakes/ponds and beaches, dog parks, community gardens, skate parks and other recreational facilities. The City also operates other types of recreational facilities including a senior center, numerous community centers, and several clubhouses (i.e., activity buildings available for rental by the public for small parties, gatherings, and meetings). Further details regarding existing City park facilities and park master planning are provided in Section 5.10, “Public Services and Recreation.”

6.2.5 Fire Protection

NATOMAS FIRE PROTECTION DISTRICT

The project area is currently located within the boundaries of the Natomas Fire Protection District (NFPD). The NFPD service area consists of 42 square miles north and west of current city limits. Since 1984, NFPD, a County agency, has contracted with the City to provide emergency, medical, rescue and fire protection services to the unincorporated North Natomas community. Under this contract most of the property tax collected for fire service is paid to the City. The NFPD maintains two fire stations at 7208 Elkhorn Boulevard and 746 West North Market Boulevard.

CITY OF SACRAMENTO FIRE DEPARTMENT

The City of Sacramento Fire Department (SFD) provides fire protection services to a 146.3-square-mile service area including the entire City as well as some unincorporated areas of County and holds jurisdiction over fire code compliance, monitoring and enforcement. These services include fire suppression, emergency medical services, fire prevention and investigation, hazardous materials response, search and rescue, and extrication within the city. Contracted areas within the SFD's jurisdiction include the NFPD and the Pacific Fruitridge Fire Protection District (PFFPD), both of which provide service outside of the City.

The SFD has 24 active stations within its service area. The project area is currently served and, with project implementation, would continue to be served by Fire Stations 18 and 30. Fire Station 18 is located south of Del Paso Road, approximately 1.2 miles from the project area, at 746 North Market Boulevard. The station is equipped with a Type I Engine which is staffed with four personnel each day including a company officer (captain), engineer, and two firefighters. Station 18 was one of seven SFD fire stations recommended for future replacement based on its failure to comply with the Essential Service Building Seismic Act. The SFD's capital improvement program includes a fire station replacement program which identifies funding sources for ongoing station replacement projects.

Fire Station 30 is located immediately west of the project area, at 1901 Club Center Drive in the incorporated portion of the North Natomas community. The station is equipped with a Type I engine, a truck, and an ambulance which are staffed each day with 10 personnel. Station 30 was constructed in 2005 with the intention of serving the growing population of the North Natomas area.

The SFD has 657 full-time equivalent employees with daily staffing including 24 engines, 8 trucks, one rescue, 14 medics, three battalion chiefs, and one EMS officer for a total daily staffing of 163 personnel. In 2015, the SFD responded to approximately 83,701 calls with the majority of calls for emergency medical service (49,451 calls or 59.1 percent of total). SFD has a goal to have its first responding company, which provides for fire suppression and paramedic services, arrive within four minutes.

The SFD maintains automatic aid agreements with all its neighboring agencies including the Sacramento Metropolitan Fire District and Cosumnes Fire. Under these automatic aid agreements, all related emergency calls are routed through a central dispatch center and the nearest apparatus are dispatched to emergency incidents, regardless of political jurisdiction.

6.2.6 Drainage

RECLAMATION DISTRICT 1000

Reclamation District 1000 (RD1000) is a State-Legislature-created special district that has been providing flood protection and public safety to the Natomas Basin since 1911. RD1000 is responsible for maintaining over 40 miles of levees surrounding the perimeter of the Natomas Basin to keep floodwaters from the Sacramento River, American River, Steelhead Creek/Natomas East Main Drain Canal, Pleasant

Grove Creek Canal, and Natomas Cross Canal out of the basin. RD1000 also operates and maintains hundreds of miles of canals and seven pump stations to collect and safely discharge stormwater runoff within the Natomas basin back into the Sacramento River.

The project area is in the North Natomas Comprehensive Drainage Plan (CDP) Service Area and Northgate Business Park Drainage Assessment District. Reclamation District 1000 (RD1000) is the principal agency responsible for conveying and pumping storm runoff from the Natomas Basin. Runoff from the urbanized areas of the basin is collected, conveyed, and pumped to RD1000 facilities (i.e., canals). The storm runoff is then conveyed in the RD1000 channel system to the RD1000 pumping facility located on the Garden Highway. At this point, the storm runoff is pumped into the Sacramento River.

In general, drainage in the project area trends east to west, in conformance with local topographic conditions, with the exception of lateral storm drains, interceptor canals, and outfalls. Drainage facilities on the project area include drainage canals, culverts, and two 60-inch drainage pipelines that discharge off-site of the project area. In addition to these facilities, a portion of the eastern boundary includes the North Natomas Levee associated with the NEMDC.

SACRAMENTO COUNTY WATER AGENCY, DRAINAGE DIVISION

The Sacramento County Water Agency is authorized to perform drainage, water supply and flood control. Zone 13 of the Sacramento County Water Agency was established in 1987 to perform studies related to water supply, drainage and flood control affecting all or part of the unincorporated areas of Sacramento (including the project area) and the City of Citrus Heights.

CITY OF SACRAMENTO DEPARTMENT OF UTILITIES

The City of Sacramento Department of Utilities provides storm drainage service to more than 125,000 customers throughout the city by using drain inlets, pumps and canals to move water off Sacramento streets directly to local creeks, streams and rivers to help limit street flooding.

6.2.7 Natural Resources

AGRICULTURAL LANDS

Public Resources Code Section 21060.1 defines “agricultural land” as: prime farmland, farmland of statewide importance, or unique farmland, as defined by the United States Department of Agriculture (USDA) land inventory and monitoring criteria, as modified for California. This definition is based on the USDA, Natural Resources Conservation Service (NRCS), Farmland Mapping and Monitoring Program (FMMP) and was used in Section 5.1, Agricultural Resources,” of this EIR, NRCS through the FMMP uses two systems to determine a soil’s agricultural productivity: The Soil Capability Classification System and the Storie Index Rating System.

These systems are described in greater detail below.

LAFCo has also established provisions for the consideration of proposed reorganization actions which utilizes a definition of agricultural lands that differ from those utilized under CEQA. Section 56064 of the Cortese-Knox-Hertzberg Local Government Reorganization Act defines “prime agricultural land” as:

"Prime agricultural land" means an area of land, whether a single parcel or contiguous parcels, that has not been developed for a use other than an agricultural use and that meets any of the following qualifications:

- (a) Land that qualifies, if irrigated, for rating as class I or class II in the USDA Natural Resources Conservation Service (NRCS) land use capability classification, whether or not land is actually irrigated, provided that irrigation is feasible.
- (b) Land that qualifies for rating 80 through 100 Storie Index Rating.
- (c) Land that supports livestock used for the production of food and fiber and that has an annual carrying capacity equivalent to at least one animal unit per acre as defined by the United States Department of Agriculture in the National Range and Pasture Handbook, Revision 1, December 2003.
- (d) Land planted with fruit or nut-bearing trees, vines, bushes, or crops that have a nonbearing period of less than five years and that will return during the commercial bearing period on an annual basis from the production of unprocessed agricultural plant production not less than four hundred dollars (\$400) per acre.
- (e) Land that has returned from the production of unprocessed agricultural plant products an annual gross value of not less than four hundred dollars (\$400) per acre for three of the previous five calendar years.

Soil Capability Classification System

The USDA, Natural Resource Conservation Service (NRCS) uses two systems to determine a soil's agricultural productivity: The Soil Capability Classifications System and the Storie Index Rating System. Soil Capability Classification System takes into consideration soil limitations, the risk of damage when the soils are used, and the way in which soils respond to treatment. Capability classes range from Class I soils, which have few limitations for agriculture, to Class VIII soils, which are unsuitable for agriculture. Generally, as the ratings of the capability classification system increase, the yields and profits are more difficult to obtain. A general description of soil classification, as defined by the NRCS, is provided in Table 6-1.

Table 6-1 Soil Capability Classification

Class	Definition
I	Soils have few limitations that restrict their use.
II	Soils have moderate limitations that reduce the choice of plants or require moderate conservation practices.
III	Soils have severe limitations that reduce the choice of plants or require special conservation practices, or both.
IV	Soils have very severe limitations that restrict the choice of plants or require very careful management, or both.
V	Soils have little or no hazard of erosion but have other limitations, impractical to remove, that limit their use mainly to pasture, range, forestland, or wildlife food and cover.
VI	Soils have severe limitations that make them generally unsuited to cultivation and that limit their use mainly to pasture, range, forestland, or wildlife food and cover.
VII	Soils have very severe limitations that make them unsuited to cultivation and that restrict their use mainly to grazing, forestland, or wildlife.
VIII	Soils and miscellaneous areas have limitations that preclude their use for commercial plant production and limit their use to recreation, wildlife, or water supply or for esthetic purposes.

Source: USDA 2008.

Storie Index Rating System

The Storie Index Rating system ranks soil characteristics according to their suitability for agriculture from Grade 1 soils (80 to 100 rating), which have few or no limitations for agricultural production to Grade 6 soils (less than 10), which are not suitable for agriculture. Under this system, soils deemed less than prime can function as prime soils when limitations such as poor drainage, slopes, or soil nutrient deficiencies are partially or entirely removed. The six grades, ranges in index rating, and definition of the grades are provided below in Table 6-2.

Table 6-2 Storie Index Rating System

Grade	Index Rating	Definition
1 - Excellent	80 through 100	Soils are well suited to intensive use for growing irrigated crops that are climatically suited to the region.
2 - Good	60 through 79	Soils are good agricultural soils, although they may not be so desirable as Grade 1 because of moderately coarse, coarse, or gravelly surface soil texture; somewhat less permeable subsoil; lower plant available water holding capacity, fair fertility; less well drained conditions, or slight to moderate flood hazards, all acting separately or in combination.
3 - Fair	40 through 59	Soils are only fairly well suited to general agricultural use and are limited in their use because of moderate slopes; moderate soil depths; less permeable subsoil; fine, moderately fine or gravelly surface soil textures; poor drainage; moderate flood hazards; or fair to poor fertility levels, all acting alone or in combination.
4 - Poor	20 through 39	Soils are poorly suited. They are severely limited in their agricultural potential because of shallow soil depths; less permeable subsoil; steeper slope; or more clayey or gravelly surface soil textures than Grade 3 soils, as well as poor drainage; greater flood hazards; hummocky micro-relief; salinity; or fair to poor fertility levels, all acting alone or in combination.
5 - Very Poor	10 through 19	Soils are very poorly suited for agriculture, are seldom cultivated and are more commonly used for range, pasture, or woodland.
6 - Nonagricultural	Less than 10	Soils are not suited for agriculture at all due to very severe to extreme physical limitations, or because of urbanization.

Source: City of Sacramento 2006

Project Area Soil Conditions

Table 6-3 presents soil capability classifications, Storie Index Rating and grade, and soil designations for soils within the project area. As shown in this table, some of the soil types in the project area would meet the definition of prime agricultural land under Section 56064 of the Cortese-Knox-Hertzberg Local Government Reorganization Act (see Exhibit 6-1).

Table 6-3 Project Area Soil Capability Classification and Storie Index Rating

Soil Map Symbol and Name	Soil Capability Classification ¹		Storie Index Rating	Storie Index Grade
	Non-irrigated	Irrigated		
115 Clear Lake Clay, hardpan stratum, 0 to 1 percent slopes	III ^s	II ^s	25	4
128 Cosumnes silt loam, occasionally flooded, 0 to 2 percent slopes	III ^s	II ^s	81	1
152 Galt clay, 0 to 2 percent slopes	III ^s	III ^s	14	5
153 Galt clay, 2 to 5 percent slopes	III ^e	—	15	5
161 Jacktone clay, 0 to 2 percent slopes	III ^s	III ^s	20	4
207 Sailboat silt loam, rarely flooded 0 to 2 percent slopes	III ^c	I	76	2
211 San Joaquin fine sandy loam, 0 to 3% slopes	III ^s	III ^s	28	4

Table 6-3 Project Area Soil Capability Classification and Storie Index Rating

Soil Map Symbol and Name	Soil Capability Classification ¹		Storie Index Rating	Storie Index Grade
	Non-irrigated	Irrigated		
212 San Joaquin fine sandy loam, 3 to 8% slopes	III ^e	III ^e	26	4
230 Valpac loam, 0 to 2 percent slopes	III ^w	II ^w	57	3

Source: City of Sacramento 2006

Notes:

¹ Capability subclasses are soils within one class. They are designated by adding a small letter, e, w, s or c, to the class numeral.

The letter e shows that the main hazard is erosion unless close-growing plant cover is maintained;

The letter w shows that water in or on the soil interferes with plant growth or cultivation (in some soils the wetness can be partly corrected by artificial drainage);

The letter s shows that the soil is limited mainly because it is shallow, droughty, or stoney; and

The letter c used in only some parts of the United States, shows that the chief limitation is climate that is very cold or very dry.

OPEN SPACE

A majority of the project's land area is undeveloped with agricultural activities. Built features on-site include two existing home sites located near West Elkhorn Boulevard, high-voltage power lines consisting of two sets of steel lattice towers supporting double-circuit 230 kV lines owned by the Western Area Power Administration and a 115-kV line owned by SMUD within a 200-foot powerline easement, and the partially constructed East Natomas Education Complex (junior and senior high schools in the Twin Rivers Unified School District) that is not being utilized (see Exhibit 3-3). The City of Sacramento 2035 General Plan and the North Natomas Community Plan designate the project area as "Planned Development" for the future consideration of development.

6.2.8 Environmental Justice

Government Code Section 65040.12 (e) 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 and policies." The Cortese-Knox-Hertzberg Local Government Reorganization Act Section 56668(o) further defines environmental justice as the fair treatment of people of all races, cultures, and incomes with respect to the location of public facilities and the provision of public services. Environmental justice addresses issues concerning whether an activity could expose minority or disadvantaged populations to proportionately greater impacts compared with those borne by other individuals.

6.3 REGULATORY SETTING

The following are provisions that apply to the reorganization request. The reader is referred to Section 5.1, "Agricultural Resources," for regulations regarding agricultural resources, and Sections 5.8, "Hydrology and Water Quality," 5.10, "Public Services and Recreation," and 5.13, "Utilities," for regulations regarding public service provisions.

6.3.1 Sacramento Local Agency Formation Commission

Reorganization of the project area is subject to Sacramento LAFCo's *Policy, Standards and Procedures Manual*. The following provisions are applicable to the project.

GENERAL POLICIES

1. The CEQA requires that LAFCo assess the environmental consequences of its actions and decisions, and take actions to avoid or minimize a project's adverse environmental impacts, if feasible, or approve a project despite significant effects because it finds overriding considerations exist. To comply with CEQA, the LAFCo will take one or more of the following actions:
 - a. At its discretion, approve a project without changes if environmental impacts are insignificant;
 - b. Require an applicant to modify a project;
 - c. Establish mitigating measures as a condition of its approval of the proposal, (note the Commission may also impose terms and conditions of project approval other than CEQA identified mitigation measures.);
 - d. Modify and approve to avoid or lessen environmental impacts, or disapprove the proposal because of unacceptable adverse environmental impacts;
 - e. Approve the project despite its significant effects by making findings of overriding concern.
2. LAFCo will favorably consider those applications that do not shift the cost for services and infrastructure benefits to other service areas.
3. The LAFCo encourages the use of service providers which are governed by officials elected by the citizens.
4. 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;
 - ▲ provide more than one type of service to the territory which they serve.

GENERAL STANDARDS

B. Conformance with applicable general and specific plans

1. LAFCo will approve changes of organization or reorganization only if the proposal is consistent with the General Plan and applicable Specific Plans of the applicable planning jurisdiction.
2. For purposes of the above policy, the applicable planning jurisdiction is as follows:
 - a. For annexations to a city, the applicable jurisdiction is the city to which annexation is proposed;
 - b. For applications for annexation to or detachment from a district all of whose territory lies within an adopted Sphere of Influence of a city, the General Plan of the city;
 - c. For an application for annexation to a special district for lands outside an adopted city Sphere of Influence, the Sacramento County General Plan;
 - d. For an application for annexation or detachment from a district whose territory lies in both the city and the unincorporated area of the county, the General Plan of the city unless the project lies outside of the city's Sphere of Influence; and
 - e. For applications for incorporations, this standard is inapplicable.

3. For purposes of this standard, the proposal shall be deemed consistent if the proposed use is consistent with the applicable General Plan designation and text, the applicable General Plan is legally adequate and internally consistent and the anticipated types of services to be provided are appropriate to the land use designated for the area.
4. The governing body of the applicable planning jurisdiction shall recommend by resolution whether the proposal meets all applicable consistency requirements of state law, including internal consistency. LAFCo shall retain jurisdiction to determine consistency pursuant to its jurisdiction to approve, disapprove or condition changes of organization or reorganization and may require additional information if necessary.

C. Boundaries

1. The LAFCo will not approve applications within boundaries which:
 - a. Result in islands, corridors or peninsulas or incorporated or unincorporated territory or otherwise cause or further the distortion of existing boundaries;
2. LAFCo will make exceptions to the requirements of this standard only if the exception:
 - a. Is rendered necessary because of unique circumstances;
 - b. Results in improved quality or lower cost of service available to the affected parties; or
 - c. There exists no feasible and logical alternative.

E. Agricultural Land Conservation

LAFCo will exercise its powers to conserve agricultural land pursuant to the following standards:

1. LAFCo will approve a change of organization or reorganization which will result in the conversion of prime agricultural land in open space use to other uses only if the Commission finds that the proposal will lead to the planned, orderly and efficient development of an area. For purposes of this standard, a proposal leads to the planned, orderly and efficient development of an area only if all of the following criteria are met:
 - a. The land subject to the change of organization or reorganization is contiguous to either lands developed with an urban use or lands which have received all discretionary approvals for urban development.
 - b. The proposed development of the subject lands is consistent with the Spheres of Influence Plan, including the Master Services Element (Municipal Services Review) of the affected agency or agencies.
 - c. Development of all or a substantial portion of the subject land is likely to occur within five years. In the case of very large developments, annexation should be phased whenever feasible. If the Commission finds phasing infeasible for the specific reasons, it may approve annexation if all or a substantial portion of the subject land is likely to develop within a reasonable period of time.
 - d. Insufficient vacant non-prime lands exists within the applicable Spheres of Influence that are planned, accessible, and developable for the same general type of use.
 - e. The proposal will have no significant adverse effect on the physical and economic integrity of other agricultural lands. In making this determination, LAFCo will consider the following factors:
 - (1) The agricultural significance of the subject and adjacent areas relative to other agricultural lands in the region.

- (2) The use of the subject and the adjacent areas.
 - (3) Whether public facilities related to the proposal would be sized or situated so as to facilitate the conversion of adjacent or nearby agricultural land, or will be extended through or adjacent to, any other agricultural lands which lie between the project site and existing facilities.
 - (4) Whether natural or man-made barriers serve to buffer adjacent or nearby agricultural land from the effects of the proposed development.
 - (5) Applicable provisions of the General Plan open space and land use elements, applicable growth management policies, or other statutory provisions designed to protect agriculture.
2. LAFCo will not make the affirmative findings that the proposed development of the subject lands is consistent with the Spheres of Influence in the absence of an approved Sphere of Influence Plan. LAFCo will not make the affirmative findings that insufficient vacant non- prime land exists within the Spheres of Influence Plan unless the applicable jurisdiction has:
- a. Identified within its Spheres of Influence all "prime agricultural land" as defined herein.
 - b. Enacted measures to preserve prime agricultural land identified within its Sphere of Influence for agricultural use.
 - c. Adopted as part of its General Plan specific measures to facilitate and encourage in-fill development as an alternative to the development of agricultural lands.

SPECIFIC STANDARDS BY TYPE OF ACTION

A. Annexation to Cities

1. LAFCo will utilize Spheres of Influence through application of the following standards:
 - a. The LAFCo will approve an application for annexation only if the proposal conforms to and lies wholly within the approved Spheres of Influence boundary for the affected agency;
 - b. The LAFCo generally will not allow Spheres of Influence to be amended concurrently with annexation proposals;
 - c. The LAFCo will favorably consider proposals that are a part of an orderly, phased annexation program by an agency for territory within its Sphere of Influence;
 - d. An annexation must be consistent with a city's Master Services Plan Element of its Sphere of Influence Plan; and
 - e. The LAFCo encourages the annexation to each city of all islands of unincorporated territory and all substantially surrounded unincorporated areas located within the city's Sphere of Influence.
2. The LAFCo will not approve proposals in which boundaries are not contiguous with the existing boundaries of the city to which the territory will be annexed, unless the area meets all of the following requirements:
 - a. Does not exceed 300 acres;
 - b. Is owned by the city;
 - c. Is used for municipal purposes; and

- d. Is located within the same county as the city.
3. The LAFCo will favorably consider proposals to annex streets where adjacent municipal lands will generate additional traffic and where there are isolated sections of county road that will result from an annexation proposal. Cities shall annex a roadway portion when 50 percent of the property on either or both sides of the street is within the city.
4. The LAFCo will favorably consider annexations with boundary lines located so that all streets and rights-of-way will be placed within the same city as the properties which either abut thereon or for the benefit of which such streets and rights-of-way are intended.
5. An annexation may not result in islands of incorporated or unincorporated territory or otherwise cause or further the distortion of existing boundaries unless it is determined that the annexation as proposed is necessary for orderly growth, and cannot be annexed to another city or incorporated as a new city. Annexations of territory must be contiguous to the annexing city. Territory is not contiguous if its only connection is a strip of land more than 300 feet long and less than 200 feet wide.
6. The LAFCo opposes extension of services by a city without annexation, unless such extension is by contract with another governmental entity or a private utility.

G. Reorganization

The LAFCo will evaluate each component organizational change which makes up a reorganization proposal independently. In so doing, the LAFCo will follow the standards presented below:

1. LAFCo will strive to ensure that each separate territory included in the proposal, as well as affected neighboring residents, tenants, and landowners, receive services of an acceptable quality from the most efficient and effective service provider after the reorganization is complete.
2. The service quality, efficiency and effectiveness available prior to reorganization shall constitute a benchmark for determining significant adverse effects upon an interested party. The LAFCo will approve a proposal for reorganization which results in this type of significant adverse effects only if effective measures are included in the proposal.

6.3.2 Open Space

STATE

Cortese-Knox-Hertzberg Local Government Reorganization Act

Cortese-Knox-Hertzberg Local Government Reorganization Act Section 56059 defines "open space" as any parcel or area of land or water which is substantially unimproved and devoted to an open-space use, as defined in Government Code Section 65560.

Government Code Section 65560 defines open space in the following manner:

(b)"Open-space land" is any parcel or area of land or water that is essentially unimproved and devoted to an open-space use as defined in this section, and that is designated on a local, regional or state open-space plan as any of the following:

(1) Open space for the preservation of natural resources including, but not limited to, areas required for the preservation of plant and animal life, including habitat for fish and wildlife species; areas required for ecologic and other scientific study purposes; rivers, streams, bays and estuaries; and coastal beaches, lakeshores, banks of rivers and streams, and watershed lands.

(2) Open space used for the managed production of resources, including but not limited to, forest lands, rangeland, agricultural lands and areas of economic importance for the production of food or fiber; areas required for recharge of groundwater basins; bays, estuaries, marshes, rivers and streams which are important for the management of commercial fisheries; and areas containing major mineral deposits, including those in short supply.

(3) Open space for outdoor recreation, including but not limited to, areas of outstanding scenic, historic and cultural value; areas particularly suited for park and recreation purposes, including access to lakeshores, beaches, and rivers and streams; and areas which serve as links between major recreation and open-space reservations, including utility easements, banks of rivers and streams, trails, and scenic highway corridors.

(4) Open space for public health and safety, including, but not limited to, areas which require special management or regulation because of hazardous or special conditions such as earthquake fault zones, unstable soil areas, flood plains, watersheds, areas presenting high fire risks, areas required for the protection of water quality and water reservoirs and areas required for the protection and enhancement of air quality.

(5) Open space in support of the mission of military installations that comprises areas adjacent to military installations, military training routes, and underlying restricted airspace that can provide additional buffer zones to military activities and complement the resource values of the military lands.

(6) Open space for the protection of places, features, and objects described in Sections 5097.9 and 5097.993 of the Public Resources Code.

LOCAL

City of Sacramento 2035 General Plan

The project area is designated as “Planned Development” in the City of Sacramento 2035 General Plan. For areas designated as Planned Development, the City requires that regional and community benefits are achieved as the result of annexations and development approvals and that they are developed consistent with the General Plan’s vision and guiding principles and obtain a General Plan Amendment to designate the area consistent with the proposed project using the appropriate designations contained in the Land Use and Urban Design Element. Thus, the project area is not intended to be retained in its entirety as agricultural or open space.

The following North Natomas Community Plan (a component of the General Plan) policies do apply to the provision open space and agricultural buffers for the project area:

- ▲ Policy NN.ERC 1.10: Agricultural Buffers. The City shall maintain an agricultural buffer along the north and west boundaries of the plan area as a method to avoid land use conflicts between urban uses and agricultural operations. The north buffer along Elkhorn Boulevard includes a 250-foot-wide strip of land along the south side of Elkhorn Boulevard, the 136-foot-wide public right-of-way of Elkhorn Boulevard, and any maintenance road or irrigation canal on the north side of Elkhorn Boulevard. The uses allowed in the buffer include pedestrian trails and bikeways, linear parks and open space, drainage canals or detention basins, irrigation canals, public roads, and maintenance roads. The buffer along the west side of the plan area is 200 feet wide and allows the same uses as the northern buffer. The area devoted to the agricultural buffer is 195.9 acres. As an alternative to agricultural buffers, other methods to reduce land use conflicts between urban and agricultural zoned lands include (1) provide separation among uses through the placement of roadways and landscape corridors, (2) through design (i.e., orientation and heights of buildings), (3) provide disclosure of potential agricultural operations nearby, and/or (4) provide temporary buffers that could be extinguished if agriculturally zoned property is rezoned to urban uses.

- ▲ Policy NN.ERC 1.12: Other Open Space. The City shall allow for Open Space to include an open space parkway (Ninos Parkway) from Del Paso Road to Elkhorn Boulevard that includes the WAPA lines (46.6 acres); an open space buffer along the eastern boundary of the plan area that includes the existing Natomas East Main Drainage Canal and the Union Pacific Railroad right-of-way (123 acres); a proposed lake in the Northborough project (24 acres); and the Witter Ranch Historic Farm located near the northeast corner of El Centro Road and San Juan Road (26.2 acres). The area of land devoted to “Other Open Space” is 219.8 gross acres.

6.3.3 Environmental Justice

STATE

State California Environmental Quality Act Guidelines Section 15131

State CEQA Section 15131 provides that economic or social information may be included in an EIR, but those economic or social effects shall not be considered significant effects on the environment. In an EIR, the lead agency is responsible for researching economic or social changes resulting from a project, which may eventually lead to physical changes in the environment. These economic or social changes can be used to determine the significance of physical changes on the environment.

Government Code Section 65040.12

Government Code Section 65040.12 (e) 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 and policies.”

Cortese-Knox-Hertzberg Local Government Reorganization Act

The Cortese-Knox-Hertzberg Local Government Reorganization Act Section 56668(o) defines environmental justice as the fair treatment of people of all races, cultures, and incomes with respect to the location of public facilities and the provision of public services.

6.4 IMPACTS AND MITIGATION MEASURES

SIGNIFICANCE CRITERIA

Impacts related to reorganization of the project would be considered significant if the project would result in conflicts with Sacramento LAFCo policies and standards related to public service provision and the environment for any of the following:

- ▲ affordable housing;
- ▲ fire protection services;
- ▲ parks and recreation;
- ▲ drainage service;
- ▲ transportation and lighting services;
- ▲ loss of prime agricultural lands (as defined by Section 56064 of the Cortese-Knox-Hertzberg Local Government Reorganization Act); or
- ▲ loss of open space (as defined in Government Code Section 65560).

In addition, impacts related to the reorganization of the project area would be considered significant if the reorganization would result in adverse effects or impacts that are appreciably more severe in magnitude or are predominately borne by any segment of the population, for example, household population with low income or a minority population in comparison with a population that is not low income or minority (i.e., environmental justice impacts).

METHODS AND ASSUMPTIONS

As noted above, the analysis below is focused on impacts related to reorganization of the project specific to the Sacramento LAFCo policies and standards for public services and the environment. The project and cumulative environmental impacts of the conversion of the project area from agricultural/vacant land to suburban development and service provision are addressed in Sections 5.1 through 5.14 of this EIR.

IMPACTS AND MITIGATION MEASURES

Impact 6-1: Loss of affordable housing

Existing housing in the project area is limited to two existing residential dwellings on the Krumenacher Ranch site that are not proposed to be removed as part of this project. The project is required to comply with Chapter 17.712 of the City's Planning and Development Code that addresses affordable housing provision. Therefore, the project would have **no impact** involving the loss of affordable housing.

A majority of the project's land area is undeveloped with non-cultivated, agricultural and grazing activities occurring. Built features on-site include two existing home sites located near West Elkhorn Boulevard on the Krumenacher Ranch site. There are no development entitlements or zoning being sought as part of this project that would allow for development of the Krumenacher Ranch site. No affordable housing exists in the project area.

Upon annexation, the project would be required to pay a housing impact fee on all newly constructed market rate dwelling units pursuant to Section 17.712.050 of the City's Planning and Development Code as well as prepare a Mixed Income Housing Strategy required under Section 17.712.030B. The Mixed Income Housing Strategy must demonstrate how the project provides housing for a variety of income and family types consistent with the City's Housing Element. There, the project would have **no impact** involving the loss of affordable housing.

Mitigation Measures

No mitigation is required.

Impact 6-2: Impacts to the Natomas Fire Protection District

Detachment of the project area from the Natomas Fire Protection District would not result in significant service impacts to the District because this area is already being served by the City of Sacramento Fire Department under contract to the District. Therefore, project's impacts to the Natomas Fire Protection District would be **less than significant**.

The proposed annexation of the project area would involve the detachment of 489.4 acres from the NFPD and annexation to the City that would be served by the SFD. This detachment would result in a minor reduction NFPD service area by approximately 1.8 percent. This would decrease the land area NFPD is responsible for servicing and would also lose the funding generated by the project area. Since 1984, NFPD has contracted with the City to provide emergency, medical, rescue and fire protection services for the project area. Under this contract most of the property tax collected for fire service is paid to the City. Thus, there would be no change in the actual service provider from the proposed annexation as it would continue

to be served by the City. As a result, the detachment of the project area from NFPD would be a **less-than-significant** impact and would not create new or altered service impacts.

Mitigation Measures

No mitigation is required.

Impact 6-3: Impacts related to an increase in demand for fire protection services in the City

Annexation of the project into the City would increase the demand for City fire protection services. However, additional tax revenue and implementation of Mitigation Measures 5.10-1a, 5.10-1b, and 5.10-1c would address this additional service demand. Therefore, the project's impacts to City fire protection services would be **less than significant**.

As required for mandatory compliance with the UFC/City Code Chapter 15.36, project design would comply with regulations relating to construction, maintenance, and use of buildings. The UFC contains specialized technical regulations related to fire and life safety. Such mandatory fire prevention and deterrence measures would include, but not be limited to, fire department access, fire hydrants, automatic sprinkler systems, fire alarm systems, fire and explosion hazards safety, hazardous materials storage and use, provisions intended to protect and assist fire responders, industrial processes, and other fire-safety requirements for new and existing buildings and the surrounding premises. As described in Section 5.13, "Utilities," there is adequate water supply and distribution facilities to provide sufficient fire flow to the project area.

Development would also be required to comply with state and local fire regulations, as outlined in the California Health and Safety Code and the City Code and fire prevention code. Compliance with these mandatory regulations would ensure that fire and other emergency service providers would have adequate access to all properties within the project area in the event of a fire emergency. Compliance would also support fire suppression and decrease the likelihood of fire spreading through preventative measures such as fire sprinklers and appropriate fire-safe vegetation choices and clearing requirements, and through the use of fire-safe building materials, building plans, emergency access details and site plans.

The project area would be served by Station 18 and 30. Station 30 is located within 0.53 mile of the project area, while Station 18 is located south of Del Paso Road and is within 1.2 miles from the project area. It is expected that SFD would be able to respond to call for the project within its goal of four minutes or less.

Upon annexation, a City/County property tax exchange agreement would establish the terms and distribution of applicable tax revenues for the City. County and affected special districts from the project area. A portion of these revenues could be allocated to fire protection services. The project would contribute to the need for facility improvements and equipment needs that would be addressed through its payment of impact fees and funding through the Panhandle PUD Public Facilities Financing Plan (once adopted). Implementation of Mitigation Measures 5.10-1a and 5.10-1b would ensure that fire protection fees are paid and required facilities are in place concurrent with site development. Additional fire operational services required for the project would be funded by City general fund revenue including tax revenues generated by the residential and commercial uses proposed by the project, such as property tax and sales tax. Thus, the project's increased demand for City fire protection services would be **less than significant**.

Mitigation Measures

No mitigation is required.

Impact 6-4: Impacts to the Rio Linda Elverta Recreation and Park District

Detachment of the project area from the Rio Linda Elverta Recreation and Park District would not result in significant service impacts to the District because this area does not currently contain any park facilities or residents that generate demand and revenue to the District. Therefore, project's impacts to the Rio Linda Elverta Recreation and Park District would be **less than significant**.

A majority of the project's land area is vacant with agricultural activities occurring. The proposed annexation of the project area would involve the detachment of 489.4 acres from the RLERPD and annexation to the City. This detachment would result in a reduction RLERPD service area by approximately 2.5 percent. There are no on-site park facilities maintained by the RLERPD and no existing pool of residents that generate demand or tax revenues for the RLERPD. The current Panhandle Tax Exchange Agreement would provide the RLERPD with \$18,000 per year for a period of five years (City of Sacramento 2010). The detachment of the project area from the RLERPD would not alter park demands for park facilities or result in the loss of park facilities. Thus, project's impact to the RLERPD would be **less than significant**.

Mitigation Measures

No mitigation is required.

Impact 6-5: Impacts related to an increase in demand for park and recreation services provided by the City

Annexation of the project would result in an increase in the demand for park and recreation facilities provided by the City. The project would meet the City's requirements for parkland through parkland dedication and/or payment of in-lieu fees and would provide additional tax revenue. Therefore, the project's impacts on recreation facility demands would be **less than significant**.

Based on City and NNCP requirements (North Natomas Community Plan and City Code Title 16, Chapter 16.64), the Panhandle PUD's parkland dedication requirement would be 21.9-acres using the City's acreage factor of 0.0135 for single-family dwelling units. This is a conservative estimate as it assumes all residential units in the project area would be single-family units. The number of two-family and multiple-family dwelling units that would be constructed in the project area has not yet been determined. As individual development projects are proposed within the Panhandle PUD, the precise parkland requirements would be calculated. Based on the City's goal for the provision of trails and parkways (0.5 miles of trail per 1,000 residents), the project would also be required to provide approximately 3.1 miles of linear trail.

The Panhandle PUD proposes 56 net acres of parks and open space uses consisting of park facilities (22.5 net acres), open space parkway (20.1 net acres) and detention areas (13.4 net acres). The Ninos Parkway would be situated in the eastern part of the Panhandle PUD and would provide active and passive recreation opportunities and a trail system. Future development of the Krumenacher Ranch site will be required to demonstrate compliance with City park dedication requirements and is anticipated to complete the northern extent of the Ninos Parkway.

The project applicants would also be required to pay in-lieu fees as necessary to ensure compliance with the City's parkland requirements and to ensure that adequate parkland is provided to project residents. Maintenance for the parks will be through project annexation to the existing Parks Maintenance Community Facilities District, whereby the project residents will fund park maintenance to minimize funding impacts to the existing City parks. Other sources of parks funding include the City General Fund and user fees. Therefore, the project would not result in substantial deterioration or other physical impacts to existing recreation facilities in the City. This impact would be **less than significant**.

Mitigation Measures

No mitigation is required.

Impact 6-6: Impacts to Sacramento County Water Agency Zone 13

Detachment of the project area from Sacramento County Water Agency Zone 13 would not result in significant drainage service impacts because Zone 13 was established for the funding of water supply and drainage studies and does not include the maintenance of drainage facilities. Therefore, project's impacts to Sacramento County Water Agency Zone 13 would be **less than significant**.

Zone 13 of the Sacramento County Water Agency was established in 1987 to perform studies related to water supply, drainage and flood control affecting all or part of the unincorporated areas of Sacramento and the City of Citrus Heights. As noted above, the project area drainage and flood control is provided by the City of Sacramento and RD1000. RD1000 is the principal agency responsible for conveying and pumping storm runoff from the Natomas Basin. Runoff from the urbanized areas of the basin is collected, conveyed, and pumped to RD1000 facilities (i.e., canals). The project does not propose detachment from RD1000. Thus, project's impact to the Zone 13 of the Sacramento County Water Agency would be **less than significant**.

Mitigation Measures

No mitigation is required.

Impact 6-7: Impacts to Sacramento County Service Area No. 1 and 10

Detachment of the project area from Sacramento County Service Area No.1 (street and highway lighting) and No. 10 (enhanced transportation services) would not result in significant roadway facility service impacts because the project area is undeveloped and does not pose current transportation facility service impacts. Therefore, project's impacts to Sacramento County Service Area No. 1 and 10 would be **less than significant**.

Sacramento County Service Area No. 1 was formed in 1986 to consolidate all street and highway safety lighting services into one countywide district and to provide a financing mechanism for the portion of those services not otherwise financed by property taxes. Sacramento County Service Area No. 10 was established on May 13, 2003 to provide extended transportation services for new development to assist in complying with air quality control measures. The project area is undeveloped and currently generates no demands for these services. Upon annexation, the City would maintain the project roadways and associated safety lighting. As described in Section 5.2, "Air Quality," the project would be required to implement Mitigation Measure 5.2-2 that would reduce the project's operational ozone precursors by 35 percent. The Panhandle PUD Public Facilities and Financing Plan indicates a total cost of \$10.9 million associated with the design and construction of transportation facilities and provides funding measures for these improvements. Thus, the project's impact to Sacramento County Service Area No. 1 and 10 would be **less than significant**.

Mitigation Measures

No mitigation is required.

Impact 6-8: Impacts related to an increase in demand for drainage and flood control services provided by the City

Annexation of the project would result in an increase in the drainage and flood control activity by the City. The project would meet the City's requirements for drainage control with on-site detention facilities, and implementation of Mitigation Measures 5.8-1, 5.8-2, and 5.8-3 would ensure that the project design addresses drainage and flood control needs. Therefore, the project's impacts on drainage facilities would be **less than significant**.

As described under Impact 5.8-1, the project's primary drainage improvement for the site would consist of an on-site stormwater detention basin on the west side of the project area north of Club Center Drive (see Exhibit 3-4). The detention basin would provide storage to allow outflows to be metered at a reduced rate to

discharge to existing twin, 60-inch pipes that drain runoff from the site to the canal that runs parallel to Truxel Road, with no off-site improvements required. The detention basin would be sized to contain the 100-year, 10-day runoff volume assuming a maximum pumping rate of 0.10 cubic feet/acre for the project area as well as for the on-site East Natomas Education Complex. In addition, as required by the City's Stormwater Management Plan, and the City's NPDES storm water permit, the project would incorporate BMPs to reduce runoff containing urban pollutants. The modeling and analysis in the Drainage System Modeling Report for the Natomas Panhandle (Panhandle Owner's Group 2016) indicate that the proposed storm water system would comply with applicable City of Sacramento standards with respect to the water surface elevations generated during 10-year flows. The analysis also determined that the proposed detention basin would have the capacity to detain both the 100-year, 24-hour event and the 100-year, 10-day event. Thus, implementation of these improvements would accommodate increased drainage flows from Panhandle PUD buildout. Implementation of Mitigation Measures 5.8-1 and 5.8-2 would ensure that phased development drainage and water quality impacts would be addressed. Mitigation Measure 5.8-3 would ensure that an adequate setback from the North Natomas Levee is provided to allow for planned improvements to the levee. Therefore, the project would not result in any new drainage or flood impacts to the City and would ensure that the project design would not conflict with planned improvements to the North Natomas Levee. This impact would be **less than significant**.

Mitigation Measures

No mitigation is required.

Impact 6-9: Loss of prime agricultural lands

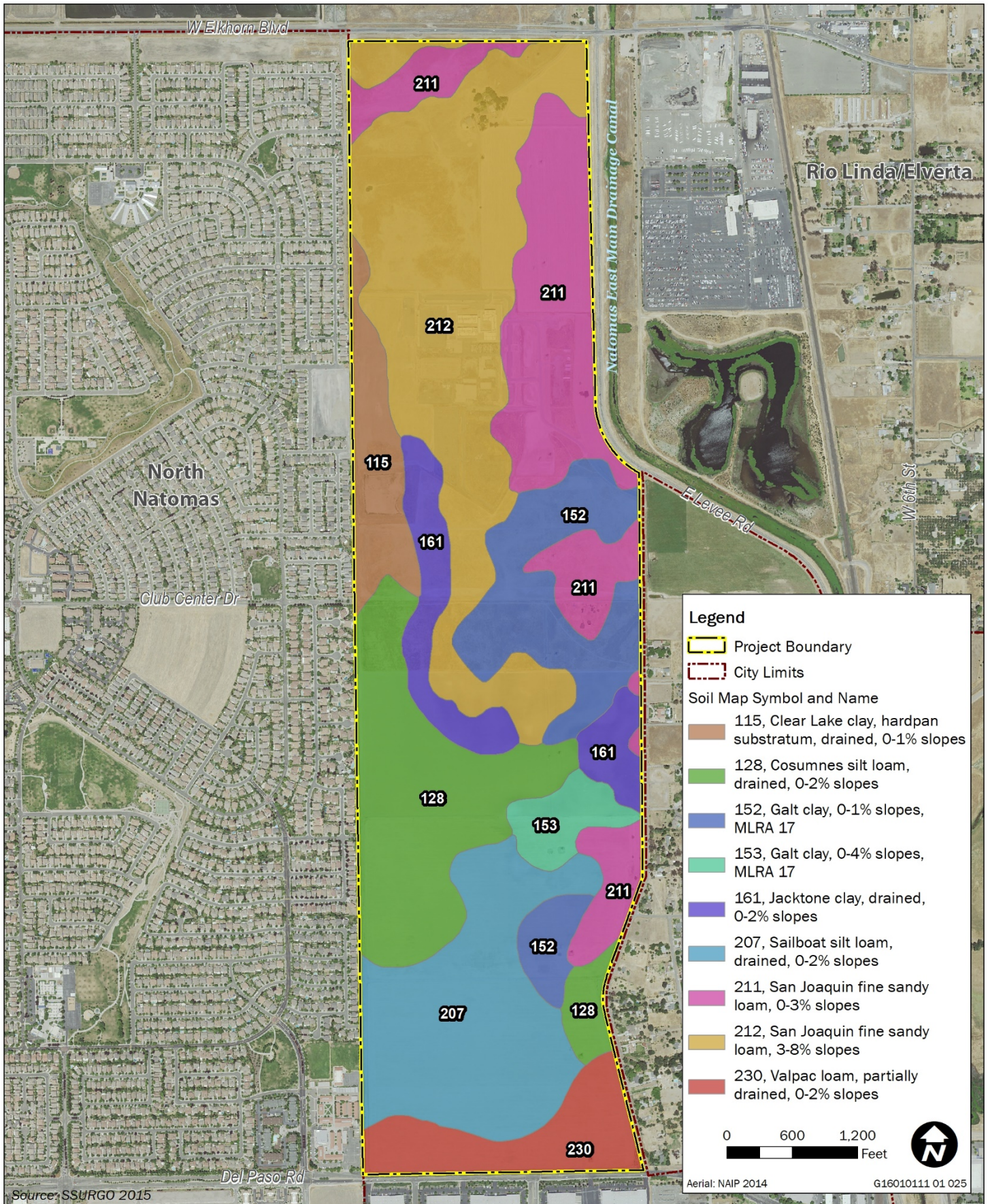
Annexation of the project area would allow development and the loss of prime agricultural lands as defined by Section 56064 of the Cortese-Knox-Hertzberg Local Government Reorganization Act. The project would participate in the Natomas Basin Habitat Conservation Plan that would require the preservation of land in relation to the development of the project area. This land preservation would address the loss of prime agricultural lands under Sacramento LAFCo's jurisdiction. Therefore, the project's impact would be **less than significant**.

Table 6-3 and Exhibit 6-1 presents soil capability classifications, Storie Index Rating and grade, and soil designations for soils within the project area. As shown in this table, some of the soil types in the project area would meet the definition of prime agricultural land under Section 56064 of the Cortese-Knox-Hertzberg Local Government Reorganization Act. However, as described in Impact 5.1-1 of the EIR, under CEQA this impact was determined to be less than significant. The Panhandle PUD includes suburban development that would result in the conversion of the project area's current agricultural and open space conditions. While the Krumenacher Ranch site is not currently proposed for development, annexation and retention of the City's General Plan designation of Planned Development for this portion of the project area would allow for the consideration of development in the future.

As described in Section 5.3, "Biological Resources," the project is subject to compliance with the Natomas Basin Habitat Conservation Plan (NBHCP) mitigation requirements. Specifically, the project is required to provide fess or land dedication conversion of the project area acreage to urban uses at a ratio of 0.5 to 1.0. This compensation would also address the loss of prime agricultural lands under Sacramento LAFCo's jurisdiction. Therefore, this impact would be **less than significant**.

Mitigation Measures

No mitigation is required.



Legend

- Project Boundary
- City Limits

Soil Map Symbol and Name

- 115, Clear Lake clay, hardpan substratum, drained, 0-1% slopes
- 128, Cosumnes silt loam, drained, 0-2% slopes
- 152, Galt clay, 0-1% slopes, MLRA 17
- 153, Galt clay, 0-4% slopes, MLRA 17
- 161, Jacktone clay, drained, 0-2% slopes
- 207, Sailboat silt loam, drained, 0-2% slopes
- 211, San Joaquin fine sandy loam, 0-3% slopes
- 212, San Joaquin fine sandy loam, 3-8% slopes
- 230, Valpac loam, partially drained, 0-2% slopes

0 600 1,200
 Feet

N

Aerial: NAIP 2014 G16010111 01 025

Source: SSURGO 2015

Exhibit 6-1

Project Soils



Impact 6-10: Loss of open space land uses

Annexation of the project area would allow urbanization and the loss of open space lands as defined by Section 56059 of the Cortese-Knox-Hertzberg Local Government Reorganization Act. The project would participate in the Natomas Basin Habitat Conservation Plan that would require the preservation of land in relation to the development of the project area. This land preservation would address the loss of open space lands under Sacramento LAFCo's jurisdiction. Therefore, the project's impact would be **less than significant**.

As noted above, Section 56059 of the Cortese-Knox-Hertzberg Local Government Reorganization Act utilizes the open space definition under Government Code Section 65560. The project area would meet the definition under Section 65560(b)(2) as it is currently in agricultural use as well as zoned and General Plan designated for agricultural use by Sacramento County (see Exhibits 3-6 and 3-7). The Panhandle PUD Schematic Plan would establish the Nino Parkway which would be part of the open space buffering for the North Natomas Community Plan area eastern boundary.

As described in Section 5.3, "Biological Resources," the project is subject to compliance with the Natomas Basin Habitat Conservation Plan (NBHCP) mitigation requirements. Specifically, the project is required to provide fess or land dedication conversion of the project area acreage to urban uses at a ratio of 0.5 to 1.0. This compensation would also address the loss of open space lands under Sacramento LAFCo's jurisdiction. Therefore, this impact would be **less than significant**.

Mitigation Measures

No mitigation is required.

Impact 6-11: Impacts related to environmental justice

The project would consist of a variety of single-family residential densities and is required to comply with Chapter 17.712 of the City's Planning and Development Code that addresses affordable housing provision. There are no existing or proposed uses in the project area that would expose any existing or proposed residents in the area to one or more environmental hazards. Therefore, the project's impact would be **less than significant** related to environmental justice concerns.

A majority of the project's land area is vacant with agricultural activities occurring. Built features on-site include two existing home sites located near West Elkhorn Boulevard on the Krumenacher Ranch site. There are no development entitlements or zoning being sought as part of this project that would allow for development of the Krumenacher Ranch site. No affordable housing exists in the project area.

Upon annexation, the project would be required to pay a housing impact fee on all newly constructed market rate dwelling units pursuant to Section 17.712.050 of the City's Planning and Development Code as well as prepare a Mixed Income Housing Strategy required under Section 17.712.030B. The Mixed Income Housing Strategy must demonstrate how the project provides housing for a variety of income and family types consistent with the City's Housing Element.

Sections 5.2, "Air Quality," 5.7, "Hazards and Hazardous Materials," 5.9, "Noise and Vibration," and 5.10, "Public Services and Recreation," identify significant environmental impacts that would impact all future project residents equally and not one specific residential area or segment of the population. Implementation of mitigation measures identified in these sections would reduce environmental impacts and ensure adequate provision of public services.

Therefore, impacts related to environmental justice would be **less than significant**.

Mitigation Measures

No mitigation is required.

Impact 6-12: Impacts related to consistency with Sacramento Local Agency Formation Commission policies and standards

The project would generally be consistent with Sacramento Local Agency Formation Commission standards associated with annexation requests that address environmental issues as set forth in its *Policy, Standards and Procedures Manual*. Therefore, the project's impact would be **less than significant**.

The following is a consistency analysis of the project based on the general standards and specific standards by action type set forth in Sacramento LAFCo's *Policy, Standards and Procedures Manual*.

General Standard B. Conformance with Applicable General and Specific Plans

The project would include a General Plan Amendment to redesignate the remaining acres of the project area as Suburban Neighborhood Low Density (SNLD), Suburban Center (SC), Parks and Recreation (PR), and Open Space (OS) (see Table 3-1 and Exhibit 3-4). The establishment of this land use mix to implement the project area's PD land use designation is consistent with City of Sacramento General Plan Goal LU 1.1 and associated policies that support growth through orderly and well-planned development.

The current North Natomas Community Plan was adopted in March 2015 as part of the last General Plan update. The project implements Policy NN.LU 1.1 through the proposed establishment of the Panhandle PUD Schematic Plan and Development Guidelines. The Panhandle PUD Schematic Plan would establish variety of residential densities consistent Policy NN.LU 1.9 that consists of "Traditional" lot densities (52 percent of the total residential units) along the western project boundary, the lower density "Estate" lots (20 percent of the total residential units) are proposed in the western and eastern portion of the PUD, and the denser "Compact" residential lots (28 percent of the total residential units) would be centrally located adjacent to key project features (parks, elementary school, and the Ninos Parkway). This would also provide opportunities for upscale housing at lower densities to accommodate North Natomas residents who are move-up home buyers that wish to remain in the area consistent with Policy NN.LU 1.13.

General Standard C. Boundaries

The proposed reorganization of the project area would create an 835.3-acre unincorporated island within the City south of Del Paso Road (see Exhibit 7-4). This area is already developed with light industrial, warehouse, and commercial uses and does not require changes to service provisions. The annexation of the project area and implementation of the Panhandle PUD would promote the orderly growth and completion of the vision of the North Natomas Community Plan consistent with the exceptions set forth in Specific Standard A. Annexation to Cities, Item 5.

General Standard E. Agricultural Land Conservation

The following provides a summary of the consistency of the project with LAFCo's policies related to agricultural land conversion standards.

- ▲ The project would be contiguous with the adjacent development to the east, west, and south which consists of lands developed or approved for suburban uses.
- ▲ The project is within the existing SOI for the City of Sacramento. A Plan for Services has been proposed for the project that addresses public service provision and utilities.
- ▲ Development of the project area is currently anticipated to being in the year 2018.
- ▲ As previously noted, development in the North Natomas area has occurred rapidly since adoption of the North Natomas Community Plan in 1994. There are currently no sites within the city boundaries in the North Natomas area that accommodate a development similar to the project (in size) that is not already entitled for development. The project is the only land area within with City's SOI in the North Natomas area. Thus, it can be concluded that insufficient vacant nonprime land exists within the City's SOI.

LAFCo requires the determination of whether the project would have a significant adverse effect on the physical and economic integrity of other agricultural lands. Although the project is in proximity to other agricultural lands to the north, implementation of Mitigation Measure 5.1-2 would establish an agricultural land buffer along Elkhorn Boulevard consistent with the requirements of the North Natomas Community Plan. Implementation of Mitigation Measure 6-8 would require that appropriate off-site lands to be set aside in a permanent conservation easements at a ratio of no less than one acre of land converted to urban use to one-half acre of prime agricultural lands/open space land preserved.

Specific Standard A. Annexation to Cities

The project is within the existing SOI for the City of Sacramento. A Plan for Services has been proposed for the project that addresses public service provision and utilities. The proposed reorganization of the project area would create an 835.3-acre unincorporated island within the City south of Del Paso Road. This area is already developed with light industrial, warehouse, and commercial uses and does not require changes to service provisions. The annexation of the project area and implementation of the Panhandle PUD would promote the orderly growth and completion of the vision of the North Natomas Community Plan consistent with the exceptions set forth in Specific Standard A. Annexation to Cities, Item 5.

Based on the analysis above, the project would be generally consistent with Sacramento LAFCo policies that address environmental issues and this impact would be **less than significant**,

Mitigation Measures

No mitigation is required.

7 PROJECT ALTERNATIVES

7.1 INTRODUCTION

The State CEQA Guidelines require analysis of a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the project’s basic objectives and avoid or substantially lessen any of the significant effects of the project (Section 15126.6[a]). The range of potentially feasible alternatives required in an EIR is governed by a “rule of reason” that requires the EIR to set forth only those alternatives necessary to permit a reasoned choice. The potential feasibility of an alternative may be determined based on a variety of factors, including economic viability, availability of infrastructure, and other plans or regulatory limitations. Specifically, Section 15126.6(f) (1) of the State CEQA Guidelines states, in part:

Among the factors that may be taken into account when addressing the feasibility of alternatives are site suitability, economic viability, availability of infrastructure, general plan consistency, other plans or regulatory limitations, jurisdictional boundaries (projects with a regionally significant impact should consider the regional context), and whether the proponent can reasonably acquire, control or otherwise have access to the alternative site (or the site is already owned by the proponent). No one of these factors establishes a fixed limit on the scope of reasonable alternatives.

In determining what alternatives should be considered in the EIR, it is important to acknowledge the objectives of the project, the project’s significant effects, and unique project considerations. These factors are crucial to the development of alternatives that meet the criteria specified in Section 15126.6(a). The State CEQA Guidelines further require that the alternatives be compared to the project’s environmental impacts and that the “no project” alternative is considered (Section 15126.6[d] [e]).

An EIR need not evaluate the environmental effects of alternatives in the same level of detail as the project, but must include enough information to allow meaningful evaluation, analysis, and comparison with the project. The requirement that an EIR evaluate alternatives to the project or alternatives that address the location of the project is a broad one; the primary intent of the alternatives analysis is to disclose other ways that the objectives of the project could be attained while reducing the magnitude of, or avoiding, the environmental impacts of the project. Alternatives that are included and evaluated in the EIR must be feasible alternatives. However, the Public Resources Code (PCR) and the CEQA Guidelines direct that the EIR need “set forth only those alternatives necessary to permit a reasoned choice.” The ultimate determination as to whether an alternative is feasible or infeasible is made by the lead agency’s decision-making body (see PRC Section 21081[a] [3].)

7.2 CONSIDERATIONS FOR SELECTION OF ALTERNATIVES

7.2.1 Attainment of Project Objectives

As described above, one factor that must be considered in selection of alternatives is the ability of a specific alternative to attain most of the basic objectives of the project (CEQA Guidelines Section 15126.6[a]). Chapter 3, “Project Description,” articulates the following project objectives:

The City of Sacramento has identified the following project objectives for the annexation:

- ▲ promote a logical and reasonable extension of the City boundaries as this area is immediately adjacent to existing City limits, and

- ▲ promote more efficient provision of municipal services for existing and future development in the project area.

The project objectives of the Panhandle Planned Unit Development (PUD) are:

- ▲ optimize the land use potential of an infill location in the City by providing a mix of residential, commercial, park, open space, and school uses;
- ▲ build a community that implements the goals and objectives of the General Plan and NNCP;
- ▲ create a community with a park system incorporating park facilities with local and regional-connecting open space amenities that are accessible to residents and the public;
- ▲ provide a safe and efficient circulation system that interconnects uses, promotes pedestrian circulation, and minimizes impacts to rural uses east of the project area; and
- ▲ Create a community that makes efficient use of land while offering residential housing densities that transition from urban densities of the existing North Natomas Community to the west to the existing large-lot and rural densities to the east.

7.2.2 Environmental Impacts of the Project

Sections 5.1 through 5.14 and Chapters 4 and 6 of this Draft EIR address the environmental impacts of implementation of the project. Potentially feasible alternatives were developed with consideration of avoiding or lessening the significant adverse impacts of the project, as identified in this Draft EIR. In summary, the significant impacts of the project are:

- ▲ **Air Quality:** The project could result in the following impacts:
 - Construction-related activities would result in project-generated emissions of ROG, NO_x, PM₁₀ and PM_{2.5} from site preparation (e.g., excavation, clearing), off-road equipment, material and equipment delivery trips, and worker commute trips, and other miscellaneous activities (e.g., building construction, asphalt paving, application of architectural coatings). Construction activities would result in mass emissions of NO_x that exceed SMAQMD's thresholds of 85 lb/day. Therefore, construction-generated emissions of NO_x could contribute to the existing nonattainment status of the SVAB for ozone. Mitigation has been recommended to reduce this impact to **less than significant**. (Impact 5.2-1)
 - Implementation of the project would result in long-term operational emissions of ROG, NO_x, and PM₁₀ that exceed SMAQMD's thresholds of significance (65 lb/day for ROG, 65 lb/day for NO_x, 80 lb/day and 14.6 tons/year for PM₁₀). Therefore, operation-generated emissions could conflict with the air quality planning efforts and contribute substantially to the nonattainment status of Sacramento County with respect to ozone and PM₁₀. Mitigation has been recommended to address this impact that consists of the implementation of air quality mitigation plan (AQMP). However, this mitigation measure would not completely offset air pollutant emissions. Therefore, the impact would be **significant and unavoidable**. (Impact 5.2-2)
 - Construction-related emissions of toxic air contaminants (TACs) associated with land uses developed under the project would not result in an incremental increase in cancer risk greater than 10 in one million or a hazard index greater than 1.0 at existing or future sensitive receptors. However, new TAC sources associated with commercial development may expose existing or new receptors to TAC emissions. Mitigation has been recommended to reduce this impact to **less than significant**. (Impact 5.2-4)

- The project would introduce new odor sources into the area (e.g., temporary diesel exhaust emissions during construction and delivery trucks associated with commercial land uses). However, these odor sources would be temporary, intermittent, and dissipate rapidly from the source. Further, the project would not locate land uses in close proximity to any existing odor sources. Receptors located in the vicinity of the proposed suburban center may be exposed to odorous emissions. Mitigation has been recommended to reduce this impact to **less than significant**. (Impact 5.2-4)
- Operation of the project would result in long-term increases in criteria air pollutants and ozone precursors from stationary, area, and mobile sources (i.e., VMT). Operational emissions would exceed SMAQMD thresholds of significance and therefore result in a cumulatively considerable contribution to regional air quality and may conflict with regional air quality planning efforts to improve air quality. All feasible mitigation has been incorporated into the project as described in the AQMP prepared for the project. However, given that the AQMP would not completely offset project operational air pollutant emissions, this impact is **cumulatively considerable and significant and unavoidable**. (Impact 5.2-7)
- ▲ **Biological Resources:** The project could result in the following significant impacts:
 - Several special-status species are associated with vernal pool and annual grassland habitat in the project area. Development of the project area would result in removal of these habitats and, therefore, could result in loss of special-status species if they are present. Mitigation has been recommended to reduce this impact to **less than significant**. (Impact 5.3-2)
 - Implementation of the project would result in fill of wetlands or other waters. Mitigation has been recommended to reduce this impact to **less than significant**. (Impact 5.3-3)
 - Implementation of the project could result in loss of protected tree resources. Mitigation has been recommended to reduce this impact to **less than significant**. (Impact 5.3-4)
- ▲ **Archaeological, Historical, and Tribal Cultural Resources:** The project could result in the following significant impacts:
 - Based on the results of the archaeological records search and various pedestrian surveys conducted for the project site, there are no known archaeological sites. However, ground-disturbing activities could result in discovery or damage of as yet undiscovered archaeological resources as defined in CEQA Guidelines Section 15064.5. Mitigation has been recommended to reduce this impact to **less than significant**. (Impact 5.4-3)
- ▲ **Geology, Soils, Mineral Resources, and Paleontology:** The project could result in the following significant impacts:
 - Implementation of the project would occur on soil that is highly expansive with a high expansion potential. Construction of buildings on expansive soils may exert substantial pressures upon foundations, concrete slabs-on-grade, and other structural components, creating a substantial risk to life or property. Mitigation has been recommended to reduce this impact to **less than significant**. (Impact 5.5-2)
 - The project could result in the potential damage or destruction of undiscovered paleontological resources. Mitigation has been recommended to reduce this impact to **less than significant**. (Impact 5.5-3)
- ▲ **Greenhouse Gas Emissions and Climate Change:** The project's greenhouse gas construction and operational emissions would have a cumulatively considerable contribution to existing and future emissions and would conflict with state efforts to reduce greenhouse emissions. Mitigation has been recommended to reduce this impact to **less than significant**. (Impact 5.6-1)

- ▲ **Hazardous Materials and Hazards:** The Panhandle PUD would include detention facilities and water features at park sites that could attract mosquitoes and other water-borne vectors. Without specific controls in place, these features could create a nuisance or hazardous condition. Mitigation has been recommended to reduce this impact to **less than significant**. (Impact 5.7-3)
- ▲ **Hydrology and Water Quality:** The project could result in the following significant impacts:
 - Development of the project may increase storm water runoff rates generated within and downstream of the project when compared with existing conditions. While the project includes necessary drainage improvements to properly handle onsite storm water flows, phased development of the site could potentially result in temporary drainage impacts if the necessary drainage facilities are not in place at the time of site development. Development could also worsen existing drainage and local flooding issues at the intersection of Del Paso Road and Sorento Road. Mitigation has been recommended to reduce this impact to **less than significant**. (Impact 5.8-1)
 - Development of the project would introduce sediments and constituent pollutants typically associated with construction activities and urban development into storm water runoff. These pollutants would have the potential of degrading downstream storm water quality. Mitigation has been recommended to reduce this impact to **less than significant**. (Impact 5.8-2)
 - The project may conflict with planned improvements to the North Natomas Levee associated with the NEMDC to provide flood protection. Mitigation has been recommended to reduce this impact to **less than significant**. (Impact 5.8-3)
 - It is possible that shallow groundwater beneath the proposed onsite detention basins could interact with pollutants associated with urban runoff that would be captured within the detention basins. Pollutants could be released in the underlying groundwater basin and could result in contamination of wells used for consumptive uses. Mitigation has been recommended to reduce this impact to **less than significant**. (Impact 5.8-4)
- ▲ **Noise and Vibration:** The project could result in the following significant impacts:
 - Short-term construction-generated noise levels could result in a substantial increase in ambient noise levels at future on-site and existing off-site sensitive land uses that could exceed applicable noise standards. Construction noise occurring during the exempted hours of the day would comply with the City and County of Sacramento noise ordinances, however nighttime construction activity may be required. Nighttime construction activities could exceed the City and County of Sacramento nighttime standards for sensitive receptors. Although noise reduction would be achieved with implementation of mitigation measures recommended, reductions are not expected to be achieved under all circumstances. No other feasible mitigation is available; therefore, this impact would remain **significant and unavoidable**. (Impact 5.9-1)
 - Implementation of the project could expose existing sensitive receptors to substantial increases in transportation noise levels that exceed the City and County of Sacramento noise standards, and result in project-generated transportation noise levels that exceed City and County of Sacramento allowable noise increment standards. Mitigation measures are recommended to reduce noise exposure from transportation noise. However, it cannot be assured that residences that may elect not to participate in the mitigation; therefore, this impact would remain **significant and unavoidable**. (Impact 5.9-2)
 - The project proposes a mix of various land uses, including residential, commercial, park, and school uses. Traffic and stationary noise sources in the vicinity of the project may expose noise-sensitive uses within the project site to excessive noise levels, resulting in land use conflicts related to noise. Implementation of the project could expose future planned sensitive receptors to transportation and

- The project would increase the demand for services under project (Impact 5.11-7) and cumulative conditions (Impact 5.11-15). Mitigation has been recommended to reduce project and cumulative impacts to **less than significant**.
- The project's incremental increase in traffic to study roadway segments, in combination with traffic from cumulative development, would result in deficient level of service operations. Mitigation measures are recommended to reduce these operation impacts through widening of Elkhorn Boulevard that would offset impacts to this roadway to **less than significant**, and the implementation of neighborhood traffic management plans for local residential roadways as widening of these roadways are considered infeasible. Thus, this impact is **cumulatively considerable and significant and unavoidable**. (Impact 5.11-10)
- ▲ **Urban Design and Visual Resources:** The project could result in the following significant impacts:
 - The visual character surrounding the project area consists of suburban uses that transition to rural residential and agricultural conditions. The project would convert the visual open space character of project area to suburban uses and would further expand suburban development conditions east of existing North Natomas Community that would substantially alter public views. Implementation of mitigation measures for agricultural buffer along West Elkhorn Boulevard that would also soften the visual impact on public views along this corridor, but would not fully mitigate this impact. Impacts related to the degradation of the local viewshed through conversion to suburban development are considered **significant and unavoidable**. (Impact 5.12-1)
 - Development of the project area would result in the introduction of buildings and facilities that may create lighting and glare on adjoining areas. Mitigation has been recommended to reduce this impact to **less than significant**. (Impact 5.12-2)
 - The project would convert the visual open space character of project area to suburban uses and would further extend suburban development conditions east of existing North Natomas Community. This would contribute to the cumulative conversion of open space and agricultural areas in the Sacramento metropolitan area. Because of the scale and location of the project, there is no feasible mitigation available to offset the aesthetic resource impacts associated with the conversion of open space and agricultural lands to suburban development. The project's contribution to cumulative impacts is considered **cumulatively considerable and significant and unavoidable**. (Impact 5.12-3)

7.3 ALTERNATIVES CONSIDERED BUT DISMISSED FROM FURTHER EVALUATION

Off-site alternatives are generally evaluated in an environmental document to avoid, lessen, or eliminate the significant impacts of a project by considering the proposed development in an entirely different location. To be feasible, development of off-site locations must be able to fulfill the project purpose and meet most of the project's basic objectives. The main objectives of the Panhandle project are to incorporate into the City of Sacramento (City), an area that is currently located in the City's Sphere of Influence (SOI), and to develop the project area according to the visions of the City General Plan and the North Natomas Community Plan (NNCP). Both these documents have identified the project area as developing with a mix of suburban uses. The Panhandle Planned Unit Development (PUD) component of the project proposes a mix of single-family residential units, along with commercial and public/quasi-public uses. Locating the Panhandle PUD elsewhere within the City may not allow for the same mix of residential densities and commercial and public uses.

Therefore, an off-site alternative was not considered in this EIR for the following reasons:

- ▲ The development of the project area is consistent with the goals of the General Plan and North Natomas Community Plan for this area of the North Natomas community.

- ▲ There are no un-entitled land areas within the North Natomas Community Plan area of sufficient size to accommodate the project.
- ▲ Areas outside the City of Sacramento are outside the jurisdiction of the City to approve entitlements and, therefore, are not considered feasible alternatives.
- ▲ An off-site alternative would not meet the basic objectives of the project described in Chapter 3.0, “Project Description.”

7.4 ALTERNATIVES SELECTED FOR DETAILED ANALYSIS

Alternatives evaluated in this Draft EIR are:

- ▲ **Alternative 1: No Project – No Development Alternative**, which the project area is not annexed to the City and no changes to Sacramento County General Plan land use designations or zoning would occur.
- ▲ **Alternative 2: Reduced Development Footprint Alternative**, which would modify the project design concentrating the proposed residential development potential south of the East Natomas Education Complex. The Krumenacher Ranch site and certain land areas east of the on-site powerlines would be designated as open space and parks.
- ▲ **Alternative 3: Reduced Intensity Alternative**, which would designate the Krumenacher Ranch site as open space and parks and would reduce the residential development potential and would not connect to Sorento Road.

7.4.1 Alternative 1: No Project Alternative

Under the No Project Alternative, the proposed annexation would not take place, the Panhandle PUD project would not be built, and the project area would remain under Sacramento County’s jurisdiction, the County General Plan land use designation would remain as Agricultural Cropland (see Exhibit 7-1).

Under County zoning regulations only one residential unit could be constructed per vacant parcel in the project area (project would retain its zoning of Agriculture 80 acres), thereby resulting in the potential for a total of eight residential units in the project area (one existing [Krumenacher Ranch site] plus seven new residential units for each of the existing parcels). The East Natomas Education Complex site would be completed as approved under this alternative. The No Project Alternative would not meet any of the project objectives and would not be consistent with the City of Sacramento 2035 General Plan or North Natomas Community Plan land use policies. However, consistent with State CEQA Guidelines Section 15126.6(e), the No Project Alternative is nevertheless evaluated in this Draft EIR.

EVALUATION OF ENVIRONMENTAL EFFECTS

Land Use, Population, and Housing

The No Project Alternative would not result in conflicts with existing residential land uses surrounding the project area because the relationship between the undeveloped property and the residential neighborhoods would remain unchanged. The project area would remain agricultural in nature. This alternative would not result in any conflicts with existing land uses or divide an established community. No conflicts with plans adopted for the purpose of avoiding or mitigating a significant environmental impact would occur. The No Project Alternative would not generate substantial new growth of residents or employment, and would not remove any housing. Overall, land use, population, and housing impacts under this alternative would be less than those that would occur with the project.



Exhibit 7-1

No Project Alternative



Agricultural Resources

The No Project Alternative would allow for the continued use of the project area for agricultural uses. While the project would not result in the loss of Important Farmlands (defined by CEQA as Prime Farmland, Unique Farmland, and Farmland of Statewide Importance), this alternative would not result in the conversion of any agricultural lands (project area consists of Farmland of Local Importance and Grazing Land) to non-agricultural uses. Overall, the agricultural resource impacts of the No Project Alternative would be less than those that would occur with the project.

Air Quality

The No Project Alternative would generate lower air pollutant emissions from construction activities (particulate matter and ozone precursors) and from operation (ozone precursors) as result of its reduced potential development of seven new residential dwelling units. This alternative would avoid project significant air quality impacts related to TAC and potential odor generation. The significant construction, operational, and cumulative air quality impacts identified for the project would not occur, and no mitigation would be required for this alternative. Therefore, the air quality impacts of the No Project Alternative would be less than those that would occur with the project.

Biological Resources

Under the No Project Alternative, activity on the project area would be limited to the development of seven new residential units and the continued operation of agricultural uses. This would retain a majority of the grasslands, agricultural habitat, and protected trees in the project area that support special-status plant and wildlife species known to occur in the region (development of the seven new dwelling units are anticipated to develop less than one acre of land area). While mitigation is available to reduce project biological resource impacts to a less-than-significant level, these impacts would be substantially reduced under the No Project Alternative. Therefore, the biological resource impacts of the No Project Alternative would be less than those that would occur with the project.

Archaeological, Historical, and Tribal Cultural Resources

Under the No Project Alternative, the Krumenacher Ranch site (identified as possibly eligible for the Sacramento Register of Historic and Cultural Resources) would not be developed and the buildings would remain. Impacts to unknown archaeological and tribal cultural resources would be less under the No Project Alternative because of the minimal ground disturbance (construction of seven new dwelling units) as compared to the project. Overall, impacts would be less than those that would occur the project.

Geology, Soils, Mineral Resources, and Paleontology

The No Project Alternative would require less soil movement and preservation of the project area's existing undeveloped condition. The project would result in less-than-significant impacts related to expansive soil hazards and the potential destruction of undiscovered paleontological resources with implementation of mitigation measures. Because this alternative could result minimal site disturbance, overall, impacts would be less than those that would occur the project.

Greenhouse Gases Emissions and Climate Change

The No Project Alternative would generate lower greenhouse gas (GHG) emissions from construction activities and from operation as result of its reduced potential development of seven new residential dwelling units. The significant and cumulative GHG emission impacts that would contribute to climate change identified for the project would not occur, and no mitigation would be required for this alternative. Overall, the GHG emission impacts of the No Project Alternative would be less than those that would occur with the project.

Hazards and Hazardous Materials

Under the No Project Alternative, there would not be the need to operate the proposed on-site detention basin that is a potential source of mosquitoes that could expose residents to diseases including West Nile virus, malaria, and dengue. While mitigation is available to reduce project mosquito hazards to a less-than-

significant level, these impacts would be avoided under the No Project Alternative. Therefore, the hazard impacts of the No Project Alternative would be less than those that would occur with the project.

Hydrology and Water Quality

Under the No Project Alternative, there would be a substantial reduction in the impervious surface area as compared to the project, which would increase surface water infiltration and reduce sedimentation and urban pollutants in stormwater runoff. This alternative would also avoid any potential conflicts with planned improvements to the North Natomas Levee. While mitigation is available to reduce project hydrologic and levee improvement conflict impacts to a less-than-significant level, these impacts would be avoided under the No Project Alternative. Overall, the hydrology and water quality impacts of the No Project Alternative would be less than those that would occur with the project.

Noise and Vibration

The potential for seven new residential dwelling units under the No Project Alternative would require substantially less site preparation and result in less construction noise than the project. This alternative could generate 44 daily trips (based on daily residential trip generation rates provided in Appendix H, Table 4.10-12). This traffic generation would not result in noticeable or significant increases in traffic noise in the project area, and would avoid the significant and unavoidable traffic noise impacts identified for the project along Sorento Road and Del Paso Road. This alternative would also avoid project traffic noise impacts from Elkhorn Boulevard, Del Paso Road, and Club Center Drive, and from operational noise from the commercial uses at the Suburban Center. Therefore, the noise impacts of the No Project Alternative would be less than those that would occur with the project.

Public Services and Recreation

The No Project Alternative would not trigger the need for new or improved fire, police, or park facilities associated with the potential development of seven new residential dwelling units. While mitigation is available to reduce project impacts to public facilities to a less-than-significant level, these impacts would be avoided under the No Project Alternative. Overall, the public service impacts of the No Project Alternative would be less than those that would occur with the project.

Transportation and Circulation

The No Project Alternative could generate 44 daily trips from the potential development of seven new residential dwelling units. This alternative's traffic generation potential is substantially less than the project's 25,720 total daily trips and would likely avoid significant construction, transit, intersection (Sorento Road / Del Paso Road) and roadway segment impacts (Elkhorn Boulevard, Regency Park Circle, Danbrook Drive, Sorento Road, Barros Drive, and Mayfield Street) under existing and cumulative conditions identified for the project. Project impacts to local roadways would remain significant and unavoidable even with the application of mitigation. Overall, the transportation impacts of the No Project Alternative would be less than those that would occur with the project.

Urban Design and Visual Resources

The No Project Alternative provide for the continued use of the project area for agricultural uses that would retain the existing visual character and lighting conditions of the area. While project impacts to the visual character of the area are significant and avoidable, this impact would be avoided under the No Project Alternative. Therefore, the visual and lighting impacts of the No Project Alternative would be less than those that would occur with the project.

Utilities

Under the No Project Alternative, new residential development would likely utilize groundwater wells and septic systems given the existing parcel sizes (40 acres to 180 acres). Solid waste generation would also be substantially reduced as compare to the project. While no significant utility impacts would occur under the project, the No Project Alternative would have further reduced impacts than those that would occur with the project.

Energy

The No Project Alternative development potential of seven new residential units would have a substantial reduction in construction, operational, and transportation energy demand as compared to the project. While no significant energy impacts would occur under the project, the No Project Alternative would have substantially less energy demands than the project.

7.4.2 Alternative 2: Reduced Development Footprint Alternative

Under Alternative 2, Reduced Development Footprint Alternative, the same amount of residential, commercial, school development would occur on the site. However, the land plan would be modified to designate the Krumenacher Ranch site and Panhandle PUD Village 14 as “Parks/Open Space” and would be zoned “Agriculture-Open Space” to ensure the long-term preservation of the current agricultural and open space condition of this area. The residential development potential these areas (i.e., Krumenacher Ranch and Village 14) would be transferred to the southern portion of the project area (Panhandle PUD Villages 1 and 2) and these village areas would be designated as “Suburban Neighborhood High Density.” This would result in 1,138 multifamily dwelling units. All other aspects of the project’s land plan and roadway system design would remain the same (see Exhibit 7-2). Table 7-1 provides a summary of land uses under this alternative.

This alternative is intended to reduce identified significant biological resource and visual impacts by permanently preserving the vernal pool and swale habitat conditions in the northwestern corner of the project area and the Krumenacher Ranch site buildings. This site design would provide additional visual buffering from views along Elkhorn Boulevard.

Table 7-1 Alternative 2: Reduced Development Footprint Alternative Land Use Summary

Land Use	Net Acreage	Dwelling Unit Potential
Suburban Neighborhood Low Density - Compact	59.3	500
Suburban Neighborhood Low Density - Estate	94.4	488
Suburban Neighborhood Low Density - Traditional	72.9	534
Suburban Neighborhood High Density	40.6	1,138
Residential Total	267.2	2,660
Suburban Center	9.7	
Parks/Open Space	153.7	
Ninos Parkway	20.1	
High School/Middle School (East Natomas Education Complex)	60.4	
Elementary School	10.0	
Detention Basin	13.4	
Major Collector and Residential Streets	54.9	
Total	589.4	2,660

Compiled by Ascent Environmental 2017.

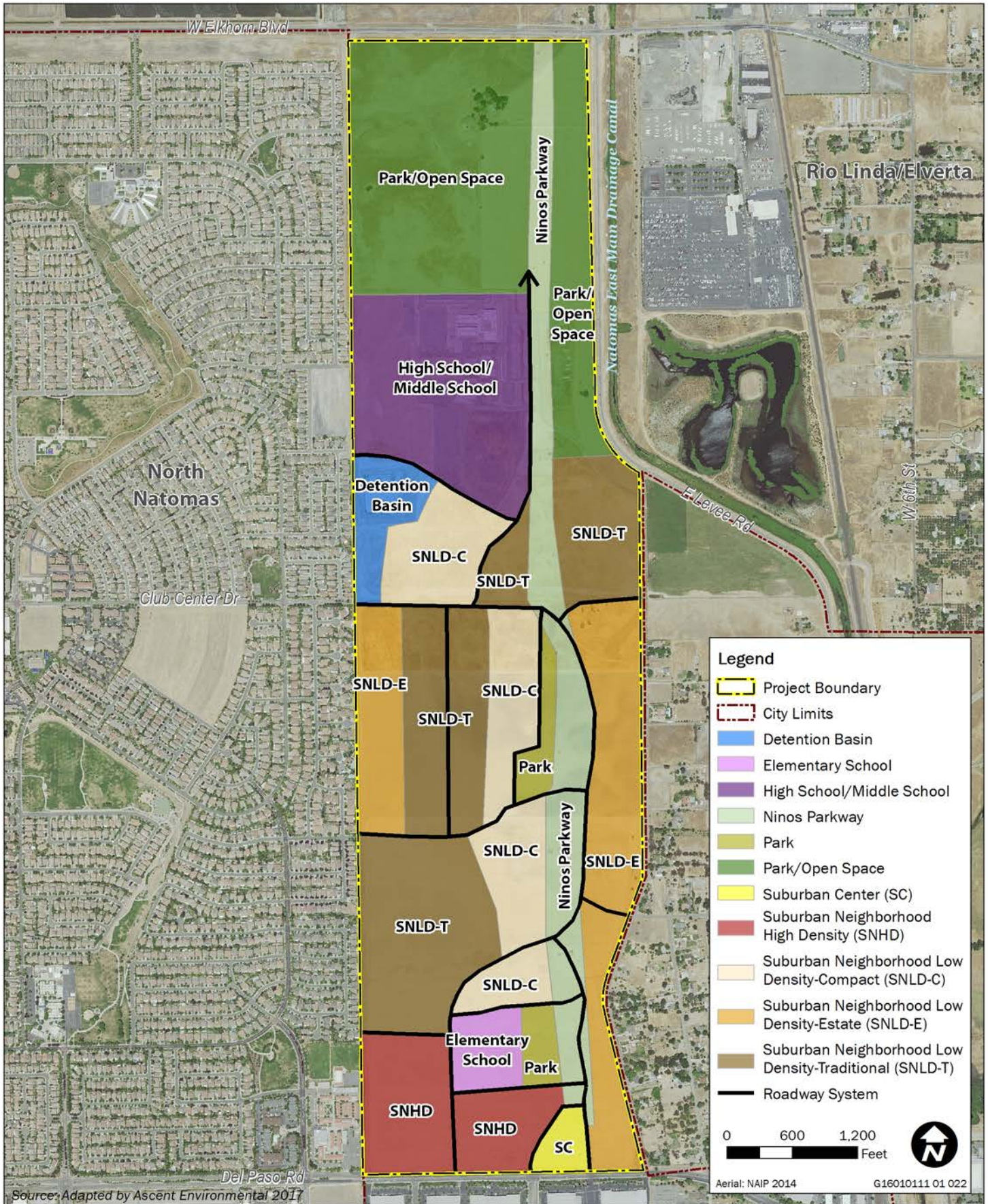


Exhibit 7-2

Reduced Development Footprint Alternative



EVALUATION OF ENVIRONMENTAL EFFECTS

Land Use, Population, and Housing

The Reduced Development Footprint Alternative would not result in conflicts with existing residential land uses surrounding the project area because the project design would complement existing suburban development to the west and transitions densities to existing rural residential development to the west in a manner similar to the project. This alternative would not result in any conflicts with existing land uses or divide an established community. This alternative would implement City General Plan and North Natomas Community Plan land use policies regarding neighborhood design, transition, and connectivity similar to the project. The Reduced Development Footprint Alternative would also result in similar residential and employment growth potential as the project. Overall, the land use, population, and housing impacts of this alternative would be similar to the project.

Agricultural Resources

The Reduced Development Footprint Alternative would not result in the loss of Important Farmlands (defined by CEQA as Prime Farmland, Unique Farmland, and Farmland of Statewide Importance) similar to the project. This alternative would designate the northern portion of the project area (Krumenacher Ranch) as “Parks/Open Space” that would continue to function as open space and agricultural use. Therefore, the agricultural resource impacts of the Reduced Development Footprint Alternative would be less than those that would occur with the project.

Air Quality

The Reduced Development Footprint Alternative would result in similar significant construction (particulate matter and ozone precursors), operational (ozone precursors), TAC, odor generation, and cumulative air quality impacts identified for the project because the same general intensity of proposed construction (e.g., same number of units and square footage of development). The higher residential density component of this alternative could result in reduced operational air pollutant emissions from energy efficiency from typical multifamily building design as compared to single-family development. However, the residential density increase of this alternative would not fully mitigate air pollutant emissions and operational and cumulative air quality impacts would remain significant and unavoidable. Like the project, mitigation would reduce construction, TAC, and odor generation impacts to a less-than-significant level for the Reduced Development Footprint Alternative. Overall, the air quality impacts of this alternative would be similar to the project.

Biological Resources

Under the Reduced Development Footprint Alternative, vernal pools and swales in the northwestern corner of the project area would be retained. Like the project, this alternative would result in the loss of grasslands, agricultural habitat, and protected trees in the project area. As with the project, this alternative would not avoid the project’s impacts on biological resources, and mitigation would reduce the impact to a less-than-significant level. Overall, the Reduced Development Footprint Alternative would reduce biological resource impacts that would occur with the project by preserving the northern portion of the project area.

Archaeological, Historical, and Tribal Cultural Resources

Under the Reduced Development Footprint Alternative, the Krumenacher Ranch site (identified as possibly eligible for the Sacramento Register of Historic and Cultural Resources) would remain (the project does not propose to remove these buildings). Although impacts to unknown archaeological and tribal cultural resources under this alternative would also occur under the project, the smaller area of surface disturbance would reduce the potential for disturbance of these resources. Overall, impacts would be less than those that would occur the project.

Geology, Soils, Mineral Resources, and Paleontology

Like the project, the Reduced Development Footprint Alternative would result in development that could result in hazards associated with expansive soils as well as potential destruction of undiscovered paleontological resources. Project mitigation would also reduce this alternative’s impact to a less-than-

significant level. Overall, impacts would be less than those that would occur the project for this alternative because of the smaller area of surface disturbance would reduce the potential for impact.

Greenhouse Gases Emissions and Climate Change

The Reduced Development Footprint Alternative would generate similar GHG emissions from construction and operation as the project. The higher residential density component of this alternative could result in reduced operational GHG emissions from energy efficiency from typical multifamily building design as compared to single family development. However, the residential density increase of this alternative would not fully mitigate GHG emissions and this impact would remain significant. Like the project, mitigation is available to reduce this alternative's impact to a less-than-significant level. Overall, the GHG impacts of this alternative would be similar to the project.

Hazards and Hazardous Materials

Like the project, the Reduced Development Footprint Alternative would operate an on-site detention basin that is a potential source of mosquitoes that could expose residents to diseases including West Nile virus, malaria, and dengue. Project mitigation would also reduce this alternative's impact to a less-than-significant level. Overall, impacts would be similar that would occur the project for this alternative.

Hydrology and Water Quality

Like the project, the Reduced Development Footprint Alternative would result in new impervious surfaces that would increase drainage flows and water pollutants during site construction and operation. Project mitigation would also reduce this alternative's drainage and water quality impacts to a less-than-significant level. This alternative would avoid potential project conflicts with planned improvements to the North Natomas Levee because land area adjacent to the levee would not be developed. Overall, impacts would be less than those that would occur the project for this alternative because of the smaller area of impervious surfaces in project area.

Noise and Vibration

The Reduced Development Footprint Alternative would generate similar noise impacts from construction activities as the project. While this alternative may alter traffic distribution on area roadways (though total traffic generated is anticipated to be similar to the project), it anticipated that would result in the same significant and unavoidable traffic noise impacts identified for the project along Sorento Road and Del Paso Road. This alternative would also experience project traffic noise impacts from Elkhorn Boulevard, Del Paso Road, and Club Center Drive, and from operational noise from the commercial uses at the suburban center. Like the project, mitigation is available to reduce this impact to a less-than-significant level. Overall, alternative impacts would be similar to what would occur for the project.

Public Services and Recreation

Like the project, the Reduced Development Footprint Alternative would result in an increase in demand for public services that could result in the need for improvements to fire and police facilities and equipment. Mitigation is available to reduce this impact to a less-than-significant level. Overall, alternative impacts would be similar that would occur for the project.

Transportation and Circulation

The Reduced Development Footprint Alternative is anticipated to generate similar traffic volumes as the project because the total development potential of the project area would be the same. This alternative may alter traffic distribution on area roadways as a result of concentrating development along Del Paso Road. Like the project, this alternative would also result in the same significant construction, transit, intersection (Sorento Road / Del Paso Road) and roadway segment impacts (Elkhorn Boulevard, Regency Park Circle, Danbrook Drive, Sorento Road, Barros Drive, and Mayfield Street) under existing and cumulative conditions identified for the project. Project impacts to local roadways would remain significant and unavoidable even with the application of mitigation. Overall, the transportation impacts for the Reduced Development Footprint Alternative would be similar that would occur for the project.

Urban Design and Visual Resources

Like the project, the Reduced Development Footprint Alternative would result in alteration of the existing visual character and introduction of new light and glare sources to the project area from views along Sorento Road, Del Paso Road, and local roadways to the west. This alternative would retain the existing visual character for views along Elkhorn Boulevard and avoid significant and unavoidable project impacts to that view. Mitigation is available to mitigate light and glare impacts to a less-than-significant level. Therefore, this alternative would result in a reduced visual impact than that would occur with the project.

Utilities

Like the project, the Reduced Development Footprint Alternative would increase the demand for water, wastewater, and solid waste services. While no significant utility impacts would occur under the project, this alternative would reduce water supply demands by 557.62 acre-feet as a result of increasing the density of the residential development (based on City water demand factors in the City's Water Supply Assessment Checklist in Appendix I). Therefore, this alternative would result in a reduced utility demand than that would occur with the project.

Energy

Like the project, the Reduced Development Footprint Alternative would result in construction, operational, and transportation energy demand. While the total residential and commercial development potential of this alternative and the project would be the same, higher residential density component of this alternative could result in reduced energy demand from energy efficiency from typical multifamily building design as compared to single family development. While no significant energy impacts would occur under the project, the Reduced Development Footprint Alternative would be less than those that would occur with the project.

7.4.3 Alternative 3: Reduced Intensity Alternative

Under Alternative 3, Reduced Intensity Alternative, the residential development potential would be reduced by 1,606 dwelling units. The land plan would be modified to designate the Krumenacher Ranch site and Panhandle PUD Villages 6, 7, 13, and 14 as "Parks/Open Space" and would be zoned "Agriculture-Open Space" to ensure the long-term preservation of the current agricultural and open space condition of this area. The project roadway network would be modified to eliminate connection to Sorento Road. All other aspects of the project's land plan and roadway system design would remain the same (see Exhibit 7-3). Table 7-2 provides a summary of land uses under this alternative.

This alternative is intended to avoid or reduce identified significant biological resource and visual impacts by preserving the vernal pool and swale habitat conditions in the northwestern corner of the project area and providing visual buffering from views along Elkhorn Boulevard. The elimination of roadway connection to Sorento Road is intended to eliminate significant project traffic noise impacts to existing residences that front onto Sorento Road. The reduction in residential units would reduce traffic impacts.

Table 7-2 Alternative 3: Reduced Intensity Alternative Land Use Summary

Land Use	Net Acreage	Dwelling Unit Potential
Suburban Neighborhood Low Density - Compact	59.3	500
Suburban Neighborhood Low Density – Estate	20.2	100
Suburban Neighborhood Low Density - Traditional	113.5	454
Residential Total	193.0	1,054
Suburban Center	9.7	
Parks/Open Space	227.9	
Ninos Parkway	20.1	
High School/Middle School (East Natomas Education Complex)	60.4	
Elementary School	10.0	
Detention Basin	13.4	
Major Collector and Residential Streets	54.9	
Total	589.4	1,054

Compiled by Ascent Environmental 2017.

EVALUATION OF ENVIRONMENTAL EFFECTS

Land Use, Population, and Housing

The Reduced Intensity Alternative would not result in conflicts with existing residential land uses surrounding the project area because the project design would complement existing suburban development to the west and transitions densities to existing rural residential development to the west in a manner similar to the project. This alternative would not result in any conflicts with existing land uses or divide an established community. This alternative would implement City General Plan and North Natomas Community Plan land use policies regarding neighborhood design, transition, and connectivity similar to the project, though it would not provide new connection to the Valley View Acres community east of the site. The Reduced Intensity Alternative would also result in reduced residential growth potential (1,606 fewer dwelling units) as the project. Overall, the land use, population, and housing impacts of this alternative would be similar to the project.

Agricultural Resources

The Reduced Intensity Alternative would not result in the loss of Important Farmlands (defined by CEQA as Prime Farmland, Unique Farmland, and Farmland of Statewide Importance) similar to the project. This alternative would designate the northern portion of the project area (Krumenacher Ranch) as “Parks/Open Space” that would continue to function as open space and agricultural use. Therefore, the agricultural resource impacts of the Reduced Intensity Alternative would be less than those that would occur with the project.

Air Quality

The Reduced Intensity Alternative construction (particulate matter and ozone precursors), operational (ozone precursors), and cumulative air quality impacts would be similar in nature to the project but less because of the reduced construction and operational emissions from the reduced number of residential units (1,606 fewer dwelling units than the project). Construction and operational air quality impacts for this alternative are still anticipated to be above the SMAQMD significance thresholds. The Reduced Intensity Alternative would also result in similar potentially significant TAC and odor generation impacts from the suburban center commercial uses that have been identified for the project. Like the project, mitigation would reduce construction, TAC, and odor generation impacts to a less-than-significant level for the Reduced Intensity

Alternative. However, the reduced residential development of this alternative would not fully mitigate air pollutant emissions and operational and cumulative air quality impacts would remain significant and unavoidable. Overall, the air quality impacts of this alternative would be less than those that would occur with the project.

Biological Resources

Under the Reduced Intensity Alternative, vernal pools and swales in the northwestern corner of the project area would be retained. Like the project, this alternative would result in the loss of grasslands, agricultural habitat, and protected trees in the project area. As with the project, this alternative would not avoid the project's impacts on biological resources, and mitigation would reduce the impact to a less-than-significant level. Overall, the Reduced Intensity Alternative would reduce biological resource impacts that would occur with the project by preserving the northern and eastern portions of the project area.

Archaeological, Historical, and Tribal Cultural Resources

Under the Reduced Intensity Alternative, the Krumenacher Ranch site (identified as possibly eligible for the Sacramento Register of Historic and Cultural Resources) would not be developed and the buildings would remain (the project does not propose to remove these buildings). Although impacts to unknown archaeological and tribal cultural resources under this alternative would also occur under the project, the smaller area of surface disturbance would reduce the potential for disturbance of these resources. Overall, impacts would be less than those that would occur under the project for this alternative.

Geology, Soils, Mineral Resources, and Paleontology

Like the project, the Reduced Intensity Alternative would result in development that could result in hazards associated with expansive soils as well as potential destruction of undiscovered paleontological resources. Project mitigation would also reduce this alternative's impact to a less-than-significant level. Overall, impacts would be less than those that would occur the project for this alternative because of the smaller area of surface disturbance would reduce the potential for impact.

Greenhouse Gases Emissions and Climate Change

The Reduced Intensity Alternative construction and operational GHG emission impacts would be similar in nature to the project but less because of the reduced construction and operational emissions from the reduced number of residential units (1,606 fewer dwelling units than the project). However, the residential development reduction of this alternative would not fully mitigate GHG emissions and this impact would remain significant. Like the project, mitigation is available to reduce this alternative's impact to a less-than-significant level. Overall, the GHG impacts of this alternative would be less than those that would occur under the project.

Hazards and Hazardous Materials

Like the project, the Reduced Intensity Alternative would operate an on-site detention basin that is a potential source of mosquitoes that could expose residents to diseases including West Nile virus, malaria, and dengue. Project mitigation would also reduce this alternative's impact to a less-than-significant level. Overall, impacts would be similar that would occur the project for this alternative.

Hydrology and Water Quality

Like the project, the Reduced Intensity Alternative would result in new impervious surfaces that would increase drainage flows and water pollutants during site construction and operation. Project mitigation would also reduce this alternative's drainage and water quality impacts to a less-than-significant level. This alternative would avoid potential project conflicts with planned improvements to the North Natomas Levee because land area adjacent to the levee would not be developed. Overall, impacts would be less than those that would occur the project for this alternative because of the smaller area of impervious surfaces in project area.

Noise and Vibration

The Reduced Intensity Alternative would generate similar noise impacts from construction activities as the project. While this alternative would generate less total traffic volume than the project, it anticipated that would result in the same significant and unavoidable traffic noise impacts identified for the project along Del Paso Road because of the total extent of development under this alternative. This alternative would avoid traffic noise impacts to existing residences along Sorento Road by not providing roadway access to Sorento Road. This alternative would also experience project traffic noise impacts from Elkhorn Boulevard, Del Paso Road, and Club Center Drive, and from operational noise from the commercial uses at the suburban center. Like the project, mitigation is available to reduce this impact to a less-than-significant level. Overall, impacts would be reduced under the Reduced Intensity Alternative.

Public Services and Recreation

Like the project, the Reduced Intensity Alternative would result in an increase in demand for public services that could result in the need for improvements to fire and police facilities and equipment. This alternative would reduce the demand for these services because of its reduced residential development potential (1,606 fewer dwelling units than the project). Mitigation is available to reduce this impact to a less-than-significant level. Overall, impacts would be reduced under the Reduced Intensity Alternative.

Transportation and Circulation

The Reduced Intensity Alternative is anticipated to generate 10,176 fewer residential daily trips than the project (based on project trip generation data in Appendix H, Table 4.10-12). This alternative would alter traffic distribution on area roadways from the elimination of roadway connections to Sorento Road. Like the project, this alternative is anticipated to result in construction, transit, and potential impacts to intersection and roadway operations under existing and cumulative conditions. However, this alternative would reduce the magnitude of project impacts to local roadways because of its reduced traffic generation. Overall, impacts would be reduced under the Reduced Intensity Alternative.

Urban Design and Visual Resources

Like the project, the Reduced Intensity Alternative would result in alteration of the existing visual character and introduction of new light and glare sources to the project area from views along Sorento Road, Del Paso Road, and local roadways to the west. This alternative would retain the existing visual character for views along Elkhorn Boulevard and avoid significant and unavoidable project impacts to that view. Mitigation is available to mitigate light and glare impacts to a less-than-significant level. Therefore, this alternative would result in a reduced visual impact than that would occur with the project.

Utilities

Like the project, the Reduced Intensity Alternative would increase the demand for water, wastewater, and solid waste services. While no significant utility impacts would occur under the project, this alternative would reduce water supply demands by 979.66 acre-feet from the reduction of residential development by 1,606 dwelling units (based on City water demand factors in the City's Water Supply Assessment Checklist in Appendix I). Therefore, this alternative would result in a reduced utility demand than that would occur with the project.

Energy

Like the project, the Reduced Intensity Alternative would result in construction, operational, and transportation energy demand. This alternative would reduce energy usage from the reduction of residential development by 1,606 dwelling units as compared to the project. While no significant energy impacts would occur under the project, the Reduced Intensity Alternative would be less than those that would occur with the project.

7.5 ALTERNATIVES EVALUATED IN LESSER DETAIL

As identified in Chapter 3, “Project Description,” the project consists of the annexation of the 589.4-acre project area into the City. This annexation request does not include the entire sphere of influence and would create an unincorporated island within with City boundaries (see Exhibit 7-4). Standard A.5 of the *Sacramento Local Agency Formation Commission (LAFCo) Policy, Standards, and Procedures Manual* discourages the creation of unincorporated islands unless it is determined that the annexation as proposed is necessary for orderly growth. This issue was addressed in Chapter 6, “Reorganization.”

Sacramento LAFCo has requested that the EIR evaluate an alternative that would consist of the annexation of the entire sphere of influence (SOI). As shown in Exhibit 7-4, the southern portion of the SOI (south of Del Paso Road) contains 835.3 acres that is near build-out with seven vacant parcels remaining. All necessary infrastructure to serve the area is in place (roadways, drainage, water distribution facilities, wastewater conveyance, and electrical facilities). Land uses in this area consist of light industrial, warehousing, office, and commercial uses.

The alternatives analysis below evaluates the physical environmental impacts of expanding the proposed annexation to include the project area (589.4 acres) and the southern portion of the SOI (835.3 acres). Annexation would involve the reorganization of public service and utility provisions and the detachment of the area from existing service districts. Therefore, the analysis below focuses on potential physical environmental impacts from the change in public service and utility providers to the southern portion of the SOI.

All other aspects of the project would remain the same as proposed.

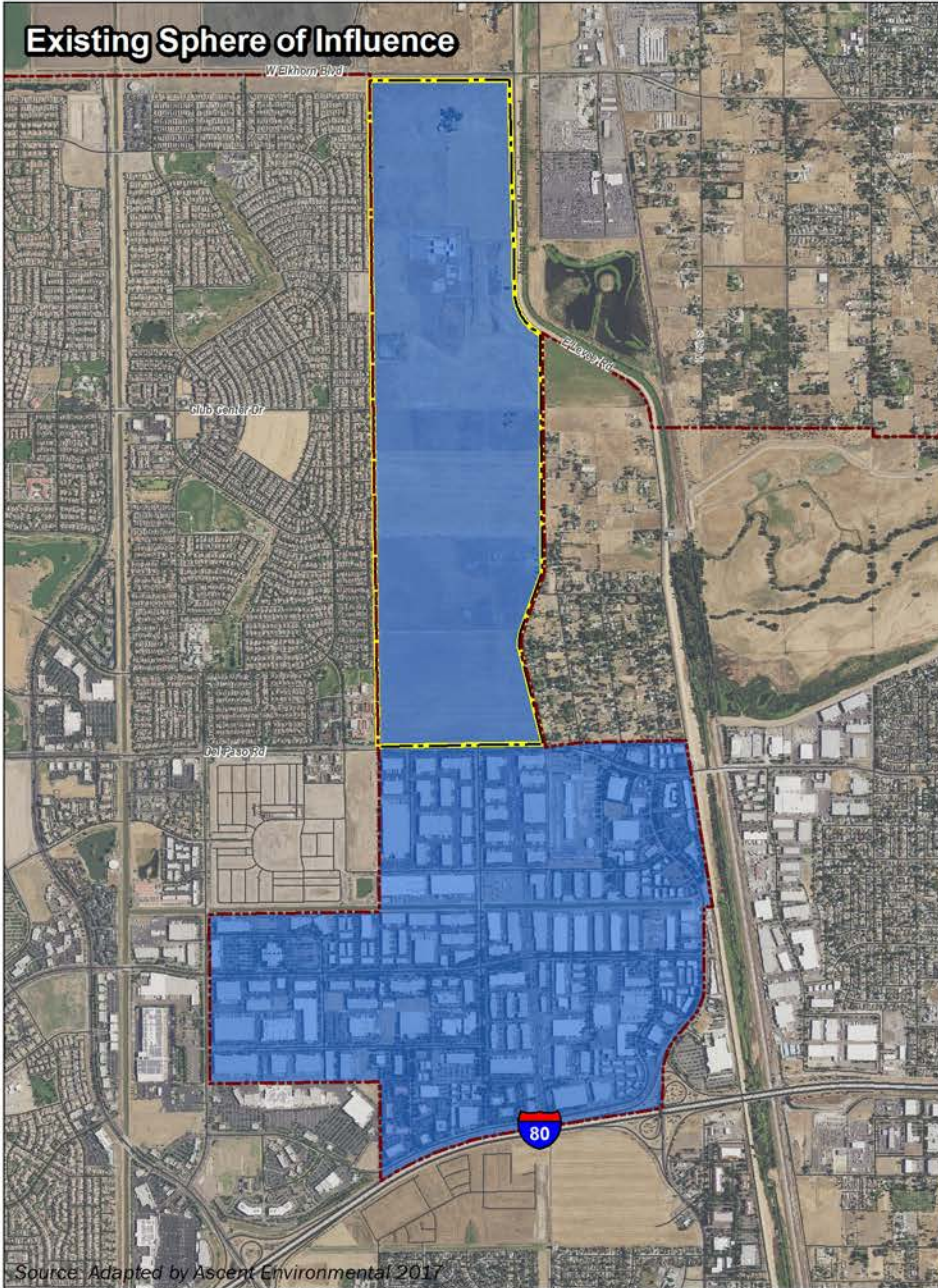
7.5.1 Alternative 4: Complete Annexation of Sphere of Influence Alternative

Alternative 4: Complete Annexation of Sphere of Influence Alternative would expand the proposed annexation to include the southern area of the SOI (835.3 acres) for total annexation area of 1,424.7 acres. No development is proposed in the southern portion of the SOI as part of this alternative, and required City rezoning of the southern portion would retain existing Sacramento County allowed land uses (e.g., light industrial and commercial related uses). The annexation would involve the reorganization of public service and utility provisions and the detachment of the area from existing service districts for the SOI:

- ▲ detachment from Rio Linda Elverta Recreation and Parks District (RLERPD) (parks and recreation services);
- ▲ detachment from Natomas Fire Protection District (fire protection and emergency services);
- ▲ detachment from Sacramento County Water Maintenance District Zone 41 (retail water services);
- ▲ detachment from Sacramento County Water Utility and Sacramento County Water Agency Zone 12 (drainage services in southern portion of SOI only);
- ▲ detachment from Sacramento County Water Agency Zone 13 (water supply and drainage services);
- ▲ detachment from Sacramento County Service Area No. 1 (street lighting maintenance); and
- ▲ detachment from County Service Area No. 10 (enhanced transportation services).

All other aspects of the project would remain the same as proposed.

Existing Sphere of Influence



Complete Annexation of Sphere of Influence Alternative

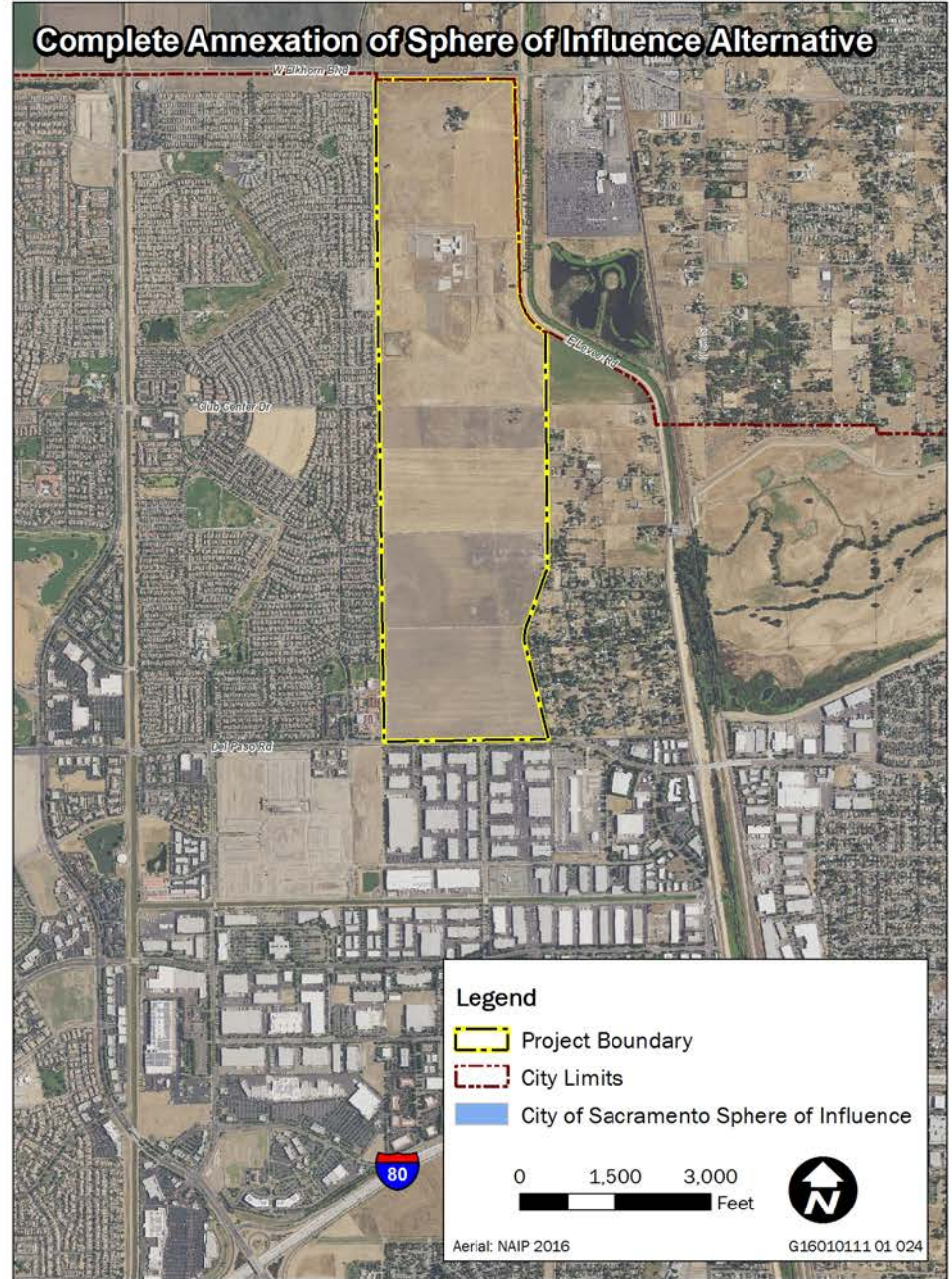


Exhibit 7-4

Complete Annexation of Sphere of Influence Alternative



EVALUATION OF ENVIRONMENTAL EFFECTS

The Complete Annexation of Sphere of Influence Alternative would have the same project environmental impacts associated with the annexation, construction, and development of the Panhandle PUD and its project area (589.4 acres). Evaluation of potential environmental impacts of the detachment from existing service districts is addressed below by service type.

Fire Protection and Emergency Services

This alternative would involve detachment of the entire 1,424.7 acres from the Natomas Fire Protection District and would be served by the City of Sacramento Fire Department. The Natomas Fire Protection District contracts with the City of Sacramento Fire Department for fire protection and emergency services for the City's SOI. These services are provided from the City of Sacramento Fire Department Station 30 that is located approximately ¼ mile from the City's SOI at the northeast corner of Regency Park Circle / Club Center Drive intersection. Water distribution and roadway infrastructure necessary to serve the southern portion of the SOI are already in place to accommodate build-out of this area that the City would operate and maintain. The detachment of southern portion of the SOI from Natomas Fire Protection District would not trigger the need for improvements that could result in physical environmental impacts because fire and emergency medical services for the area are already provided by the City of Sacramento Fire Department and all necessary facilities and infrastructure are in place to provide services. Mitigation identified for the project would also mitigate the alternative's impact to a less-than-significant level. Overall, the fire protection and emergency service impacts of this alternative would be the same those that would occur with the project.

Parks and Recreation Services

This alternative would involve detachment of the entire 1,424.7 acres from the Rio Linda – Elverta Recreation and Park District and would be served by the City. As identified in Impact 5.10-4 in Section 5.10, "Public Services and Recreation," the Panhandle PUD would develop 22.5 acres of park facilities and the Ninos Parkway (20.1 acres) that would be consistent with the City Code Chapter 16.64 for parkland dedication and would meet future resident park needs. The southern portion of the SOI is nearly built-out and consists of non-residential uses and would not generate any demand of park uses. The environmental impacts of the Panhandle PUD park and open space facilities are addressed in the technical sections of this EIR. No additional park facilities would be required under this alternative. This impact is less than significant for the project and this alternative. Overall, the park and recreation service impacts of this alternative would be the same those that would occur with the project.

The Rio Linda – Elverta Recreation and Park District has in the past expressed concerns that the detachment of the entire SOI area could result in a significant revenue impact and that would impact park and recreation service provision (City of Sacramento 2006:4.13-70). No fiscal analysis has been conducted to determine the actual extent of the detachment's effect on the District could be of such extent that deterioration of existing park facilities would occur. Thus, there is insufficient information available to determine if a physical impact to existing District park facilities would occur.

Drainage and Water Supply Services

As noted above, this alternative would require detachment from Sacramento County Water Maintenance District Zone 41, Sacramento County Water Utility and Sacramento County Water Agency Zone 12, and Sacramento County Water Agency Zone 13 for drainage and water supply services that would be provided by the City. The Panhandle PUD area is currently undeveloped and does not utilize municipal water supply or drainage services from these districts. Section 5.8, "Hydrology and Water Quality," and 5.13, "Utilities," identify proposed drainage and water supply improvements and the associated environmental impacts of these services that would be provided by the City. Mitigation identified for the project would also mitigate the alternative's impact to a less-than-significant level.

Water distribution and drainage facilities necessary to serve the southern portion of the SOI are already in place to accommodate build-out of this area that the City would operate and maintain. The detachment of southern portion of the SOI from these service districts would not trigger the need for improvements that could result in physical environmental impacts because all necessary facilities and infrastructure are in place to provide services.

Overall, the drainage and water supply service impacts of this alternative would be the same those that would occur with the project.

Street Lighting Maintenance

This alternative would require detachment from Sacramento County Service Area No. 1 that covers only the southern portion of the SOI. Street lighting necessary to serve the southern portion of the SOI is already in place to accommodate build-out of this area that the City would operate and maintain. The detachment of southern portion of the SOI from this service district would not trigger the need for improvements that could result in physical environmental impacts because the street lighting is already in place. This impact is less than significant for the project and this alternative. Overall, the street lighting maintenance impacts of this alternative would be the same those that would occur with the project.

7.6 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

State CEQA Guidelines Section 15126.6 states that “If the environmentally superior alternative is the ‘no project’ alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives.” Here, the No Project Alternative is the environmentally superior alternative because all the significant impacts of the project would be avoided. However, the No Project Alternative would not meet any of the project’s objectives.

With the Reduced Intensity Alternative, impacts to agricultural resources, air quality, biological resources, cultural resources, geology and soils, greenhouse gas emissions, hydrology and water quality, noise, public services and recreation, traffic, visual resources, utilities, and energy would be reduced, when compared to the project. Because it would result in less overall environmental impact than the project, the Reduced Intensity Alternative would be considered environmentally superior.

Table 7-3 Summary Environmental Effects of the Alternatives Relative to the Project

Environmental Topic	Project	Alternative 1: No Project Alternative	Alternative 2: Reduced Development Footprint Alternative	Alternative 3: Reduced Intensity Alternative	Alternative 4: Complete Annexation of Sphere of Influence Alternative
Land Use, Population, and Housing	Less than Significant	Less	Similar	Similar	Similar
Agricultural Resources	Less than Significant	Less	Less	Less	Similar
Air Quality	Significant and Unavoidable	Less	Similar	Less	Similar
Biological Resources	Less than Significant (with mitigation)	Less	Less	Less	Similar
Archaeological, Historical, and Tribal Cultural Resources	Less than Significant (with mitigation)	Less	Less	Less	Similar
Geology, Soils, Mineral Resources, and Paleontology	Less than Significant (with mitigation)	Less	Less	Less	Similar
Greenhouse Gases and Climate Change	Less than Significant (with mitigation)	Less	Similar	Less	Similar
Hazards and Hazardous Materials	Less than Significant (with mitigation)	Less	Similar	Similar	Similar
Hydrology and Water Quality	Less than Significant (with mitigation)	Less	Less	Less	Similar
Noise and Vibration	Significant and Unavoidable	Less	Similar	Less	Similar
Public Services and Recreation	Less than Significant (with mitigation)	Less	Similar	Less	Similar
Transportation and Circulation	Significant and Unavoidable	Less	Similar	Less	Similar
Urban Design and Visual Resources	Significant and Unavoidable	Less	Less	Less	Similar
Utilities	Less than Significant	Less	Less	Less	Similar
Energy	Less than Significant	Less	Less	Less	Similar

8 OTHER CEQA-MANDATED SECTIONS

8.1 SIGNIFICANT ENVIRONMENTAL EFFECTS THAT CANNOT BE AVOIDED

Section 21100(b)(2)(A) of the State CEQA Guidelines provides that an EIR shall include a detailed statement setting forth “in a separate section: any significant effect on the environment that cannot be avoided if the project is implemented.” Accordingly, this section provides a summary of significant environmental impacts of the Panhandle Annexation and PUD that cannot be mitigated to a less-than-significant level.

Chapter 4, “Land Use, Population, and Housing,” and Sections 5.1 through 5.14 of this Draft EIR describe the potential environmental impacts of the Panhandle Annexation and PUD and recommend various mitigation measures to reduce impacts, to the extent feasible. The cumulative impact discussions within Sections 5.1 through 5.14 determine whether the incremental effects of the Panhandle Annexation and PUD are significant when viewed in combination with the effects of past projects, other current projects, and probable future projects (as listed in Table 5-2). For the following environmental issue areas, all effects were found to either result in no impact or less-than-significant impacts.

- ▲ Land Use, Population, and Housing (Chapter 4)
- ▲ Agricultural Resources (Section 5.1)
- ▲ Utilities (Section 5.13)
- ▲ Energy (Section 5.14)
- ▲ Reorganization (Chapter 6))

For the following environmental issue areas, one or more environmental impacts were found to be potentially significant or significant; however, these impacts were reduced to a less-than-significant levels with mitigation.

- ▲ Biological Resources (Section 5.3)
- ▲ Archaeological, Historical, and Tribal Cultural Resources (Section 5.4)
- ▲ Geology, Soils, Mineral Resources, and Paleontology (Section 5.5)
- ▲ Greenhouse Gas Emissions and Climate Change (Section 5.6)
- ▲ Hazardous Materials and Hazards (Section 5.7)
- ▲ Hydrology and Water Quality (Section 5.8)
- ▲ Public Services and Recreation (Section 5.10)

For the following environmental issue areas, one or more impacts are considered significant and unavoidable; that is, no feasible mitigation is available to reduce the project’s impacts or the project’s contribution to cumulative impacts to a less-than-significant level.

Air Quality (Section 5.2)

- ▲ Impact 5.2-2: Operational air quality impacts
- ▲ Impact 5.2-7: Cumulative impacts to air quality

Noise and Vibration (Section 5.9)

- ▲ Impact 5.9-1: Construction noise impacts
- ▲ Impact 5.9-2: Traffic noise impacts
- ▲ Impact 5.9-5: Cumulative construction noise impacts
- ▲ Impact 5.9-6: Cumulative traffic noise impacts

Transportation and Circulation (Section 5.11)

- ▲ Impact 5.11-3: Roadway segment traffic operation impacts (with the exception of Elkhorn Boulevard)
- ▲ Impact 5.11-10: Cumulative roadway segment traffic operation impacts (with the exception of Elkhorn Boulevard)

Urban Design and Visual Resources (Section 5.12)

- ▲ Impact 5.12-1: Impacts to visual character of area
- ▲ Impact 5.12-3: Cumulative visual character impacts

8.2 SIGNIFICANT IRREVERSIBLE ENVIRONMENTAL CHANGES

The State CEQA Guidelines (Section 15126) require a discussion of the significant irreversible environmental changes which would be involved in a project should it be implemented. The irreversible and irretrievable commitment of resources is the permanent loss of resources for future or alternative purposes. Irreversible and irretrievable resources are those that cannot be recovered or recycled or those that are consumed or reduced to unrecoverable forms.

The project would result in the irreversible and irretrievable commitment of energy and material resources during construction and operation, including the following:

- ▲ construction materials, including such resources as soil, rocks, wood, concrete, glass, roof shingles, and steel;
- ▲ land area committed to new project facilities;
- ▲ water supply for project operation; and
- ▲ energy expended in the form of electricity, gasoline, diesel fuel, and oil for equipment and transportation vehicles that would be needed for project construction and operation.

The use of these nonrenewable resources is expected to account for a minimal portion of the region's resources and would not affect the availability of these resources for other needs within the region. Construction activities would not result in inefficient use of energy or natural resources (see Section 5.14, "Energy," for a further discussion of the project's energy use). Long-term project operation would not result in substantial long-term consumption of energy and natural resources.

8.3 GROWTH-INDUCING IMPACTS

CEQA specifies that growth-inducing impacts of a project must be addressed in an EIR (Pub. Resources Code, Section 21100[b][5]). Specifically, CCR Section 15126.2(d) states that the EIR shall:

Discuss the ways in which the proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. Included in this are projects which would remove obstacles to population growth (a major expansion of a wastewater treatment plant might, for example, allow for more construction in service areas). Increases in the population may tax existing community service facilities, requiring construction of new facilities that could cause significant environmental effects. Also, discuss the characteristics of some projects which may encourage and facilitate other activities that could significantly affect the environment, either individually or cumulatively. It must not be assumed that growth in any area is necessarily beneficial, detrimental, or of little significance to the environment.

Direct growth inducement would result if a project involved construction of new housing, which would facilitate new population to an area. Indirect growth inducement would result, for instance, if implementing a project resulted in any of the following:

- ▲ substantial new permanent employment opportunities (e.g., commercial, industrial, or governmental enterprises);
- ▲ substantial short-term employment opportunities (e.g., construction employment) that indirectly stimulates the need for additional housing and services to support the new temporary employment demand; and/or
- ▲ removal of an obstacle to additional growth and development, such as removing a constraint on a required public utility or service (e.g., construction of a major sewer line with excess capacity through an undeveloped area).

The State CEQA Guidelines do not distinguish between planned and unplanned growth for purposes of considering whether a project would foster additional growth. Therefore, for purposes of this EIR, to reach the conclusion that a project is growth-inducing as defined by CEQA, the EIR must find that it would foster (i.e., promote, encourage, allow) additional growth in economic activity, population, or housing, regardless of whether the growth is already approved by and consistent with local plans. The conclusion does not determine that induced growth is beneficial or detrimental, consistent with Section 15126.2(d) of the State CEQA Guidelines.

If the analysis conducted for the EIR results in a determination that a project is growth-inducing, the next question is whether that growth may cause adverse effects on the environment. Environmental effects resulting from induced growth (i.e., growth-induced effects) fit the CEQA definition of “indirect” effects in Section 15358(a)(2) of the State CEQA Guidelines. These indirect or secondary effects of growth may result in significant environmental impacts. CEQA does not require that the EIR speculate unduly about the precise location and site-specific characteristics of significant, indirect effects caused by induced growth, but a good-faith effort is required to disclose what is feasible to assess. Potential secondary effects of growth could include consequences – such as conversion of open space to developed uses, increased demand on community and public services and infrastructure, increased traffic and noise, degradation of air and water quality, or degradation or loss of plant and wildlife habitat – that are the result of growth fostered by the project.

The decision to allow those projects that result from induced growth is the subject of separate discretionary processes by the lead agency responsible for considering such projects. Because the decision to allow growth is subject to separate discretionary decision making, and such decision making is itself subject to CEQA, the analysis of growth-inducing effects is not intended to determine site-specific environmental impacts and specific mitigation for the potentially induced growth. Rather, the discussion is intended to disclose the potential for environmental effects to occur more generally, such that decision makers are aware that additional environmental effects are a possibility if growth-inducing projects are approved. The decision of whether impacts do occur, their extent, and the ability to mitigate them is appropriately left to consideration by the agency responsible for approving such projects at such times as complete applications for development are submitted.

8.3.1 Growth Variables

The timing, magnitude, and location of land development and population growth in a community or region are based on various interrelated land use and economic variables. Key variables include regional economic trends, market demand for residential and nonresidential uses, land availability and cost, the availability and quality of transportation facilities and public services, proximity to employment centers, the supply and cost of

housing, and regulatory policies or conditions. Because the General Plan of a community defines the location, type, and intensity of growth, it is the primary means of regulating development and growth in California.

8.3.2 Growth-Inducing Impacts of the Project

DIRECT GROWTH-INDUCING IMPACTS ASSOCIATED WITH POPULATION GROWTH

Implementation of the project would foster short-term and long-term economic growth as a result of new construction, increased residential units, and employment at the project's suburban center. Construction could commence in 2018 and extend for approximately seven years. Construction activities would generate the need for construction workers during this time period and is anticipated to utilize people who are employed in the construction industry in the region. Therefore, it would be reasonable to expect that construction workers for the project would not relocate to the City for a temporary job. During operation, it is anticipated that up to 7,182 new residents would occupy the on-site residences and that the suburban center could employ 272 workers (see Table 4-6 in Chapter 4, Land Use, Population, and Housing," for details on project growth projections). Increased City resident and employment levels are considered to result in direct growth-inducing effects. The environmental impacts associated with these direct growth-inducing effects are described throughout this EIR.

DIRECT GROWTH-INDUCING IMPACTS ASSOCIATED WITH REMOVAL OF BARRIERS TO POPULATION GROWTH

The project would remove barriers to population growth insofar as the project would require annexation to the City and a General Plan Amendment from the City to establish the Panhandle PUD land uses that allow for residential and commercial uses that are currently allowed under Sacramento County General Plan and zoning designations. The project would eliminate an obstacle to growth through the extension and provision of utilities and services, including extension of water service and pipelines, wastewater collection systems, and roadways that would interconnect to land areas north, east, west, and south of the project. The project would directly connect to existing utility infrastructure (water, wastewater, natural gas, and electricity) and would not facilitate additional development through expansion of regional facilities (e.g., water treatment plants, wastewater treatment plants, electrical substations). The environmental impacts associated with these direct growth-inducing effects are described throughout this EIR.

OTHER EMPLOYMENT GROWTH AND OTHER ECONOMIC-RELATED GROWTH IMPACTS

Vacancy rates are an indicator of housing supply and demand. Low vacancy rates influence greater upward price pressures and higher vacancy rates indicate downward price pressures. A five to six percent vacancy rate is generally considered healthy. According to the City of Sacramento 2013 Housing Element, approximately 8.5 percent of City housing units were vacant in 2012 (City of Sacramento 2013: H 3-24). However, the vacancy rates have been improving. The California Department of Finance 2016 housing estimates identify the City's vacancy rate at 7.9 percent (California Department of Finance 2016).

The project is a proposed master-planned residential community development, adjacent to existing residential, industrial, and commercial development. Homebuyers and employees associated with the project are anticipated to originate from other portions of the City and the Sacramento region, because of the project's proximity to job centers in the Natomas area as well as downtown Sacramento. Job growth projections and perceived demands are based on assumptions related to increased population growth. Thus, because the project would increase housing and population levels within the City, greater than anticipated in the General Plan (project area is designated by the General Plan as "Planned Development" and identifies no development assumptions for this designation), the project would facilitate the need for new employment, as well as goods and services (e.g., restaurants, grocery, gas stations). Facilitation of new employment, goods, and services could result in increased economic growth within the City and would be considered an indirect growth-inducing effect. Potential secondary effects of growth could include

environmental consequences, such as conversion of open space to developed uses, increased demand on community and public services and infrastructure, increased traffic and noise, degradation of air and water quality, or degradation or loss of plant and wildlife habitat. However, the North Natomas Community Plan area currently contains several retail, commercial, and job centers that may accommodate this growth inducement and not require further development outside of the City.

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10 REFERENCES AND PERSONS CONSULTED

Chapter 4, Land Use, Population, and Housing

City of Sacramento. 2013. (December). *2013-2021 Housing Element*. Sacramento, CA.

_____. 2016a. Sacramento Railyards Specific Plan Update, KP Medical Center, MLS Stadium, & Stormwater Outfall Draft Subsequent EIR (State Clearinghouse No. 2006032058). Sacramento, CA. Prepared by ESA, Sacramento, CA.

_____. 2016b. Community Profile and Demographics, Income and Spending. Available at: <<http://www.cityofsacramento.org/Economic-Development/Why-Sacramento/Demographics-and-Market-Information>>. Data provided by Applied Geographic Solutions. Accessed on October 20, 2016.

Sacramento Area Council of Governments. 2012 (September 20). Regional Housing Needs Plan 2013-2021. Available at: < http://www.sacog.org/sites/main/files/file-attachments/adopted_sacog_rhnp_092012.pdf>. Accessed on October 20, 2016.

_____. 2016. *2016 Metropolitan Transportation Plan/Sustainable Communities Strategy*. Sacramento, CA

Sacramento County. 2013. 2013 – 2021 Housing Element - Sacramento County, Adopted October 8, 2013, Resolution No. 2013-0666. Chapter 5 Population, Employment, and Household Characteristics. Available at: < http://www.per.sacounty.net/PlansandProjectsIn-Progress/Documents/HE_Update/5.%20Pop,%20Employment%20and%20Household%20Characteristics%20-%20Final.pdf>. Accessed on October 24, 2016.

State of California, Department of Finance. 2013 (May). *E-5 Population and Housing Estimates for Cities, Counties and the State – January 1, 2011- 2016*. Sacramento, California.

State of California Employment Development Department. 2016. Labor Force and Unemployment Rate for Cities and Census Designated Places. Available at: <http://www.labormarketinfo.edd.ca.gov/data/labor-force-and-unemployment-for-cities-and-census-areas.html> <http://www.labormarketinfo.edd.ca.gov>. Accessed October 24, 2016.

U.S. Census Bureau. 2011. 2010 Census Interactive Population Search, CA-Sacramento City. Available at: <<http://www.census.gov/2010census/popmap/ipmtext.php?fl=06:0664000>>. Accessed October 20, 2016.

Section 5.1, Agricultural Resources

California Department of Conservation. 2014. Farmland Mapping and Monitoring Program. Available: <http://www.conservation.ca.gov/dlrp/fmmp/Pages/Sacramento.aspx>. Accessed: November 16, 2016.

City of Sacramento. 2015. 2035 General Plan. Adopted March 3, 2015. Available: <http://www.cityofsacramento.org/Community-Development/Resources/Online-Library/General-Plan>. Accessed: November 16, 2016.

Section 5.2, Air Quality

ARB. See California Air Resources Board.

California Air Resources Board. 2003. *HARP User Guide*. Sacramento, CA.

- _____. 2005 (March). *Air Quality and Land Use Handbook: A Community Health Perspective*. Sacramento, CA. Available: <http://arb.ca.gov/ch/handbook.pdf>. October 24, 2016.
- _____. 2013. *California Almanac of Emissions and Air Quality—2013 Edition*. Available: <http://www.arb.ca.gov/aqd/almanac/almanac13/almanac13.htm>. Accessed October 6, 2016.
- _____. 2016a, May 4. Ambient Air Quality Standards. Available: <https://www.arb.ca.gov/research/aaqs/aaqs2.pdf>. Accessed October 6, 2016.
- _____. 2016b. Air Quality Data Statistics. Available: <https://www.arb.ca.gov/adam>. Accessed October 6, 2016.
- _____. 2000 (October). Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles. Available: <https://www.arb.ca.gov/diesel/documents/rrpFinal.pdf>. Accessed April 24, 2017.
- California Department of Transportation. 2014. Traffic Branch Data 2014 All Traffic Volumes on CSHS. Available: <http://www.dot.ca.gov/trafficops/census/2014all/Route71-80.html>. Accessed October 24, 2016.
- Caltrans. See California Department of Transportation.
- City of Sacramento. 2015. *Sacramento 2035 General Plan*. Adopted March 3, 2015. Sacramento, CA.
- DKS. See DKS Associates.
- DKS Associates. 2017 (March 9). Transportation Analysis Section 4.10 Panhandle Annexation. Prepared by DKS Associates.
- EPA. See U.S. Environmental Protection Agency.
- Jester, Jim. Public Record Act Coordinator. Sacramento Metropolitan Air Quality Management District, Sacramento, CA. April 11, 2017—email to Hannah Kornfeld of Ascent Environmental regarding odor complaints surrounding Panhandle project site.
- OEHHA. See Office of Environmental Health Hazard Assessment.
- Office of Environmental Health Hazard Assessment. 2012. *Technical Support Document for Exposure Assessment and Stochastic Analysis*. Available: http://oehha.ca.gov/air/hot_spots/tsd082712.html. Accessed October 30, 2014.
- Sacramento Metropolitan Air Quality Management District. 2016. Air Quality Pollutants and Standards. Available: <http://www.airquality.org/Air-Quality-Health/Air-Quality-Pollutants-and-Standards>. Accessed October 6, 2016.
- SMAQMD. See Sacramento Metropolitan Air Quality Management District.
- U.S. Environmental Protection Agency. 2016. Criteria Air Pollutants. Available: <https://www.epa.gov/criteria-air-pollutants>. Last updated March 2, 2017. Accessed March 22, 2017.
- _____. 2012 (April). *2008 Ground-Level Ozone Standards: Region 9 Final Designations*. Available: <http://www.epa.gov/ozonedesignations/2008standards/final/region9f.htm>. Accessed October 5, 2015.

Western Regional Climate Center. 2017. Average Wind Direction. Available:
<http://www.wrcc.dri.edu/climatedata/climtables/westwinddir/>. Accessed March 22, 2017.

_____. 2015. Sacramento 5 ESE, California Period of Monthly Climate Summary. Available:
<http://www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca7633>. Accessed April 24, 2017.

WRCC. See Western Regional Climate Center.

Section 5.3, Biological Resources

California Department of Fish and Game. 2009. Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities. California Department of Fish and Wildlife. Sacramento, CA.

California Department of Fish and Wildlife (formerly CDFG). 2016. Natural Communities List – Background Information. Available: <https://www.wildlife.ca.gov/Data/VegCAMP/Natural-Communities/Background>. Accessed November 29, 2016.

California Native Plant Society, Rare Plant Program. 2016. Inventory of Rare and Endangered Plants (online edition, v8-02). California Native Plant Society, Sacramento, CA. <https://www.rareplants.cnps.org>. Accessed: November 8, 2016.

California Natural Diversity Database. 2016 (November). Results of electronic records search. Sacramento: California Department of Fish and Wildlife, Biogeographic Data Branch.

Civil Engineering Solutions. 2007. *Panhandle Project, Final Master Drainage Report*. Sacramento, CA.

City of Sacramento, Sutter County, Natomas Basin Conservancy, and Natomas Central Mutual Water Company. 2003. Final Natomas Basin Habitat Conservation Plan. Sacramento, CA. Available online: <http://www.natomasbasin.org/helpful-documents/2003-nbhcp-related-documents/>.

City of Sacramento. 2006 and 2007. *Panhandle Annexation and PUD Draft and Final EIR*. State Clearinghouse No. 2005092043. Sacramento, CA. Prepared by PMC. Ranch Cordova, CA.

Estep. J. 2008. The Distribution, Abundance, and Habitat Associations of the Swainson's Hawk (*Buteo swainsoni*) in Yolo County. Prepared for Technology Associates International Corporation, San Diego, and Yolo Natural Heritage Program, Woodland, CA.

Gibson and Skordal, LLC. 2004a (May). Jurisdictional Delineation and Special Status Species Evaluation. Dunmore-BD Property. Sacramento, CA. Prepared for Dunmore Homes, Roseville, CA.

_____. 2004b (April). Jurisdictional Delineation and Special Status Species Evaluation. Dunmore – Cononelos Property. Sacramento, CA. Prepared for Dunmore Homes, Roseville, CA.

_____. 2004c (April). Jurisdictional Delineation and Special Status Species Evaluation. Dunmore – Richter Property. Sacramento, CA. Prepared for Dunmore Homes, Roseville, CA.

_____. 2005a (May). Jurisdictional Delineation and Special Status Species Evaluation. Krumenacher Property. Sacramento, CA. Prepared for Vaquero Land Holding, Granite Bay, CA._____. 2005b (May). Jurisdictional Delineation and Special Status Species Evaluation. Dunmore – Brothers Property. Sacramento, CA. Prepared for Dunmore Homes, Roseville, CA.

- _____. 2005c (November). Jurisdictional Delineation and Special Status Species Evaluation. Dunmore Ernest Brothers Property. Sacramento, CA. Prepared for Dunmore Homes, Roseville, CA.
- Grant Joint Union High School District. 2005 (December). Draft Environmental Impact Report: Grant Joint Union High School District New High School/ Middle School. Prepared by Padre Associates, Inc., San Luis Obispo, CA.
- Helm Biological Consulting. 2005a (June). Wet-Season Sampling for Federally Listed Large Branchiopods at the Dunmore-BD Property, Sacramento County, California. Prepared for Gibson and Skordal, Sacramento, CA.
- _____. 2005b (November). Dry-Season Sampling for Federally Listed Large Branchiopods at the Panhandle Properties. Prepared for Gibson and Skordal, Sacramento, CA. _____ . 2005c (November). Dry-Season Sampling for Federally Listed Large Branchiopods at the Grant Property. Prepared for Gibson and Skordal, Sacramento, CA.
- _____. 2006 (July). Wet-Season Sampling for Federally Listed Large Branchiopods at the Panhandle Properties. Prepared for Gibson and Skordal, Sacramento, CA.
- Sierra Nevada Arborists. 2003a. Arborist Report for BD Property (4701 Sorrento Road, Sacramento, CA). Roseville, CA.
- _____. 2003b. Arborist Report for Cononelos Property (County of Sacramento, CA). Roseville, CA.
- _____. 2003c. Preliminary Arborist Report for the Richter Property (County of Sacramento, CA). Roseville, CA.
- _____. 2005. Initial Arborist Report and Inventory Summary for the Lavern Brothers Property (County of Sacramento, CA). Loomis, CA.
- _____. 2006. Initial Arborist Report and Inventory Summary for the Krumenacher Property (County of Sacramento, CA). Loomis, CA.
- U.S. Fish and Wildlife Service. 2016. Environmental Conservation Online System (ECOS) IPAC Trust Resources Report. List of proposed, candidate, threatened and endangered plant and wildlife species, critical habitat and other natural resources that occur or have the potential to occur within the project area. Available online at: <http://ecos.fws.gov/ipac/>. Accessed October 18, 2016.
- _____. 1994 (September 19). Determination of Endangered Status for the Conservancy Fairy Shrimp, Longhorn Fairy Shrimp, and the Vernal Pool Tadpole Shrimp; and Threatened Status for the Vernal Pool Fairy Shrimp. Final Rule. Federal Register 59: 48136- 48153.
- Witham, C.W. 2006. Field Guide to Vernal Pools of Mather Field, Sacramento County. California Native Plant Society Sacramento Valley Chapter, Sacramento, CA.

Section 5.4, Archaeological, Historical, and Tribal Cultural Resources

- Dames and Moore. 1994. *Draft Report: Archeological Inventory Report – Natomas Locality, Cultural Resources Inventory and Evaluation for the American River Watershed Investigation, El Dorado, Placer, Sacramento, and Sutter Counties, California*. Prepared for the US Army Corps of Engineers, Sacramento District, Sacramento, California.
- _____. 1996. *Rural Historic Landscape Report for Reclamation District 1000 for the Cultural Resources Inventory and Evaluations for the American River Watershed Investigation, Sacramento and*

Sutter Counties, California. Prepared for the US Army Corps of Engineers, Sacramento District, Sacramento, California.

MBI. See Michael Baker International.

Michael Baker International. 2017 (January). *Cultural Resources Letter Report for the Panhandle EIR Update Project*.

Peak & Associates, Inc. 1997. *Historic American Engineering Record Reclamation District 1000 HAER NO. CA-187*.

_____. 2006a. *Determination of Eligibility and Effect for the Brothers Parcel, Natomas Panhandle Annexation Area*. February.

_____. 2006b. *Determination of Eligibility and Effect for the Natomas Panhandle Annexation Project Area*. September 2005. Revised September 2006.

Pacific Municipal Consultants. 2004 (September). *Archaeological and Historic Investigations for the North Natomas High/Middle School Project*. Prepared for Padre & Associates.

_____. 2007. *Archaeological and Historical Resources Investigations for the Panhandle Planned Unit Development Project in Sacramento County*. Prepared for Vaquero Land Holding, LLC.

PMC. See Pacific Municipal Consultants.

Section 5.5, Geology, Soils, Mineral Resources, and Paleontology

Wallace Kuhl. 2016a (April). Geotechnical Engineering Report, Natomas Panhandle Coronelos Property. Sacramento, CA. Prepared by Wallace Kuhl. West Sacramento, CA.

_____. 2016b (April). Geotechnical Engineering Report, Natomas Panhandle Beachfield Property. Sacramento, CA. Prepared by Wallace Kuhl & Associates. West Sacramento, CA.

_____. 2016c (March). Geotechnical Engineering Report, Natomas Panhandle BD Properties. Sacramento, CA. Prepared by Wallace Kuhl & Associates. West Sacramento, CA.

_____. 2016d (April). Geotechnical Engineering Report, Natomas Panhandle Moontide/Richter Properties. Sacramento, CA. Prepared by Wallace Kuhl & Associates. West Sacramento, CA.

_____. 2016e (April). Geotechnical Engineering Report, Natomas Panhandle Brothers Properties. Sacramento, CA. Prepared by Wallace Kuhl & Associates. West Sacramento, CA.

Section 5.6, Greenhouse Gas Emissions and Climate Change

ARB. See California Air Resources Board.

Cal-Adapt. 2016. *Climate Tools*. Available: <http://cal-adapt.com/tools/>. Accessed June 15, 2016.

_____. 2017a. *Climate Tools. Wildfire*. Available: <http://cal-adapt.org/fire/>. Accessed March 28, 2017.

_____. 2017b. *Sea Level Rise*. Available: <http://beta.cal-adapt.org/tools/slr-calflod-3d/>. Accessed March 28, 2017.

California Air Resources Board. 2013. *Facts About California's Sustainable Communities Plans*. Available: http://www.arb.ca.gov/cc/sb375/sacog_fact_sheet.pdf. Last revised October 2, 2013. Accessed March 2015.

- _____. 2014 (May). *First Update to the Climate Change Scoping Plan*. Available: https://www.arb.ca.gov/cc/scopingplan/2013_update/first_update_climate_change_scoping_plan.pdf. Accessed January 3, 2017.
- _____. 2014a. *California Greenhouse Gas Inventory for 2000-2012—by Category as Defined in the 2008 Scoping Plan*. Last Updated March 24, 2014. Available at http://www.arb.ca.gov/cc/inventory/data/tables/ghg_inventory_scopingplan_00-12_2014-03-24.pdf. Accessed October 13, 2014.
- _____. 2016a. *California’s Advanced Clean Cars Program*. Available: <https://www.arb.ca.gov/msprog/acc/acc.htm> and <http://www.arb.ca.gov/newsrel/newsrelease.php?id=282>. Accessed January 3, 2017.
- _____. 2016b (March). *California Greenhouse Gas Inventory for 2000-2014*. Available: https://www.arb.ca.gov/cc/inventory/data/tables/ghg_inventory_scopingplan_2000-14.pdf. Accessed April 24, 2017.
- _____. 2017 (January). *The 2017 Climate Change Scoping Plan Update*. Available: https://www.arb.ca.gov/cc/scopingplan/2030sp_pp_final.pdf. Accessed April 24, 2017.
- California Department of Water Resources. 2006 (July). *Progress on Incorporating Climate Change into Management of California’s Water Resources*. Available: <http://www.water.ca.gov/climatechange/docs/DWRClimateChangeJuly06.pdf>. Accessed March 28, 2017.
- California Energy Commission. 2015a (June). *Building Energy Efficiency Standards for Residential and Nonresidential Buildings*. Available <http://www.energy.ca.gov/2015publications/CEC-400-2015-037/CEC-400-2015-037-CMF.pdf>. Accessed January 3, 2017.
- _____. 2015b (June). “2016 Building Energy Efficiency Standards.” Adoption Hearing. June 10, 2015.
- California Natural Resources Agency. 2009. *2009 California Climate Adaptation Strategy*. Available: http://resources.ca.gov/docs/climate/Statewide_Adaptation_Strategy.pdf. Accessed April 24, 2017.
- _____. 2012. *Our Changing Climate: Vulnerability & Adaptation to the Increasing Risks of Climate Change in California*. Available at http://www.water.ca.gov/waterplan/docs/cwpu2013/Final/vol4/climate_change/05Climate_Action_Team_3_Assesment.pdf. Accessed January 3, 2017.
- CAPCOA. 2016. *California Emissions Estimator Model (CalEEMod) Version 2016.3.1*. Available: <http://www.caleemod.com/>.
- CEC. See California Energy Commission.
- City of Sacramento. 2012 (January). *Sacramento Climate Action Plan*. Available: http://ascentenvironmental.com/files/9714/0537/0505/Sacramento_CAP_Final_Draft.pdf. Accessed April 24, 2017.
- _____. 2015. *Sacramento 2035 General Plan*. Adopted March 3, 2015. Sacramento, CA.
- _____. 2016 (June). *Climate Action Plan for Internal Operations – 2016 Update*. Available: file:///C:/Users/Hanna.Kornfeld/Downloads/CityOfSacramento_1606_ClimateActionPlan_InternalOps_FINAL.pdf. Accessed June 6, 2017.
- CNRA. See California Natural Resources Agency.

DKS. See DKS Associates.

DKS Associates. 2017 (September 9). Transportation Analysis Data for Air Quality and Noise Analysis Panhandle Annexation. Prepared by DKS Associates.

DWR. See California Department of Water Resources.

EPA. See U.S. Environmental Protection Agency.

Forest Trends. 2015. Ahead of the Curve: State of Voluntary Carbon Markets 2015. Available: http://forest-trends.org/releases/uploads/SOVCM2015_FullReport.pdf. Accessed April 11, 2017.

Intergovernmental Panel on Climate Change. 2007. Climate Change 2007: Synthesis Report. Available: https://www.ipcc.ch/publications_and_data/publications_ipcc_fourth_assessment_report_synthesis_report.htm. Accessed April 24, 2017.

_____. 2013. *Carbon and Other Biogeochemical Cycles*. In: *Climate Change 2013: The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*. Available: https://www.ipcc.ch/pdf/assessment-report/ar5/wg1/WGIAR5_SPM_brochure_en.pdf. Accessed January 3, 2017.

_____. 2014. *Climate Change 2014 Synthesis Report Summary for Policymakers*. Geneva, Switzerland. Available: https://www.ipcc.ch/pdf/assessment-report/ar5/syr/AR5_SYR_FINAL_SPM.pdf. Accessed January 3, 2017.

IPCC. See Intergovernmental Panel on Climate Change.

Metro Fire. See Sacramento Metropolitan Fire District.

National Highway Traffic Safety Administration. 2012 (August 28). *Obama Administration Finalizes Historic 54.5 mpg Fuel Efficiency Standards*. Available at <https://www.nhtsa.gov/press-releases/obama-administration-finalizes-historic-545-mpg-fuel-efficiency-standards>. Accessed January 3, 2017.

_____. 2016. CAFE-Fuel Economy web page. Available: <http://www.nhtsa.gov/fuel-economy>. Accessed January 3, 2017.

NHTSA. See National Highway Traffic Safety Administration.

SACOG. See Sacramento Area Council of Governments.

Sacramento Area Council of Governments. 2016 (December). *Take Charge II: Infrastructure Roadmap*. Available: http://www.sacog.org/sites/main/files/file-attachments/master_takecharge_ii_12-21-16.pdf. Accessed June 6, 2017.

Sacramento Metropolitan Air Quality Management District. 2016 (December). CEQA Guide. Available: <http://airquality.org/Residents/CEQA-Land-Use-Planning/CEQA-Guidance-Tools>. Accessed April 17, 2017.

Sacramento Metropolitan Fire District. 2012. Community Wildfire Protection Plan. Mather, CA.

_____. 2016 (October). SMUD Board Policy. Strategic Direction. Resource Planning. Policy Number SD-9. Revised October 20, 2016. Available: <https://www.smud.org/assets/documents/pdf/SD-9.pdf>. Accessed April 17, 2017.

SMAQMD. See Sacramento Metropolitan Air Quality Management District.

SMUD. See Sacramento Municipal Utility District.

Section 5.7, Hazards and Hazardous Materials

California Department of Toxic Substances Control. 2003. *State of California Hazardous Waste and Substances Sites List* website – www.dtsc.ca.gov. Accessed June 2006.

CH2MHILL. May 2006. Whitelock Neighborhood Electric Distribution Project Initial Study and Mitigated Negative Declaration. Sacramento, CA.

Federal Communications Commission website – www.wireless.fcc.gov. Accessed July 24, 2005.

Padre Associates, Inc. March 2004. Phase 1 Environmental Site Assessment Proposed High School Site Located South of Elkhorn Blvd and West of East Levee Road, Sacramento County, California. Sacramento, CA.

Sacramento County. 2008 (November). Sacramento County Evacuation Plan: An annex to the County Emergency Operations Plan. Prepared by James Lee Witt Associates.

Sackheim Consulting. July 2005. Sunrise-Douglas Neighborhood Electrical Distribution Project. Subsequent Initial Study and Mitigation Negative Declaration. Fair Oaks, CA.

Terrell, Amy. 2016 (March). *Review of John Taylor Fertilizers, 841 W. Elkhorn Blvd., Rio Linda, Sacramento County*. Letter Memorandum to Case File and Gerald Djuth of the Central Valley Regional Water Quality Control Board. Rancho Cordova, CA

Wallace Kuhl and Associates. 2016 (November). *Public Notice: Sol Remediation Project at the Former RC Collet Asphalt Batch Plant 900 W. Elkhorn Boulevard, Rio Linda, California*.

Wallace Kuhl and Associates. November 28, 2005c. *Phase I Environmental Site Assessment*. Brothers Property. Sacramento CA.

———. May 26, 2005a. *Phase I Environmental Site Assessment*. Krumenacher Ranch Property. Sacramento CA.

———. April 5, 2005b. *Phase I Environmental Site Assessment*. Laverne Brothers Property. Sacramento CA.

———. October 24, 2003b. *Phase I Environmental Site Assessment*. Cononelos Property. Sacramento CA.

———. September 16, 2003c. *Phase I Environmental Site Assessment*. Richter Property. Sacramento CA.

———. June 17, 2003a. *Phase I Environmental Site Assessment*. BD Property. Sacramento CA.

California Statewide Radon Survey Interim Results, 1998.

Section 5.8, Hydrology and Water Quality

City of Sacramento, October 18, 2000. Storm Drainage Design Standards Procedures Manual.

City of Sacramento, Community Development Department, Environmental Planning Services. 2014 (August). *Draft Master Environmental Impact Report for the City of Sacramento 2035 General Plan Update*. State Clearinghouse Number 2012122006. Prepared by Ascent Environmental, Inc.

City of Sacramento, Chapter 15.88 of the City Code. Grading, Erosion, and Sediment Control.

City of Sacramento, Chapter 15.104 of the City Code. Floodplain Management Regulations.

City of Sacramento, Department of Utilities Website – cityofsacramento.org. Map of City of Sacramento Areas Dependent on Levees.

NRCS. 2016. Web Soil Survey. Soil Survey Area: Sacramento County, California. Survey Area Data: Version 15, September 28, 2016. Available: <http://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm>. Accessed November 29, 2016.

Panhandle Owner's Group. 2016 (September). *Drainage System Modeling Report for the Natomas Panhandle*. Prepared by MacKay & Soms.

RD 1000. 2016. Reclamation District 1000, November 30, 2016 Correspondence Regarding Proposed Panhandle Development Project Levee Setback to Dana Mahaffey with City of Sacramento Community Development Department.

SWRCB. 2012, Final 2012 Integrated Report (CWA Section 303(d) List / 305(b) Report). Available: http://www.waterboards.ca.gov/water_issues/programs/tmdl/2012state_ir_reports/. Accessed November 29, 2016.

Wallace-Kuhl and Associates, 2003. Wallace-Kuhl and Associates Inc. June 17, 2003. Phase 1 Environmental Assessment for BD Properties.

Western Region Climate Center. Date unknown. Sacramento, California: Normals, Means, and Extremes. Available at: <<http://www.wrcc.dri.edu/cgi-bin/cliicl.pl?ca23232>>. Accessed on November 17, 2016.

Section 5.9, Noise

California Department of Transportation. 2013a (September). *Technical Noise Supplement*. California Department of Transportation Division of Environmental Analysis. Sacramento, CA. Prepared by ICF Jones & Stokes.

_____. 2013b (September). *Transportation and Construction Vibration Guidance Manual*. Sacramento, CA: Noise, Division of Environmental Analysis. Sacramento, CA.

Caltrans. See California Department of Transportation.

EPA. See U.S. Environmental Protection Agency.

EPA. 1971. *Noise From Construction Equipment and Operations, Building Equipment, and Home Appliances*. Washington, D.C.

Federal Highway Administration. 2010 (June). *Highway Traffic Noise: Analysis and Abatement Guidance*. U.S. Department of Transportation. Washington D.C.

FHWA. See Federal Highway Administration.

FTA. See Federal Transit Administration.

Governor's Office of Planning and Research. 2003 (October). *State of California General Plan Guidelines*. Sacramento, CA. Available: http://opr.ca.gov/docs/General_Plan_Guidelines_2003.pdf. Accessed July 15, 2015.

OPR. See Governor's Office of Planning and Research.

Pacific Gas and Electric. 2002 (September 30). *Proposed Jefferson-Martin 230 kV Transmission Project Final Environmental Impact Report*. Prepared by Aspen Environmental Group. Available:

http://www.cpuc.ca.gov/environment/info/aspen/jefferson_martin/feir.htm. Accessed: October 14, 2016.

PG&E. See Pacific Gas and Electric.

U.S. Environmental Protection Agency. 1978 (November). *Protective Noise Levels*.

Sacramento, City of. 2016 (November). City of Sacramento Municipal Code. Available: <http://www.qcode.us/codes/sacramento/>. Accessed October 12, 2016.

Sacramento, City of. 2015 (November). *Sacramento 2035 General Plan*. Adopted March 3, 2015. Sacramento, CA. Available: <http://www.cityofsacramento.org/Community-Development/Planning/Long-Range/General-Plan>. Accessed October 11, 2016.

Sacramento 2035 General Plan (City of Sacramento 2015).

Sacramento County. 2011 (November). *Sacramento County 2030 General Plan*. Adopted November 9, 2011. Sacramento, CA. Available: <http://www.per.saccounty.net/PlansandProjectsIn-Progress/Pages/GeneralPlan.aspx>. Accessed November 11, 2016.

Sacramento County. 2016 (July). Sacramento County Code. Available: <http://qcode.us/codes/sacramentocounty/>. Accessed October 18, 2016.

City of Sacramento. 2006 (November). Panhandle Annexation and PUD Draft Environmental Impact Report. Sacramento, CA. Prepared by Pacific Municipal Consultants, Rancho Cordova, CA.

Section 5.10, Public Services

(DOF) California Department of Finance. 2016. *E-5 Population and Housing Estimates for Cities, Counties and the State- January 1, 2011-2016*.

California Department of Education. 2017. Enrollment by Grade for 2015-16 District and School Enrollment by Grade. Available at: <http://data1.cde.ca.gov/dataquest>. Accessed April 5, 2017.

City of Sacramento. 2014. *Draft Master Environmental Impact Report for the City of Sacramento 2035 General Plan Update*. SCH No. 2012122006.

_____. 2015. *Approved City of Sacramento Capital Improvement Program 2015-2020*.

_____. 2015. City of Sacramento Fire Department Annual Report 2015. Available at: <https://www.cityofsacramento.org/-/media/Corporate/Files/Fire/Reports/2015-Annual-Report.pdf?la=en>. Accessed on March 30, 2017.

(SPRD) City of Sacramento Parks and Recreation Department. 2009. *Parks and Recreation Master Plan 2005-2010*.

_____. 2016. Parks. <http://www.cityofsacramento.org/ParksandRec/Parks> (accessed October 3, 2016).

EDP (Education Data Partnership). 2016. *Twin Rivers Unified*. <http://www.ed-data.org/district/Sacramento/Twin-Rivers-Unified> (accessed September 30, 2016).

Grant Joint Union High School District (GJUHSD). 2005. New High School Middle School Environmental Impact Report. Sacramento, CA: Grant Joint Union High School District/Padre Associates Inc.

Kirk, Kelly. Assistant to the Chief of Field Support and Investigation. Sacramento County Sheriff's Department. 2016. Personal Communication. October 6, 2016.

(SPD) Sacramento Police Department. 2015. *2015 Annual Report*.

SCSD (Sacramento County Sheriff's Department). 2016. North Division.
<http://www.sacsheriff.com/Pages/Organization/NorthDivision/ND.aspx> (accessed October 4, 2016).

SPL (Sacramento Public Library). 2007. *Sacramento Public Library Authority Facility Master Plan 2007-2025*.

SPL (Sacramento Public Library). 2016. Sacramento Public Library. <http://www.saclibrary.org/> (accessed October 4, 2016).

TRUSD (Twin Rivers Unified School District). 2016. Twin Rivers Unified School District website.
<http://www.twinriversusd.org/> (accessed September 30, 2016).

----. 2015. *Twin Rivers Long Range Facilities Master Plan*.

Section 5.11, Transportation and Circulation

California Department of Transportation. 2002 (December). *Guide for the Preparation of Traffic Impact Studies*.

_____. 2009 (May). *Interstate 80 and Capital City Freeway Corridor System Management Plan*.

_____. 2009 (May). *State Route 99 & Interstate 5 Corridor System Management Plan*.

_____. 2015. *California Manual on Uniform Traffic Control Devices, 2014 Edition (Including Revision 1)*.

_____. 2016. *Performance Measurement System*. <http://pems.dot.ca.gov/>.

Caltrans. See California Department of Transportation.

City of Sacramento. 1995. *The 2010 Sacramento City/County Bikeway Master Plan*. Adopted by Sacramento County on November 23, 1993, and the City of Sacramento on April 11, 1995.

<https://www.cityofsacramento.org/Public-Works/Transportation/Programs-and-Services/Bikeway-Program/Bicycle-Master-Plan>.

_____. 1996 (February). *Traffic Impact Analysis Guidelines*.

_____. 2006 (September). *Pedestrian Master Plan*. <https://www.cityofsacramento.org/Public-Works/Transportation/Programs-and-Services/Pedestrian-Program>.

_____. 2014 (August). *Draft Master Environmental Impact Report for the City of Sacramento 2035 General Plan Update*.

_____. 2015. *Sacramento 2035 General Plan. Sacramento, California: City of Sacramento Planning Department*. Adopted March 3, 2015. Accessed May 2016.

<http://portal.cityofsacramento.org/Community-Development/Resources/Online-Library/General%20Plan>.

_____. 2016 (August). *City of Sacramento Bicycle Master Plan*. Sacramento, CA. Prepared by Fehr & Peers Associates, Sacramento, CA.

_____. 2016 (September). *City of Sacramento Pedestrian Master Plan*. Sacramento, CA.

Institute of Transportation Engineers. 2012. *Trip Generation Manual*. Ninth Edition.

_____. 2014. *Trip Generation Handbook*. Third Edition.

ITE. See Institute of Transportation Engineers.

SACOG. See Sacramento Area Council of Governments.

Sacramento Area Council of Governments. 2016. *Metropolitan Transportation Plan/Sustainable Communities Strategy 2036*.

Sacramento Regional Transit District. 2014. *Short Range Transit Plan*. Sacramento, CA.

_____. 2016. General Information. Accessed September 23, 2016. <http://www.sacrt.com>.

SRTD. See Sacramento Regional Transit District.

Transportation Research Board. 2000. *Highway Capacity Manual 2000*.

_____. 2010. *Highway Capacity Manual 2010*.

_____. 2014. *Dynamic, Integrated Model System: Sacramento-Area Application, Volume 1: Summary Report*. Washington, D.C. Published by the Strategic Highway Research Program.

TRB. See Transportation Research Board.

Section 5.12, Urban Design and Visional Resources

none

Section 5.13, Utilities

CalRecycle. 2017a. City of Sacramento Diversion/Disposal Rate Detail for 2015.

<http://www.calrecycle.ca.gov/LGCentral/Reports/DiversionProgram/JurisdictionDiversionDetail.aspx?JurisdictionID=418&Year=2015>. Accessed April 3, 2017.

_____. 2017b. Estimated Solid Waste Generation Rates.

<http://www.calrecycle.ca.gov/Search/default.aspx?q=solid+waste+generation+rates>. Accessed April 3, 2017.

City of Sacramento. 2016a. 2015 Urban Water Management Plan, Final-June 2016. Sacramento, CA. Prepared by West Yost Associates, Sacramento, CA.

_____. 2016b. Sacramento Railyards Specific Plan Update, KP Medical Center, MLS Stadium, & Stormwater Outfall Draft Subsequent EIR (State Clearinghouse No. 2006032058). Sacramento, CA. Prepared by ESA, Sacramento, CA.

MackKay & Somps 2016a. Revised Preliminary Water Study Evaluation for the Panhandle Development. Sacramento, CA. Prepared by MackKay & Somps Civil Engineers, Sacramento, CA.

_____. 2016b. Sanitary Sewer Study Level Three for Natomas Panhandle. Sacramento, CA. Prepared by MackKay & Somps Civil Engineers, Sacramento, CA.

Sacramento Regional County Sanitation District. 2014. Sacramento Regional County Sanitation District EchoWater Project Draft EIR (State Clearinghouse No. 2012052017). Sacramento, CA. Prepared by Ascent Environmental, Sacramento, CA.

West Yost Associates 2005. Sacramento River Regional Water Reliability Project, Planning Phase 1. Sacramento, CA. Prepared by West Yost Associates, Sacramento, CA.

Section 5.14, Energy

AFDC. See Alternative Fuels Data Center.

Alternative Fuels Data Center. 2017. Alternative Fueling Station Counts by State. Available: https://www.nass.usda.gov/Research_and_Science/Cropland/SARS1a.php. Accessed April 7, 2017.

ARB. See California Air Resources Board.

Barr, Robert. *China Surpasses U.S. as Top Energy Consumer*. MSNBC. NBCNews.com June 8, 2001. Accessed August 6, 2012.

Bureau of Transportation Statistics. 2015. Table 7-1: Transportation Energy Consumption by Energy Source. Available: https://www.rita.dot.gov/bts/sites/rita.dot.gov.bts/files/publications/state_transportation_statistics/state_transportation_statistics_2014/index.html/chapter7/table7-1. Accessed April 13, 2017.

California Air Resources Board. 2003. *Reducing California's Petroleum Dependence*. Joint Agency Report with California Energy Commission. Available: http://www.energy.ca.gov/reports/2003-08-14_600-03-005.PDF. Accessed April 24, 2017.

_____. 2013. Facts About California's Sustainable Communities Plans. Available: http://www.arb.ca.gov/cc/sb375/sacog_fact_sheet.pdf. Last revised October 2, 2013. Accessed March 2015.

_____. 2014 (May). *First Update to the Climate Change Scoping Plan*. Available: https://www.arb.ca.gov/cc/scopingplan/2013_update/first_update_climate_change_scoping_plan.pdf. Accessed January 3, 2017.

_____. 2016. *California's Advanced Clean Cars Program*. Available: <https://www.arb.ca.gov/msprog/acc/acc.htm> and <http://www.arb.ca.gov/newsrel/newsrelease.php?id=282>. Accessed January 3, 2017.

California Energy Commission. 2016. Renewable Energy – Overview. Available: http://www.energy.ca.gov/renewables/tracking_progress/documents/renewable.pdf. Accessed April 13, 2017.

Caltrans. 2009. 2008 California Motor Vehicle Stock, Travel and Fuel Forecast.

_____. 2008. 2007 California Motor Vehicle Stock, Travel and Fuel Forecast.

California State Board of Equalization. 2016. *Net Taxable Gasoline Gallons*. Available: http://www.boe.ca.gov/sptaxprog/reports/MVF_10_Year_Report.pdf. Accessed April 3, 2017.

City of Sacramento. 2015. *Sacramento 2035 General Plan*. Adopted March 3, 2015. Sacramento, CA.

_____. 2016. *Sacramento Railyards Specific Plan Update, KP Medical Center, MLS Stadium, & Stormwater Outfall Draft Subsequent EIR* (State Clearinghouse No. 2006032058). Sacramento, CA. Prepared by ESA, Sacramento, CA.

EIA. See U.S. Energy Information Administration.

Federal Registrar. 2010. Vol. 75, No. 88, May 7, 2010.

Sacramento Area Council of Governments. 2016 (February). 2016 Metropolitan Transportation Plan/Sustainable Communities Strategy. Sacramento, CA.

U.S. Department of Energy. 2016 (June). *Monthly Energy Review*. Available:
<http://www.eia.gov/totalenergy/data/monthly>. Accessed April 13, 2017.

_____. 2012 (June). *Annual Energy Outlook 2012 with Projections to 2035*. Available:
[https://www.eia.gov/outlooks/aeo/pdf/0383\(2012\).pdf](https://www.eia.gov/outlooks/aeo/pdf/0383(2012).pdf). Accessed April 24, 2017.

U.S. Energy Information Administration. 2016. *Monthly Energy Review June 2016*. Available:
<http://www.eia.gov/totalenergy/data/monthly>. Accessed April 3, 2017.

_____. 2014. *California Energy Highlight. 2014 EIA reports and publications*. Available:
https://www.eia.gov/state/state_one_pager/California.pdf. Accessed April 13, 2017.

Chapter 6, Reorganization

City of Sacramento. 2006 (November). *Panhandle Annexation and Planned Unit Development EIR*. State Clearinghouse No. 2005092043. Sacramento, CA. Prepared by PMC. Rancho Cordova, CA.

_____. 2010 (May). *Panhandle Tax Exchange Agreement*. Prepared by the City of Sacramento. Sacramento, CA.

USDA. 2008. (May). *NRCS Technical Guide Section II, Soils Information*. Prepared by the United States Department of Agriculture, Natural Resources Conservation Service.

Chapter 7, Alternatives

City of Sacramento. 2006 (November). *Panhandle Annexation and Planned Unit Development EIR*. State Clearinghouse No. 2005092043. Sacramento, CA. Prepared by PMC. Rancho Cordova, CA.

Chapter 8, Other CEQA Mandated Sections

City of Sacramento. 2013 (December). *City of Sacramento 2013-2020 Housing Element*. Sacramento, CA.

State of California, Department of Finance, *E-5 Population and Housing Estimates for Cities, Counties and the State – January 1, 2011- 2016*. Sacramento, California, May 2016.