



Draft
Environmental Impact Report
Paso Verde School



Prepared for:



Natomas Unified School District
Facilities and Strategic Planning Department

Prepared by:



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ACRONYMS AND ABBREVIATIONS

°F	Fahrenheit
µg/m ³	micrograms per cubic meter
2007 SIP	2007 State Strategy for California's SIP for federal PM _{2.5} and 8-Hour Ozone Standards
2030 General Plan	Sacramento County General Plan of 2005–2030
AB	Assembly Bill 52
ACHP	Advisory Council on Historic Preservation
ACS	American Community Survey
ADA	American Disabilities Act
ADT	annual daily traffic
ADT	average daily traffic
AE	area's flood zone designation to
AEP	annual exceedance probability
AF	acre feet
AF/year	acre-feet per year
afy	acre-feet per year
AG-80	Agricultural, 80-acre minimum lot size
AIA	Airport Influence Area
Alquist-Priolo Act	Alquist-Priolo Earthquake Fault Zoning Act
ALUC	Airport Land Use Commission
ALUCP	Airport Land Use Compatibility Plan
ANSI	American National Standards Institute
A-OS	Agriculture-Open Space Zone
AQMPs	Air Quality Management Plans
ARB	California Air Resources Board
ASLHA	American Speech-Language-Hearing Association
B.P.	Before Present
BACT	best available control technology for toxics
Basin Plan	Central Valley RWQCB Water Quality Control Plan
bgs	below ground surface
BMP	best management practices
Board	California Air Resources Board
Btu	British thermal units
CAA	federal Clean Air Act
CAAA	federal Clean Air Act Amendments of 1990
CAAQS	California Ambient Air Quality Standards
Cal OSHA	California Occupational Safety and Health Administration
Cal/EPA	California Environmental Protection Agency
Cal/OSHA	California Department of Industrial Relations, Division of Occupational Safety and Health
CalEEMod	California Emissions Estimator Model
CALGreen Code	2016 California Green Building Standards Code

CalRecycle	California Department of Resources Recycling and Recovery
Caltrans	California Department of Transportation
CAP	Climate Action Plan
CBC	California Building Standards Code
CCAA	California Clean Air Act
CCR	California Code of Regulations
CDE	California Department of Education
CDFW	California Department of Fish and Wildlife
CDPH	California Department of Public Health
CEC	California Education Code
Central Valley RWQCB	Central Valley Regional Water Quality Control Board
CEQ	Council on Environmental Quality
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act of 1980
CESA	California Endangered Species Act
CFC	Chlorofluorocarbons
CFC	California Fire Code
CFR	Code of Federal Regulations
cfs/acre	cubic feet per second per acre
CGS	California Geological Survey
CH ₄	methane
CHP	California Highway Patrol
CHRIS	California Historic Resources Information System
City	City of Sacramento
City General Plan	Sacramento 2035 General Plan
CIWMA	California Integrated Waste Management Act
CLUP	Comprehensive Land Use Plan
CNEL	community noise equivalent level
CO	carbon monoxide
CO ₂	carbon dioxide
CO ₂ e	carbon dioxide equivalents
Cortese-Knox Act	Cortese-Knox-Hertzberg Local Government Reorganization Act of 2000
County	Sacramento County
County General Plan	Sacramento County General Plan of 2005–2030
County Sanitation District-1	Sacramento Area Sewer District
CRHR	California Register of Historical Resources
CRPRs	California rare plant ranks
CT	California Toxics Rule
CUPA	Certified Unified Program Agency
CVFPP	Central Valley Flood Protection Plan
CWA	federal Clean Water Act
dB	decibel

dB/DD	decibel per doubling of distance
dBA	A-weighted sound levels
DDT	dichlorodiphenyltrichloroethane
DEIR	draft environmental impact report
Delta	Sacramento–San Joaquin Delta
DOF	Department of Finance
DOT	U.S. Department of Transportation
DPH	California Department of Public Health
DPM	diesel particulate matter
DTSC	California Department of Toxic Substances Control
DUC	Disadvantaged Unincorporated Communities
DWR	California Department of Water Resources
EIR	Environmental Impact Report
EMD	Environmental Management Department
EPA	U.S. Environmental Protection Agency
ESA	federal Endangered Species Act
ESA	environmental site assessment
FAA	Federal Aviation Administration
FEMA	Federal Emergency Management Agency
FESA	federal Endangered Species Act
FHWA	Federal Highway Administration
FHWA RD 77–108	FHWA Highway Traffic Noise Prediction Model
FIRMs	flood insurance rate maps
FMMP	Farmland Mapping and Monitoring Program
FSZ	Farmland Security Zone
FTA	Federal Transit Administration
FWTP	Fairbairn Water Treatment Plant
g	gravitational strength
GHGs	greenhouse gases
GLO	General Land Office
gpm	gallons per minute
GWP	Groundwater Management Plan
H ₂ S	Hydrogen Sulfide
Handbook	Air Quality and Land Use Handbook: A Community Health Perspective
HAPs	hazardous air pollutants
HCFCs	Hydrochlorofluorocarbons
HCM	Highway Capacity Manual
HCP	Habitat Conservation Plan
HFCs	hydrofluorocarbons
High GWP	High Global Warming Potential
HSC	Health and Safety Code
HVAC	heating, ventilation, and air conditioning
I-5	Interstate 5
in/sec	inch per second

INM	Integrated Noise Model
IPaC	Information, Planning, and Conservation System
IPCC	Intergovernmental Panel on Climate Change
ITP	incidental take permit
JPA	Joint Powers Authority
K-8	Kindergarten through 8th grade
kV	kilovolt
LAFCo	Sacramento Local Agency Formation Commission
lb/day	pounds per day
LCFS	Low Carbon Fuel Standard
LDL	Larson Davis Laboratories
L _{dn}	Day-Night Noise Level
LEAs	local enforcement agencies
L _{eq}	Equivalent Noise Level
LHMP	Local Hazard Mitigation Plan
L _{max}	Maximum Noise Level
L _{min}	Minimum Noise Level
L _n	Statistical Descriptor
LOS	level of service
M&I	municipal and industrial
MACT	maximum available control technology for toxics
MBTA	Migratory Bird Treaty Act
MCL	Maximum Contaminant Level
mgd	million gallons per day
MLD	Most Likely Descendant
MOA	memorandum of agreement
mph	miles per hour
MPOs	Metropolitan Planning Organizations
MS4	Municipal Separate Storm Sewer System
MSL	mean sea level
MSRs	municipal service reviews
MT	metric tons
MTCO _{2e}	metric tons of carbon dioxide equivalents
MTIP	Metropolitan Transportation Improvement Program
MTP	Metropolitan Transportation Plan
N ₂ O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NBHCP	Natomas Basin Habitat Conversation Plan
NCIC	Northern California Information Center
NCMWC	Natomas Central Mutual Water Company
NEHRP	National Earthquake Hazards Reduction Program
NEHRPA	National Earthquake Hazards Reduction Program Act
NELs	Numeric Effluent Limitations

NEMDC	Natomas East Main Drainage Canal
NEPA	National Environmental Policy Act
NFIP	National Flood Insurance Program
NHPA	National Historic Preservation Act
NHTSA	National Highway Traffic Safety Administration
NLIP	Natomas Levee Improvement Program
NO	nitric oxide
NO ₂	nitrogen dioxide
NOI	notices of intent
NOP	Notice of Preparation
now NRCS	Soil Conservation Service
NO _x	oxides of nitrogen
NPDES	National Pollutant Discharge Elimination System
NPDES Municipal Permit	National Pollutant Discharge Elimination System Municipal Stormwater Permit
NPL	National Priorities List
NRCS	National Resources Conservation Service
NRHP	National Register of Historic Places
NUSD	Natomas Unified School District
NWP	Nationwide Permit
O ₃	ozone
OES	California Office of Emergency Services
OPR	California Governor's Office of Planning and Research
OSHA	Occupational Safety and Health Administration
PAH	polycyclic aromatic hydrocarbons
Pb	Lead
PCBs	polychlorinated biphenyls
PFCs	perfluorocarbons
PG&E	Pacific Gas and Electric Company
PM ₁₀	particulate matter with aerodynamic diameter less than 10 microns
PM _{2.5}	particulate matter with aerodynamic diameter less than 2.5 microns
Porter-Cologne Act	Porter-Cologne Water Quality Control Act
POU	place of use
ppb	parts per billion
PPV	peak particle velocity
PRC	California Public Resources Code
psi	pounds per square inch
R value	rainfall erosivity value
R-1	Standard Single Family Zone
R-1A	Single Family Alternative Zone
RCRA	Resource Conservation and Recovery Act of 1976
RD	Reclamation District
RD-1000	Reclamation District 1000
Reclamation Board	Central Valley Flood Protection Board
Regional Board	Central Valley Regional Water Quality Control Board

Regional San Reporting Rule	Sacramento Regional County Sanitation District final Greenhouse Gas Reporting Rule
RT	Sacramento Regional Transit District
RTP	Regional Transportation Plan
RUCS	Rural-Urban Connection Strategy
RWQCB	Regional Water Quality Control Board
SACOG	Sacramento Area Council of Governments
Sacramento International Airport LUCP	Sacramento International Airport Land Use Plan
Sacramento MS4 Permit	Sacramento areawide National Pollutant Discharge Elimination System Municipal Separate Storm Sewer Systems permit
SAFCA	Sacramento Area Flood Control Agency
SARA	Superfund Amendments and Reauthorization Act of 1986
SASD	Sacramento Area Sewer District
SB	Senate Bill
Scoping Plan	Climate Change Scoping Plan
SCS	Sustainable Communities Strategy
SCSD	Sacramento County Sheriff's Department
SCWA	Sacramento County Water Agency
SDWA	Safe Drinking Water Act
SF ₆	sulfur hexafluoride
SFD	Sacramento City Fire Department
SFD	Sacramento Fire Department
SFPD	School Facilities Planning Division
SGA	Sacramento Groundwater Authority
SHPO	State Historic Preservation Office
SIP	State Implementation Plan
SLF	Sacred Land File
SMAQMD	Sacramento Metropolitan Air Quality Management District
SMARA	Surface Mining and Reclamation Act
SMF	Sacramento International Airport
SMUD	Sacramento Municipal Utility District
SO ₂	sulfur dioxide
SOI	sphere of influence
SO _x	sulfur oxides
SPL	Sacramento Public Library Authority
SQIP	stormwater quality improvement plan
SR 160	State Route 160
SRCSD	Sacramento Regional County Sanitation District
SRFCP	Sacramento River Flood Control Project
SRWTP	Sacramento River Water Treatment Plant
SSQP	Sacramento Stormwater Quality Partnership
State CEQA Guidelines	California Environmental Quality Act Guidelines
State Reclamation Board	Central Valley Flood Protection Board

State SIP Strategy	State Implementation Plan
STC	sound transmission class
STEAM	science, technology, engineering, arts, and mathematics
Stormwater Quality Design Manual	Stormwater Quality Design Manual for the Sacramento and South Placer Regions
SVAB	Sacramento Valley Air Basin
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TAC	toxic air contaminant
T-BACT	best available control technology for Toxic Air Contaminants
TCP	Traditional Cultural Properties
TCR	Tribal Cultural Resources
TDS	total dissolved solids
TMDL	total maximum daily loads
TNBC	The Natomas Basin Conservancy
tpd	tons per day
TPY	tons per year
TSCA	Toxic Substances Control Act
UBC	Uniform Building Code
Unified Program	Unified Hazardous Waste and Hazardous Materials Management Regulatory Program
UPA	Urban Policy Area
USACE	U.S. Army Corps of Engineers
USB	Urban Services Boundary
USC	U.S. Code
USFWS	U.S. Fish and Wildlife Service
USGS	United States Geologic Survey
UWMP	Urban Water Management Plan
VdB	vibration decibels
VMT	vehicle miles traveled
VOC	volatile organic compounds
WDR	Waste Discharge Requirements
WHO	World Health Organization
WKA	Wallace-Kuhl & Associates
ZEV	zero emission vehicles
µin/sec	microinch per second

EXECUTIVE SUMMARY

ES.1 INTRODUCTION

This Environmental Impact Report (EIR) is prepared in accordance with the California Environmental Quality Act (CEQA) to inform decision makers, representatives of affected and responsible agencies, the public, and other interested parties of the potential environmental effects that may result from implementation of the *Paso Verde K-8 School*, also referred to in this EIR as “the proposed project.” This document is prepared in conformance with CEQA (California Public Resources Code, Section 21000, *et seq.*) and the CEQA Guidelines (California Code of Regulations, Title 14, Section 15000, *et seq.*).

ES.2 PROJECT SUMMARY

Following is a summary of the context and setting of the proposed project, along with a project description.

ES.2.1 PROJECT SETTING

The project site is located on an approximately 34-acre property north of Del Paso Road, directly west of the Westlake residential development, in the Natomas area of unincorporated Sacramento County (Exhibit 2-1). The site is bordered on the north and west by a parcel that is adjacent to the Reclamation District (RD) No. 1000 West Drainage Canal and on the east by a 200-foot wide parcel adjacent to the City limits of the city of Sacramento. The site is located approximately 1 mile east of the Sacramento River. Historically, the site has been used for agricultural crop production, including wheat, barley, and rice. Agricultural lands are to the north, residential development to the east (the Westlake development), fallow agricultural lands on the directly adjacent parcel to the south with residential further to the south (Natomas Central development - across Del Paso Road), and habitat conservation lands managed by The Natomas Basin Conservancy (TNBC) to the west (across the West Drainage Canal).

ES.2.2 PROJECT DESCRIPTION

NUSD is proposing to construct and operate the Paso Verde School on the project site (Exhibit 2-4). Detailed design of the school and site will be completed during 2017 and 2018, construction will occur from April 2019 to July 2020 (or 2021), and the school will open in the fall of 2020 or 2021. The school would have a footprint of approximately 18.3 acres and would accommodate up to approximately 1,000 students in grades K–8. The remaining approximately 15.6 acres would not be developed, but would be maintained with low lying vegetation for fire abatement (9.1 acres would not be developed when the detention area is removed from this calculation). At this time, the site plan anticipates approximately 40 percent landscaped space and 60 percent buildings and hardscape.

The school will have approximately 82,000 square feet of total building space. The school will have 40 classrooms with 2 special education spaces, along with a classroom for music and a classroom for art. There will be offices for the principal and vice principal, space for administrative support, a multi-purpose/gymnasium, a counseling/psychology office and workspace, and a teacher lounge and workspace. The grounds will include an internal quad, hardcourts, and playing fields. The academic program will be focused on science, technology, engineering, arts, and mathematics (STEAM). The school will have approximately 40 teachers and 20 staff,

including a principal, a vice principal, administrative assistants, counselors, psych, speech, librarian, health assistant, custodians, cafeteria, campus monitors.

The school will operate from 8:00 in the morning until 3:00 in the afternoon, with some after-school activities occurring outside these hours. There is no outdoor lighting proposed for the sports fields, but the pedestrian/bicycle/emergency access to the east will be lit for security.

ES.3 PROJECT OBJECTIVES

NUSD and the City of Sacramento have been planning for a new school west of I-5 for many years. The City identified the need for a high school site west of I-5 and described a projected need for a 40-acre high school site in the 2008 Draft North Natomas Community Plan (adopted 2009). However, a specific site was not identified. Concurrent with the City's land use planning efforts, NUSD identified a 41-acre property north of Del Paso Road and west of El Centro Road and investigated its potential purchase.¹ The project was originally envisioned as a high school. However, as noted, the project was put on hold because of concerns regarding levee safety in the Natomas Basin and a decision by the FEMA in 2008 to change the area's flood zone designation to (AE), which corresponds to the 100-year floodplain. This change required extensive flood-proofing of new structures and effectively stopped projects that were not issued building permits before the change took effect. Since then, the SAFCA completed levee improvements along the Sacramento River east levee and Natomas Cross Canal. With SAFCA's initial levee improvements completed and the housing market recovering, development has resumed in the Natomas Basin and within NUSD's service boundary. As a result, NUSD's enrollment has increased, area schools are overcrowded, and NUSD has a pressing need for a new school to serve the area west of I-5. Since the purchase of the property, however, the immediate need is for K-8 capacity, rather than a high school, as originally envisioned.

The primary objectives for the proposed Paso Verde School project are as follows:

- ▶ Meet the educational needs of up to approximately 1,000 NUSD in grades K–8 students.
- ▶ Meet NUSD's geographical needs for additional schools within its service boundary and west of I-5.
- ▶ Slow enrollment growth at nearby overcrowded elementary and middle schools.
- ▶ Provide safe and efficient school site access for students and NUSD staff.

ES.4 PERMITS AND OTHER APPROVALS

The California Environmental Quality Act ("CEQA"), Public Resources Code sections 21000 et seq., requires that lead agencies consider the environmental consequences of projects over which they have discretionary authority prior to taking action on those projects. This Environmental Impact Report (EIR) has been prepared to satisfy CEQA and the CEQA Guidelines, Title 14 of the California Code of Regulations, Chapter 3, Section 15000 et seq.

An EIR is a public informational document designed to provide decision makers and the public with an analysis of the environmental effects of a proposed project, to indicate possible ways to reduce or avoid significant effects, and to describe reasonable alternatives to a project. An EIR must also disclose significant environmental impacts

¹ Since that time, NUSD's needs have changed such that a K-8 rather than a high school is the immediate need.

that cannot be avoided; growth-inducing impacts; effects not found to be significant; and significant cumulative impacts associated with past, present, and reasonably foreseeable probable future projects.

Approval of the proposed project requires discretionary action by the NUSD. Pursuant to CEQA Section 21067, the lead agency means “the public agency which has the principal responsibility for carrying out or approving a project which may have a significant effect upon the environment.” As lead agency, the NUSD has the responsibility for, among other things, preparing and certifying an EIR that analyzes the potential environmental impacts of the proposed project; identifying feasible mitigation measures that could avoid or minimize significant environmental impacts; describing and analyzing feasible alternatives; adopting findings with regard each significant effect; providing a Statement of Overriding Considerations for all environmental impacts that cannot be mitigated to a less-than-significant level; and adopting a Mitigation Monitoring and Reporting Program to ensure that all required mitigation measures are implemented.

Several agencies may serve as responsible and trustee agencies pursuant to Sections 15381 and 15386 of the CEQA Guidelines. These agencies may include, but are not limited to the following.

- ▶ U.S. Army Corps of Engineers – Clean Water Act Section 404 Nationwide Permit
- ▶ U.S. Fish and Wildlife Service – Endangered Species Act Section 7 consultation
- ▶ Regional Water Quality Control Board – Clean Water Act Section 401 Water Quality Certification, Section 402 National Pollutant Discharge Elimination System, Stormwater General Permit
- ▶ California Department of Fish and Wildlife – California Fish and Game Code Section 1600 Streambed Alteration Agreement, California Endangered Species Act compliance
- ▶ California Department of Education/Division of State Architect – final school site and design approval (per California Education Code Section 17213)
- ▶ Caltrans Division of Aeronautics – consultation with CDE on proximity to Sacramento International Airport
- ▶ California Department of Toxic Substances Control – review of preliminary endangerment assessment and Phase I Environmental Site Assessment (ESA) (complete)
- ▶ Sacramento County – grading permit and plan check for off-site infrastructure.
- ▶ SASD and SRCSD – approval of plans for providing sewer service.
- ▶ City of Sacramento – approval to provide water service outside City limits (pursuant to Sacramento City Code Section 13.04.400), review of a water study to the for proposed connections to the City’s water system, encroachment permit for the proposed service connections, easement to the City for access and maintenance of City water meters, approval of the City’s Director of Utilities to provide irrigation water.
- ▶ Airport Land Use Commission (ALUC) for Sacramento, Sutter, Yolo and Yuba counties – finding of consistency with the Sacramento International Airport Land Use Compatibility Plan. This determination was made in June of 2018 (Chew, pers. comm., 2018).

- ▶ Reclamation District 1000 (RD 1000) – approval of use of an existing outfall to RD 1000’s West Drainage Canal.

ES.5 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Table ES-1 summarizes the impacts, mitigation measures, and resulting level of significance after mitigation for the relevant environmental issue areas evaluated for the proposed project. The table is intended to provide an overview. Narrative discussions for the issue areas are included in the corresponding section of this EIR.

Table ES-1. Summary of Project Impacts and Mitigation Measures			
Impacts	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
3.1 AESTHETICS			
3.1-1. Adversely Affect a Scenic Vista or Degrade the Existing Visual Character or Quality of the Project Site	S	No feasible mitigation measures are available.	SU
3.1-2. Light and Glare and Skyglow Effects	PS	<p>3.1-2: Prepare and Implement a Lighting Plan</p> <p>To reduce impacts associated with light and glare, NUSD shall prepare and implement a lighting plan for the proposed project that includes the following elements:</p> <ul style="list-style-type: none"> • Shield or screen lighting fixtures to direct the light downward and prevent light spill on adjacent properties. • Place and shield or screen flood and area lighting needed for security so as not to disturb adjacent residential areas and passing motorists. • Light fixtures that are of unusually high intensity or brightness (e.g., harsh mercury vapor, low-pressure sodium, or fluorescent bulbs) or that blink or flash, shall not be used. LED lighting shall be used where feasible. • Motion-controlled exterior nighttime lighting, rather than lighting that is always on, shall be used where feasible. • Use appropriate building materials (such as low-glare glass, low-glare building glaze or finish, neutral, earth-toned colored paint and roofing materials), shielded or screened lighting, and appropriately shielded lighting for signage, to prevent light and glare from adversely affecting adjacent housing and motorists on nearby roadways. 	LTS
3.2 AGRICULTURAL RESOURCES			
3.2-1. Conflicts with Existing Off-Site Agricultural Operations that Could Result in the Conversion of Farmland to Non-Agricultural Use	LTS	No mitigation measure is required.	LTS
3.3 AIR QUALITY			
3.3-1. Potential Generation of Temporary, Short-Term, Construction-Related Emissions of Criteria Pollutants and Precursors	PS	<p>3.3-1a: Implement the SMAQMD Basic Construction Emission Control Practices</p> <p>NUSD shall require that the construction contractor comply with Basic Construction Emission Control Practices identified by the SMAQMD and listed below or as they may be updated in the future:</p> <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. 	LTS

Table ES-1. Summary of Project Impacts and Mitigation Measures			
Impacts	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		<ul style="list-style-type: none"> • 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 track out mud or dirt onto adjacent public roads at least once a day. Use of dry powered 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) 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 determine to be running in proper condition before it is operated. 	
		<p>3.3-1b: Implement the SMAQMD Enhanced Exhaust Control Practices</p> <p>NUSD shall require that the construction contractor adheres to the following SMAQMD Enhanced Exhaust Control Practices as listed below, or as they may be updated in the future, which are shown to be effective in reducing NO_x emissions:</p> <ul style="list-style-type: none"> • Submit to SMAQMD a comprehensive inventory of all off-road construction equipment, equal to or greater than 50 horsepower, that would be used an aggregate of 40 or more hours during any portion of the construction project. The inventory shall include the horsepower rating, engine production year, and projected hours of use for each piece of 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. • Provide a plan, for approval by SMAQMD, demonstrating that the heavy-duty (50 horsepower [hp] or more) off-road vehicles to be used in the construction project, including owned, leased, and subcontractor vehicles, will achieve a project wide fleet-average of 20% NO_x reduction and 45% particulate reduction compared to the most current California Air Resources Board (ARB) fleet average that exists at the time of construction. SMAQMD's Construction Mitigation Calculator can be used to identify an equipment fleet that achieves this reduction. 	LTS

Table ES-1. Summary of Project Impacts and Mitigation Measures			
Impacts	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		<ul style="list-style-type: none"> • 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. • At least 4 business days prior to the use of heavy-duty off-road equipment, the project representative shall provide SMAQMD with the anticipated construction timeline including start date, and name and phone number of the project manager and on-site foreman. • Ensure that emissions from all off-road diesel powered equipment 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 shall 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, and a monthly summary of the visual survey results shall be submitted throughout the duration of the project, except that the monthly summary 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. • SMAQMD staff and/or other officials may conduct periodic site inspections to determine compliance. 	
		<p>3.3-1c: Use Current Phase Equipment for all Construction Off-Road Vehicles and Equipment</p> <p>NUSD shall require that the construction contractor use current phase off-road construction vehicles and equipment (currently Tier 4) for construction-related activities.</p>	LTS
3.3-2. Generation of Long-Term Operational Emissions of Criteria Pollutants and Precursors	LTS	No mitigation measure is required.	LTS
3.3-3. Generation of Local Mobile-Source CO Emissions	LTS	No mitigation measure is required.	LTS
3.3-4. Exposure of Sensitive Receptors to Toxic Air Contaminant Emissions	LTS	No mitigation measure is required.	LTS
3.3-5. Exposure of Sensitive Receptors to Objectionable Odors	LTS	No mitigation measure is required.	LTS

Table ES-1. Summary of Project Impacts and Mitigation Measures			
Impacts	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
3.4 BIOLOGICAL RESOURCES			
3.4-1. Impacts on Special-Status Species	PS	<p>3.4-1a: Implement Avoidance and Minimization Measures to Protect Giant Garter Snake</p> <p>NUSD will implement the following applicable standard avoidance and minimization measures contained in the Programmatic Consultation with the U.S. Army Corps of Engineers² and adapted for this project, listed below.</p> <p><i>Programmatic Avoidance and Minimization Measures</i></p> <ul style="list-style-type: none"> • Confine movement of heavy equipment to existing roadways to minimize habitat disturbance. • Construction activity within habitat should be conducted between May 1 and October 1. This is the active period for giant garter snakes and direct mortality is lessened, because snakes are expected to actively move and avoid danger. • 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 area as Environmentally Sensitive Areas. These areas shall be avoided by all construction personnel. • Construction personnel will receive worker environmental awareness training that will instruct workers to recognize giant garter snakes and their habitat, and procedures to follow if a snake is observed on or near the site. • 24-hours prior to construction activities, the project biologist will survey areas of suitable habitat within the project site for giant garter snakes. Survey of the project area will be repeated if there is a lapse in construction activity of two weeks or greater. If a snake is encountered during construction, construction will cease until appropriate corrective measures have been completed or it has been determined that the snake will not be harmed. Any sightings will be reported to the USFWS immediately at (916) 414-6600. • After completion of construction activities within suitable habitat, remove any temporary fill and construction debris that could be used as over-wintering sites and, wherever feasible, restore disturbed areas to pre-project conditions. If temporary fill or construction debris is to be removed between October 1 and April 30, it shall be inspected by a qualified biologist prior to removal to assure that giant garter snake are not using it as hibernaculae. 	LTS

² Programmatic Consultation with the U.S Army Corps of Engineers. 404 Permitted Projects with Relatively Small Effects on the Giant Garter Snake within Butte, Colusa, Glenn, Fresno, Merced, Sacramento, San Joaquin, Solano, Stanislaus, Sutter and Yolo Counties, California. Appendix C Standard Avoidance and Minimization Measures During Construction Activities in Giant Garter Snake (*Thamnophis ssp.*) Habitat.

Table ES-1. Summary of Project Impacts and Mitigation Measures			
Impacts	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		<p><i>Project-Specific Avoidance and Minimization Measures</i></p> <p>NUSD will also implement the following additional avoidance and minimization measures:</p> <ul style="list-style-type: none"> Once the biologist determines there are no giant garter snakes present in the construction area, NUSD will install temporary exclusion fencing around work areas that are within 200 feet of aquatic habitat where suitable upland habitat is present, to prevent giant garter snakes from entering the work area during construction. The fencing will be maintained for the duration of the construction activities. If exclusion fencing is not installed, a qualified biological monitor will be present during all activities in suitable habitat within 200 feet of giant garter snake aquatic habitat. <p><i>Consistency with the NBHCP</i></p> <p>The project's avoidance and minimization measures are consistent with the measures outlined in the NBHCP for work in areas adjacent to suitable giant garter snake habitat. In addition, NUSD will implement the following avoidance and minimization measure from the NBHCP:</p> <ul style="list-style-type: none"> No plastic, monofilament, jute, or similar erosion control matting that could entangle snakes will be placed when working within 200 feet of snake aquatic habitat. Acceptable erosion control materials include coconut coir matting, tackified hydro-seeding compounds, or other material approved by CDFW and USFWS. 	
		<p>3.4-1b: Provide Compensatory Swainson's Hawk Foraging Habitat and Conduct Biological Surveys to Avoid Active Nests during Construction</p> <p>NUSD will implement the following Swainson's hawk mitigation measures.</p> <p>Nesting Habitat: NUSD will not initiate intensive construction activity, such as heavy equipment operation, within ¼ mile of an active Swainson's hawk nest between March 1 and September 15 (the nesting season). The project biologist will conduct nesting surveys of known nests or appropriate nesting habitat adjacent to the project site. If surveys show there are no active nests within the distances specified above, then no additional mitigation will be required. If active nests are found and disturbances such as construction will occur during the nesting season, a no-disturbance buffer will be established around the active nest. No project activity will commence within the buffer areas until a qualified biologist has determined, in coordination with CDFW, the young have fledged, the nest is no longer active, or reducing the buffer would not result in nest abandonment. Per the NBHCP and CDFW guidelines, the recommended no-disturbance buffer for Swainson's hawk nests is ¼-mile in situations where the nest is within ¼ mile of existing urban development, and ½ mile if the nest is over ¼-mile from existing urban development, but the size of the buffer may be decreased if a qualified biologist, in consultation with CDFW, determines that such an adjustment would not be likely to adversely affect the nest.</p>	LTS

Table ES-1. Summary of Project Impacts and Mitigation Measures			
Impacts	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		<p>Active Swainson’s hawk nests within ¼ mile will be monitored by a qualified biologist during construction activities if the activity has potential to cause nest abandonment of fledging. 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 no-disturbance buffer will be increased until the agitated behavior ceases. The exclusionary buffer will remain in place until the chicks have fledged or as otherwise determined appropriate by a qualified biologist.</p> <p>Foraging Habitat: Under CDFW guidelines, the following ratios apply for projects within 1 mile of an active nest tree:</p> <ul style="list-style-type: none"> • one acre of habitat management land on agricultural lands or other suitable habitats for each acre of development (1:1 ratio) with at least 10 percent met by fee title acquisition or a conservation easement allowing for the active management of the habitat, with the remaining 90 percent protected by a conservation easement. <p>Because of the high value of foraging habitat within the Natomas Basin to the recovery and survival of the Central Valley population of Swainson’s hawk, the likely presence of active nests within 1 mile of the project site, and the County ordinance requirement to mitigate loss of AG-80 lands at a minimum 1:1 ratio, NUSD will replace each acre of foraging habitat lost (18 acres) as a result of implementing the project by creating 1 acre of higher quality alfalfa foraging habitat on lands that are currently used for lower foraging quality crops such as oat, wheat, corn, cotton, safflower, and sunflower, or unsuitable crops such as orchards and vineyards. Rice fields will not be used for conversion to alfalfa because that would potentially result in an adverse effect on giant garter snake. The mitigation habitat will be located within 1 mile of suitable nesting habitat and within 2 miles of an active nest. This mitigation would result in greater compensation than under the NBHCP, which only requires mitigation at a ratio of 0.5:1. NUSD’s proposed mitigation also goes beyond what is required under the County ordinance and CDFW guidelines, which require only that applicants replace lost foraging habitat with similar habitat and not that they provide higher quality foraging habitat. The replacement habitat will be managed for Swainson’s hawk foraging values in perpetuity. NUSD will provide for the long-term management of the habitat management lands by funding a management endowment (the interest on which will be used for managing the lands) at the applicable rate. The funds will be provided to CDFW in a manner consistent with CDFW policy for land acquisition.</p> <p>Alternatively, NUSD may participate in a fee program, such as that operated by TNBC, that is demonstrated to meet applicable minimum requirements for foraging habitat mitigation, as outlined above.</p>	

Table ES-1. Summary of Project Impacts and Mitigation Measures			
Impacts	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		<p>Alternatively, NUSD can participate in the County’s program, which requires mitigation of Swainson’s hawk foraging habitat by: (1) providing replacement land or paying a fee if the impact is less than 40 acres; or (2) only by providing replacement land if impacts are 40 acres or more. The first option would apply to the proposed project since it would disturb less than 40 acres of land area. The applicable impact fee and administrative fee would apply.</p>	
		<p>3.4-1c: Provide Burrowing Owl Mitigation per CDFW Protocol</p> <p>NUSD will implement the following steps as required by the CDFW protocol (CDFW 2012):</p> <ul style="list-style-type: none"> • To avoid minimize, and mitigate potential impacts on burrowing owl, NUSD will retain a qualified biologist to conduct focused breeding and nonbreeding season surveys for burrowing owls in areas of suitable habitat on and within 500 feet of the project site. Surveys will be conducted in accordance with Appendix D of CDFW’s Staff Report on Burrowing Owl Mitigation (2012). • If no occupied burrows are found, a letter report documenting the survey methods and results will be submitted to NUSD and CDFW and no further mitigation will be required. • If an active burrow is found during the nonbreeding season (September 1 through January 31) and cannot be avoided, owls will be relocated to suitable habitat outside of the project area using passive or active methodologies developed in consultation with CDFW. This may include active relocation to TNBC habitat reserve areas if approved by CDFW and the TNBC reserve managers. No burrowing owls will be excluded from occupied burrows until a burrowing owl exclusion and relocation plan is developed by NUSD and approved by CDFW. • If an active burrow is found during the breeding season (February 1 through August 31), occupied burrows will not be disturbed and will be provided with a 150- to 500-foot protective buffer unless a qualified biologist verifies through noninvasive means that either: (1) the birds have not begun egg laying, or (2) juveniles from the occupied burrows are foraging independently and are capable of independent survival. The size of the buffer will depend on the time of year and level of disturbance, as outlined in the CDFW Staff Report (2012, pg 9). Once the fledglings are capable of independent survival, the owls will be relocated to suitable habitat outside the project area in accordance with a burrowing owl exclusion and relocation plan developed in consultation with CDFW and the burrow will be destroyed to prevent owls from reoccupying it. No burrowing owls will be excluded from occupied burrows until a burrowing owl exclusion and relocation plan is approved by CDFW. Following owl exclusion and burrow demolition, the site will be monitored by a qualified biologist to ensure burrowing owls do not recolonize the site prior to construction. 	PS

Table ES-1. Summary of Project Impacts and Mitigation Measures			
Impacts	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		<ul style="list-style-type: none"> • If active burrowing owl nests are found on the project site and these nest sites are lost as a result of implementing the project, NUSD will mitigate the loss through preservation of other known nest sites in Sacramento County, at a minimum ratio of 1:1. NUSD will develop a mitigation and monitoring plan for the compensatory mitigation areas. • The mitigation and monitoring plan will include detailed information on the habitats present within the preservation areas, the long-term management and monitoring of these habitats, legal protection for the preservation areas (e.g., conservation easement, declaration of restrictions), and funding mechanism information (e.g., endowment). All burrowing owl mitigation lands will be preserved in perpetuity and incompatible land uses will be prohibited in habitat conservation areas. • NUSD will transfer said burrowing owl mitigation land, through either conservation easement or fee title, to a third-party, nonprofit conservation organization (Conservation Operator) with CDFW named as a third-party beneficiary. 	
		<p>3.4-1d: Provide Mitigation for Other Special-Status and Nesting Birds</p> <p>NUSD will implement the following measures to protect other special-status and nesting birds during project construction:</p> <ul style="list-style-type: none"> • NUSD’s project biologist will conduct a preconstruction survey to identify active raptor nests on and within one-half mile of proposed construction activity no more than 14 days and no less than 7 days before any construction activity begins during the breeding season - between February 15 and August 31. The biologist will also conduct a preconstruction survey for active nests on and within one-quarter mile of the project site. If no active nests are found, then no further mitigation will be required. • If active nests are found, impacts will be avoided by establishing appropriate buffers. No project activity will commence within the buffer area until the biologist confirms that the nest is no longer active. If the biologist determines that construction activities threaten to destroy an occupied nest or significantly disrupt breeding or rearing of young, a no-construction buffer zone (e.g., 50-foot diameter for passerines and 300-foot diameter for raptors) would be designated by the biologist; construction may only resume within this zone after it has been determined that breeding has ceased and any young birds have fledged. 	LTS
		<p>3.4-1e: Avoid Take of Western Pond Turtles</p> <p>NUSD will implement the following measures to avoid the potential loss of western pond turtles:</p> <ul style="list-style-type: none"> • A qualified biologist will conduct a preconstruction survey for western pond turtle no more than 48 hours prior to work within 200 feet of suitable aquatic habitat. 	LTS

Table ES-1. Summary of Project Impacts and Mitigation Measures			
Impacts	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		<ul style="list-style-type: none"> • If pond turtles are observed, a qualified biologist, with approval from CDFW, will relocate pond turtles to the nearest area with suitable aquatic habitat that will not be disturbed by project-related construction activities. If nesting activity is observed, an appropriate exclusion buffer will be determined in consultation with CDFW. • A qualified biological monitor will be present during ground disturbance activities within 200 feet of aquatic western pond turtle habitat. 	
3.4-2. Impacts on Essential Fish Habitat	LTS	No mitigation measure is required.	LTS
3.4-3. Impacts on Federally Protected Waters of the United States	LTS	No mitigation measure is required.	LTS
3.4-4. Conflict with Sacramento County Code for Mitigating Impacts on Swainson’s hawk Foraging Habitat	NI	No mitigation measure is required.	NI
3.4-5. Conflict with the Natomas Basin Habitat Conservation Plan	LTS	No mitigation measure is required.	LTS
3.5 CULTURAL RESOURCES			
3.5-1. Possible Discovery of Prehistoric or Historic Cultural Resources, Including TCRs	PS	3.5-1a: Provide Construction Crews with Information Regarding the Potential to Encounter Previously Unrecorded Archaeological Resources Before the start of any earthmoving activities, NUSD will retain a qualified archaeologist to inform construction personnel involved with earthmoving activities regarding the types of cultural resources or features that could be encountered during construction. These include, but are not limited to flaked stone tools or ground stone milling tools. Historic-era artifacts may include, but are not limited to ceramic, glass, or metal objects, nails, and miscellaneous hardware. The archaeologist will provide information regarding the regulatory protections afforded to archaeological resources and procedures to follow if archaeological resources are exposed during excavation, including notifying NUSD representatives.	LTS
		3.5-1b: Conduct Archaeological Monitoring During Initial Excavation During the initial excavation for the proposed wastewater infrastructure in the primary access roadway, a qualified geoarchaeologist will assess the potential for the presence of buried archaeological sites, including TCRs and human remains. Native American Tribal representatives will be provided with a schedule for the excavations for the wastewater infrastructure and NUSD will extend an invitation for tribal monitors to observe the work.	LTS

Table ES-1. Summary of Project Impacts and Mitigation Measures			
Impacts	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		<p>3.5-1c: Stop Work if Prehistoric or Historic Subsurface Cultural Resources are Discovered, Consult a Qualified Archaeologist to Assess the Significance of the Find, and Conduct Resource Documentation and Data Recovery as Needed</p> <p>If unrecorded cultural resources (e.g., midden, unusual amounts of shell, animal bone, bottle glass, ceramics, structure/building remains, etc.) are encountered during construction, all ground-disturbing activities will be restricted within a 100-foot radius of the find or a distance determined by a qualified professional archaeologist to be appropriate based on the potential for disturbance of additional cultural resource materials. A qualified archaeologist will identify the materials, determine their potential to meet the definition of a significant cultural resource in Section 15064.5 or a TCR under AB 52, and formulate appropriate measures for their treatment. Potential treatment methods for significant and potentially significant resources may include, but would not be limited to, no action (i.e., resources determined not to be significant), avoidance of the resource through changes in construction methods or project design, or testing and data recovery, in accordance with applicable State requirements and/or in consultation with affiliated Native American Tribal representative/s.</p>	LTS
		<p>3.5-1d: Prepare and Submit an Archaeological Testing Plan</p> <p>If cultural resources are discovered, the qualified archaeologist will prepare and submit to NUSD an archaeological testing plan. The testing plan will identify the types of archaeological resources that could be affected by the development, the testing method to be used, and the locations recommended for testing. The purpose of the testing plan will be to determine the potential for the presence or absence of archaeological resources in subsurface contexts; identify any archaeological resources found; and evaluate their significance. The archaeologist will submit a report outlining any additional required measures, including additional archaeological testing and/or data recovery.</p>	LTS
		<p>3.5-1e: Implement Data Recovery Measures, Where Necessary, for Important Archaeological Resources</p> <p>Data recovery will be implemented if an adverse impact on a unique or significant archaeological resource cannot be avoided. NUSD will prepare an archaeological data recovery plan that identifies what scientific/historical research questions are applicable to the resource, what data classes the resource is expected to possess, and how the data would address the applicable research questions. Data recovery may include cataloging, artifact analysis, development of interpretive material, and curation. Data recovery will be limited to areas that could be adversely affected by construction. If the archaeological resource is associated with the Native American inhabitation, NUSD will consult with the relevant tribes and invite a Native American who is traditionally and culturally affiliated with the geographic area to observe the removal of native material.</p>	LTS

Table ES-1. Summary of Project Impacts and Mitigation Measures			
Impacts	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		<p>3.5-1f: Conduct Construction Monitoring</p> <p>If cultural resources are discovered, NUSD will determine the need for archaeological monitoring. If monitoring is needed, NUSD will provide a cultural resource monitor. The monitor will log construction activities, observations, types of equipment used, and any new archeological discovery (including the cultural material observed and its location). Photographs will be taken, as necessary, to supplement the documentation. The logs, including photographs, will be signed and dated and submitted to NUSD in a monitoring report. NUSD will determine which activities should be monitored and when monitoring will cease.</p> <p>If an intact archaeological deposit is encountered, the monitor will temporarily halt or redirect ground-disturbing activities and equipment until the resource is evaluated. The archaeologist will immediately notify NUSD, assess the significance of the encountered archaeological deposit, and present the findings to NUSD with recommendations regarding resource avoidance and/or mitigation.</p>	LTS
		<p>3.5-1g: Prepare and Submit an Archaeological Resources Report</p> <p>The archaeological consultant will submit an archaeological resources report to NUSD that evaluates the historical significance of any discovered archaeological resource and describes the archaeological and historical research methods employed in the archaeological testing/monitoring/data recovery program(s) undertaken.</p>	LTS
3.5-2. Potential Disturbance of Previously Undiscovered Human Remains during Construction	PS	<p>3.5-2: Stop Work If Human Skeletal Remains Are Uncovered, and Follow the Procedures Set Forth in CEQA Guidelines Section 15064.5(e)(1)</p> <p>In the event of the accidental discovery or recognition of any human remains, NUSD will take the following steps:</p> <p>(1) No further excavation or disturbance of the project site or any nearby area reasonably suspected to overlie adjacent human remains will occur until:</p> <p>(A) the coroner of Sacramento County has been contacted to determine that no investigation of the cause of death is required, and</p> <p>(B) if the coroner determines the remains to be Native American:</p> <p style="margin-left: 40px;">(1) the coroner shall contact the Native American Heritage Commission within 24 hours (Health and Safety Code Section 7050[c]);</p> <p style="margin-left: 40px;">(2) the NAHC shall identify the person or persons it believes to be the most likely descendant from the deceased Native American pursuant to the provisions of Public Resources Code Section 5097.98; and</p>	LTS

Table ES-1. Summary of Project Impacts and Mitigation Measures			
Impacts	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		(3) the most likely descendant may make recommendations to the NUSD/contractors, for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods, as provided in Public Resources Code Section 5097.98; or (2) Where the following conditions occur, NUSD/contractors shall reburial the Native American remains and associated grave goods with appropriate dignity on the property in a location not subject to further subsurface disturbance: (A) the NAHC is unable to identify a most likely descendant or the most likely descendant fails to make a recommendation within 24 hours after being notified by the commission; (B) the most likely descendant identified fails to make a recommendation; or (C) NUSD rejects the recommendation of the most likely descendant, and mediation by the NAHC fails to provide measures acceptable to NUSD.	
3.6 GEOLOGY, SOILS, MINERALS, AND PALEONTOLOGICAL RESOURCES			
3.6-1. Potential Risks to People and Structures Caused by Strong Seismic Ground Shaking and Liquefaction	LTS	No mitigation measure is required.	LTS
3.6-2. Potential Temporary and Short-term Localized Soil Erosion During Construction	PS	3.6-2: Implement Mitigation Measure 3.9-1a (Acquire Appropriate Regulatory Permits and Prepare and Implement a SWPPP and BMPs)	LTS
3.6-3. Potential Damage to Structures, Roads, Utilities, and Infrastructure from Construction on Expansive Soils	LTS	No mitigation measure is required.	LTS
3.7 GREENHOUSE GAS EMISSIONS			
3.7-1. Generation of Greenhouse Gas Emissions	LTCC	No mitigation measure is required.	LTCC
3.7-2. Consistency with Applicable Plans, Policies, and/or Regulations Adopted for the Purpose of Reducing GHG Emissions	LTCC	No mitigation measure is required.	LTCC

Table ES-1. Summary of Project Impacts and Mitigation Measures			
Impacts	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
3.8 HAZARDS AND HAZARDOUS MATERIALS			
3.8-1 Routine Transport, Use, or Disposal of Hazardous Materials	LTS	No mitigation measure is required.	LTS
3.8-2. Potential Human Health Hazards from Exposure to Existing On-Site Hazardous Material	PS	<p>3.8-2: Stop Work if Unknown Hazards and Hazardous Materials are Encountered during Construction, Retain a Licensed Professional to Investigate Unknown Hazards and Hazardous Materials, and Implement Required Measures, as Necessary</p> <p>If, during site preparation and construction activities, evidence of hazardous materials contamination is observed or suspected (e.g., stained or odorous soil or groundwater), construction activities shall cease immediately in the area of the find. If such contamination is observed or suspected, the contractor shall retain a qualified hazardous materials specialist to assess the site and collect and analyze soil and/or water samples, as necessary. If contaminants are identified in the samples, the contractor shall notify and consult with the appropriate federal, state, and/or local agencies. Measures to remediate contamination and protect worker health and the environment shall be implemented in accordance with federal, State, and local regulations before construction activities may resume at the site where contamination is encountered.</p>	LTS
3.8-3. Create Safety Hazards for People Near the Sacramento International Airport	LTS	No mitigation measure is required.	LTS
3.8-4. Exposure of People and Structures to Wildland Fires	PS	<p>3.8-4: Demonstrate Compliance with the California Fire Code, California Building Code, and Sacramento Fire Department Requirements and Standards</p> <p>Prior to the approval of project designs and issuance of grading permits, the NUSD shall demonstrate to compliance with California Fire Code requirements and Sacramento Fire Department standards, including those related to defensible space; fuel breaks; access road length, dimensions, and finished surfaces for firefighting equipment; fire hydrant placement; and fire flow availability. The NUSD shall further demonstrate that ignition-resistant building materials have been incorporated into project designs consistent with the California Building Code. The NUSD shall keep grasses and weeds on the undeveloped portion of the property mowed to a height of 4 inches or less.</p>	LTS

Table ES-1. Summary of Project Impacts and Mitigation Measures			
Impacts	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
3.9 HYDROLOGY AND WATER QUALITY			
3.9-1. Violate any Water Quality Standards or Waste Discharge Requirements	PS	<p>3.9-1a: Acquire Appropriate Regulatory Permits and Prepare and Implement a SWPPP and BMPs</p> <p>Prior to the issuance of grading permits, NUSD shall obtain coverage under the SWRCB’s NPDES stormwater permit for general construction activity (Order 2009-0009-DWQ as amended by Order No. 2012-0006-DWQ), including preparation and submittal of a project-specific SWPPP at the time the NOI is filed with the CVRWQCB. The SWPPP and other appropriate plans shall identify and specify:</p> <ul style="list-style-type: none"> • the use of an effective combination of robust erosion and sediment control BMPs and construction techniques to reduce the potential for runoff and the release, mobilization, and exposure of pollutants. These may include but would not be limited to temporary erosion control and soil stabilization measures, sedimentation ponds, inlet protection, perforated riser pipes, check dams, and silt fences; • the implementation of non-stormwater management controls, permanent post-construction BMPs, and inspection and maintenance responsibilities; • the pollutants that are likely to be used during construction that could be present in stormwater drainage and nonstormwater discharges, including fuels, lubricants, and other types of materials used for equipment operation; • spill prevention and contingency measures, including measures to prevent or clean up spills of hazardous waste and of hazardous materials used for equipment operation, and emergency procedures for responding to spills; • personnel training requirements and procedures that shall be used to ensure that workers are aware of permit requirements and proper installation methods for BMPs specified in the SWPPP; and • the appropriate personnel responsible for supervisory duties related to implementation of the SWPPP. <p>Where applicable, BMPs identified in the SWPPP shall be in place throughout all site work and construction/demolition activities and shall be used in all subsequent site development activities. BMPs may include, but are not limited to, such measures as those listed below.</p> <ul style="list-style-type: none"> • Implementing temporary erosion and sediment control measures in disturbed areas to minimize discharge of sediment into nearby drainages as required by the CVRWQCB. These measures may include silt fences, staked straw bales or wattles, sediment/silt basins and traps, geofabric, sandbag dikes, and temporary vegetation. 	LTS

Table ES-1. Summary of Project Impacts and Mitigation Measures			
Impacts	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		<ul style="list-style-type: none"> • Establishing permanent vegetative cover to reduce erosion in areas disturbed by construction by slowing runoff velocities, trapping sediment, and enhancing filtration and transpiration. • Using drainage swales, ditches, and earth dikes to control erosion and runoff by conveying surface runoff down sloping land, intercepting and diverting runoff to a watercourse or channel, preventing sheet flow over sloped surfaces, preventing runoff accumulation at the base of a grade, and avoiding flood damage along roadways and facility infrastructure. • A copy of the approved SWPPP shall be maintained and available at all times on the construction site. 	
		<p>3.9-1b: Develop and Implement a Dewatering Plan and Groundwater Quality BMPs in the SWPPP</p> <p>The SWPPP developed and implemented as part of Mitigation Measure 3.9-1a shall specifically include a dewatering plan and measures to prevent/minimize sediment and contaminant releases into groundwater during excavations and methods to clean up releases if they do occur. If necessary, dewatering shall be performed in a manner that allows discharge to an infiltration basin approved by CVRWQCB. Measures to prevent/minimize sediment and contaminant releases into groundwater during excavations and methods to clean up releases may include using temporary berms or dikes to isolate construction activities; using vacuum trucks to capture contaminant releases; and maintaining absorbent pads and other containment and cleanup materials on-site to allow an immediate response to contaminant releases if they occur.</p>	LTS
3.9-2. Increased Risk of Flooding and Hydromodification from Increased Stormwater Runoff	PS	<p>3.9-2: Coordinate with RD 1000 and CVRWQCB, Prepare and Submit a Drainage Plan, and Implement Requirements Contained in the Plan</p> <p>NUSD shall coordinate with RD 1000 to design a drainage system that limits peak discharges into the RD 1000 drainage system per RD 1000 requirements. In addition, before the approval of grading plans and building permits, NUSD shall prepare a final drainage plan that incorporates CVRWQCB requirements to appropriately convey off-site upstream runoff through the project site, and demonstrate that project-related on-site runoff would be appropriately contained in detention basins and managed with through other improvements (e.g., source controls) to reduce flooding and hydromodification impacts. The drainage plan shall include, but is not limited to, the following items:</p> <ul style="list-style-type: none"> • an accurate calculation of pre-project and post-project runoff scenarios, obtained using appropriate engineering methods (which may consist of those contained in the <i>Sacramento City/County Drainage Manual Volume 2: Hydrology Standards</i>), that accurately evaluates potential changes to runoff, including increased surface runoff; 	LTS

Table ES-1. Summary of Project Impacts and Mitigation Measures			
Impacts	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		<ul style="list-style-type: none"> • runoff calculations for the 10-year and 100-year (0.01 AEP) storm events (and other, smaller storm events as required) shall be performed and the trunk drainage pipeline sizes confirmed based on alignments and detention facility locations finalized in the design phase; • a description of the proposed maintenance program for the on-site drainage system; • project-specific standards for installing drainage systems; • a description of on-site features designed to treat stormwater and maintain stormwater quality before it is discharged from the project site (e.g., vegetated swales, infiltration trenches, and constructed wetland filter strips); and • stormwater management BMPs that are designed to limit hydromodification and maintain current stream geomorphology. These may include, but are not limited to, the following: <ul style="list-style-type: none"> – use of LID techniques to limit increases in stormwater runoff at the point of origination (these may include, but are not limited to: surface swales; replacement of conventional impervious surfaces with pervious surfaces [e.g., porous pavement]; impervious surfaces disconnection; and trees planted to intercept stormwater); – the use of detention basin inlet and outlet water control structures that are designed to reduce the rate of stormwater discharge; – enlarged detention basins to minimize flow changes and changes to flow duration characteristics; – minimize slope differences between any stormwater or detention facility outfall channel with the existing receiving channel gradient to reduce flow velocity; and – minimize to the extent possible detention basin sizes, embankments, culverts, and other encroachments into the channel and floodplain corridor, and utilize open bottom box culverts to allow sediment passage on smaller drainage courses. 	
3.9.3. Long-Term Operational Water Quality and Hydrology Effects from Urban Runoff	PS	<p>3.9-3: Develop and Implement a Best Management Practice and Water Quality Maintenance Plan</p> <p>Before final approval of improvement plans, a detailed BMP and water quality maintenance plan shall be prepared by a qualified engineer retained by NUSD. The plan shall finalize the water quality improvements and further detail the structural and nonstructural BMPs and LID features proposed for the project. The plan shall include the elements described below.</p> <ul style="list-style-type: none"> • A quantitative hydrologic and water quality analysis of proposed conditions incorporating the proposed drainage design features, which shall include final water quality basin sizing and design configuration. 	LTS

Table ES-1. Summary of Project Impacts and Mitigation Measures			
Impacts	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		<ul style="list-style-type: none"> • Pre-development and post-development calculations demonstrating that the proposed water quality BMPs and LID features meet or exceed requirements established by RD 1000 and Sacramento County and including details regarding the size, geometry, and functional timing of storage and release. Pollutants are removed from stormwater in detention basins through gravitational settling and biological processes depending on the type of basin. • Source control programs to control water quality pollutants on the project site, which may include but are not limited to recycling, street sweeping, storm drain cleaning, hazardous waste collection, waste minimization, prevention of spills and illegal dumping, and effective management of trash collection areas. • A pond management component for the proposed basin that shall include management and maintenance requirements for the design features and BMPs. • LID control measures shall be integrated into the BMP and water quality maintenance plan. These may include, but are not limited to: <ul style="list-style-type: none"> – surface swales; – replacement of conventional impervious surfaces with pervious surfaces (e.g., porous pavement); – impervious surfaces disconnection; and – trees or other types of landscaping planted to intercept stormwater runoff. 	
3.9-4. Potential Impacts from New Impervious Surfaces on Groundwater Recharge and Aquifer Volume	LTS	No mitigation measure is required.	LTS
3.9-5. Placement of Structures that would Impede or Redirect Flood Flows within a 100-year Flood Hazard Area	PS	3.9-5a: Implement Mitigation Measure 3.9-2 (Coordinate with RD 1000 and CVRWQCB, Prepare and Submit a Drainage Plan, and Implement Requirements Contained in the Plan)	LTS
		3.9-5b: Coordinate with RD 1000 Regarding Project Design to Protect Existing Flood-Stage Water Levels in RD 1000 Drainage Canals Before the approval of grading plans, site improvements, and/or building permits, NUSD shall coordinate with RD 1000 regarding the design of project-related drainage facilities and stormwater discharge into the West Drainage Canal. NUSD shall provide evidence, to the satisfaction of RD 1000, that project-related discharges would maintain current canal stages for the 100-year (0.01 AEP) and 200-year (0.005 AEP) storm events in the RD 1000 interior drainage system per ULDC standards.	LTS

Table ES-1. Summary of Project Impacts and Mitigation Measures			
Impacts	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		<p>3.9-5c: Implement Requirements of Sacramento County Floodplain Management Ordinance</p> <p>Before the approval of grading plans, site improvements, and/or building permits, NUSD shall submit final drainage plans demonstrating to the satisfaction of the County Floodplain Administrator that the proposed project would appropriately accommodate 10-year, 100-year (0.01 AEP), and 200-year (0.005 AEP) flood flows.</p> <p>NUSD shall comply with the standards set forth in the Sacramento County Floodplain Management Ordinance (Sacramento County Zoning Code, SZC-2014-0007), which includes obtaining a Floodplain Management Permit (Chapter 5, Section 95.01). In support of the permit application, NUSD shall provide the County with the following:</p> <ul style="list-style-type: none"> • Plans in duplicate drawn to scale showing the nature, location, dimensions, and elevation of the property, existing or proposed structures, fill, storage of materials, and drainage facilities. • Proposed elevation in relation to currently adopted Vertical Datum of the lowest floor of all buildings, elevation of highest adjacent preconstruction natural grade and proposed elevation of lowest floor of all buildings. • Proposed elevation in relation to currently adopted Vertical Datum to which any structure will be flood-proofed, if required in Chapter 6. • Location and elevation of the base flood and the floodway, both before and after proposed development. • Location, volume and depth of proposed fill and excavation within the 100-year floodplain and the floodway. • Description of the extent to which any watercourse will be altered or relocated as a result of proposed development. <p>In addition to the above, as part of the Floodplain Management Permit, NUSD shall comply with any other conditions imposed by the Sacramento County Floodplain Administrator including the dedication of easements. The Floodplain Administrator may also require that NUSD enter into a written agreement with the County holding the County of Sacramento and the Sacramento County Water Agency free from liability for any harm that may occur to any real or personal property or person by flooding (Chapter 5, Sections 905-06 and 905-07).</p> <p>NUSD shall also comply with the new construction standards set forth in Chapter 6 of the Sacramento County Floodplain Management Ordinance, which include, but are not limited to, the following (Section 906-06):</p> <ul style="list-style-type: none"> • Identify special or local flood hazard areas and the elevation of the base flood. 	LTS

Table ES-1. Summary of Project Impacts and Mitigation Measures			
Impacts	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		<ul style="list-style-type: none"> • Provide the elevation of proposed buildings and pads, and assure the proposed pads will be at least 1 foot above the base flood elevation. • Be designed in accordance with the Floodplain Management Ordinance and the County Improvement Standards to minimize flood damage. • Provide a drainage system report in accordance with the County Improvement Standards with a narrative describing the existing and proposed stormwater management system, including all discharge points, collection, conveyance, and stormwater storage facilities. • Provide a drainage system map including, but not limited to, sub-watershed boundaries and the property's location within the larger watershed, predevelopment and post-development terrain at 1-foot contour intervals and the location of all existing and proposed drainage features. Include a plan of the parcel showing applicable proposed revisions to pre-development and postdevelopment surface drainage flows. • Stormwater calculations by a professional civil engineer shall be submitted to the Floodplain Administrator, including but not limited to, detention basin sizing, storm drain pipe sizing and overland flow path design. • No new construction or substantial improvements or development may occur without the approval of the Floodplain Administrator and without demonstrating that the cumulative effect of the proposed development when combined with all other existing and anticipated development will not have adverse impacts to downstream, upstream, or adjacent properties. 	
3.9-6. Substantial Increased Risk of Exposure to Flooding from Dam or Levee Failure	LTS	No mitigation measure is required.	LTS
3.10 LAND USE, PLANNING, POPULATION, AND HOUSING			
3.10-1. Consistency with Sacramento International Airport Land Use Compatibility Plan	LTS	No mitigation measure is required.	LTS
3.11 NOISE AND VIBRATION			
3.11-1. Short-Term Noise Levels from Construction Activities	PS	<p>3.11-1: Use Noise-Suppression Devices on Construction Equipment, Limit Construction to Daytime Hours, and Locate Stationary Equipment Away from Sensitive Noise Receptors to Reduce Noise Levels During Construction</p> <p>NUSD will implement the following noise-reduction and noise-control measures during construction activities:</p>	SU

Table ES-1. Summary of Project Impacts and Mitigation Measures			
Impacts	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		<ul style="list-style-type: none"> • Construction equipment will be properly maintained per manufacturers' specifications and fitted with the feasible noise suppression devices (e.g., mufflers, silencers, wraps). • All impact tools will be shrouded or shielded, and all intake and exhaust ports on power equipment will be muffled or shielded. • Construction will take place between the hours of 7:00 a.m. and 6:00 p.m. Monday through Saturday, and between the hours of 9:00 a.m. and 6:00 p.m. on Sunday. • Construction equipment will be shut down when not in use and will not idle for extended periods of time near noise-sensitive receptors. • Fixed/stationary equipment (e.g., generators, compressors, cement mixers) will be located as far as practicable from noise-sensitive receptors. • Noise control blanket barriers will be used during construction near noise-sensitive uses. • Residences within 500 feet of construction sites shall be notified of the construction schedule in writing prior to the beginning of construction. Designate a "construction liaison" that would be responsible for responding to any local complaints about construction noise. The liaison would determine the cause of the noise complaints (e.g., starting too early, bad muffler, etc.) and institute reasonable measures to correct the problem. Conspicuously post a telephone number for the liaison at the construction site. If conflicts occurred which were irresolvable by the above mitigation measures, erect temporary noise control blanket barriers on the eastern side of noise-generating equipment operating within 500 feet of occupied residences. 	
3.11-2. Short-Term Groundborne Vibration from Construction	LTS	No mitigation measure is required.	LTS
3.11-3. Long-Term Operational (Traffic) Noise	LTS	No mitigation measure is required.	LTS
3.11-4. Long-Term Operational (School Site) Noise Levels	LTS	No mitigation measure is required.	LTS
3.11-5. Land Use Compatibility of On-Site Sensitive Receptors with existing and Future Airport Noise	LTS	<p>3.11-5: Ensure Appropriate Noise Levels for Interior Learning Spaces</p> <p>NUSD shall comply with Title 24, Part 11, California Green Building Standards Chapter 5 and the California Department of Education, Division of the State Architect Project Submittal Guidelines related to interior classroom noise levels. The school shall incorporate building materials and, if necessary, other design techniques needed to achieve a total background noise of no more than 45 dBA (L_{eq}) for existing and forecast conditions, including the effects of both exterior-source noise and building service and utility noise.</p>	LTS

Table ES-1. Summary of Project Impacts and Mitigation Measures			
Impacts	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
3.12 PUBLIC SERVICES, INCLUDING RECREATION			
3.12-1. Increased Demand for Fire Protection Facilities and Services	LTS	No mitigation measure is required.	LTS
3.12-2. Increased Demand for Police Protection Services	LTS	No mitigation measure is required.	LTS
3.13 TRAFFIC AND TRANSPORTATION			
3.13-1. Existing plus Project Intersection Operations	LTS	No mitigation measure is required.	LTS
3.13-2. Existing plus Project Roadway Segment Operations	LTS	No mitigation measure is required.	LTS
3.13-3. Existing plus Project I-5 Mainline and Ramp Operations	LTS	No mitigation measure is required.	LTS
3.13-4. Potential for Creation of Substantial Traffic-Related Hazards due to a Design Feature	LTS	No mitigation measure is required.	LTS
3.13-5. Interference with Emergency Access	PS	<p>3.13-5: Prepare and Implement a Construction Traffic Control Plan</p> <p>The NUSD shall prepare and implement a traffic control plan for construction activities that may affect road rights-of-way, in order to facilitate travel of emergency vehicles on affected roadways. The traffic control plan must illustrate the location of the proposed work area; provide a diagram showing the location of areas where the public right-of-way would be closed or obstructed and the placement of traffic control devices necessary to perform the work; show the proposed phases of traffic control; and identify any time periods when traffic control would be in effect and the time periods when work would prohibit access to private property from a public right-of-way. Measures typically used in traffic control plans include advertising of planned lane closures, warning signage, and a flag person to direct traffic flows when needed. During construction, access to the existing surrounding land uses shall be maintained at all times, with detours used, as necessary, during road closures. The plan may be modified by to eliminate or avoid traffic conditions that are hazardous to the safety of the public.</p>	LTS
3.13-6. Decrease in Performance or Safety of Public Transit, Bicycle, or Pedestrian Facilities	LTS	No mitigation measure is required.	LTS

Table ES-1. Summary of Project Impacts and Mitigation Measures			
Impacts	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
3.14 UTILITIES AND SERVICE SYSTEMS			
3.13-1. Increased Demand for Water Supplies	LTS	No mitigation measure is required.	LTS
3.14-2. Increased Demand for Water Supply Conveyance Facilities	LTS	No mitigation measure is required.	LTS
3.14-3. Increased Demand for Wastewater Collection and Conveyance Facilities	LTS	No mitigation measure is required.	LTS
3.14-4. Increased Demand for the Sacramento Regional Wastewater Treatment Plant Facilities	LTS	No mitigation measure is required.	LTS
3.14-5. Increased Generation of Solid Waste and Compliance with Solid Waste Regulations	LTS	No mitigation measure is required.	LTS
3.15 ENERGY			
3.15-1. Consumption of energy	LTS	No mitigation measure is required.	LTS

Table ES-2. Cumulative Impact Summary		
Impact	Significant Cumulative Impact to which the Project Would Contribute?	Cumulative Contribution after Feasible Mitigation
Aesthetics	Yes	SU
Agricultural Resources	Yes	LTCC
Air Quality	Yes	LTCC
Biological Resources	Yes	LTCC
Cultural Resources	Yes	LTCC
Geology, Soils, Minerals, and Paleontological Resources	Yes	LTCC
Greenhouse Gas Emissions	Yes	LTCC
Hazards and Hazardous Materials	No	-
Hydrology and Water Quality	No	LTCC
Land Use and Planning	No	-
Noise	No	-
Public Services, Including Recreation	No	-
Transportation and Traffic	Yes	LTCC
Utilities	No	-
Energy	No	-
CC = Cumulative Considerable LTCC = Less than Cumulative Considerable SU = Significant and Unavoidable		

ES.6 ALTERNATIVES TO THE PROJECT

The CEQA Guidelines (Section 15126.6) require that an EIR describe a range of reasonable alternatives to the proposed project that could feasibly attain the basic objectives of the project and avoid and/or lessen the environmental effects of the project. Below is a summary of the alternatives to the proposed project considered in Chapter 4, “Alternatives.”

ES.6.1 ALTERNATIVE 1: NO PROJECT ALTERNATIVE

CEQA Guidelines Section 15126.6(e)(2), states that a discussion of the “No Project” alternative must consider “what would be reasonably expected to occur in the foreseeable future if the project were not approved, based on current plans.”

Historically, the site was used for agricultural crop production including wheat, barley, and rice. The last year of rice production was 2002. In 2006 and 2007, the site was in wheat production. It is assumed that, under the No Project Alternative, one single-family dwelling unit could be constructed on the project site, as permitted under the AG-80 zoning district. The No Project Alternative further assumes existing conditions within the project site could continue similar to current conditions; however, there are no constraints that would preclude the project site being returned to agricultural production.

Under the No Project Alternative, existing and future elementary and middle school students would likely attend Natomas Middle School, H. Allen High Elementary School, Heron K-8 School, and Witter Ranch Elementary

School. The NUSD anticipates that design capacity at these schools could occur by the 2019-2020 school year (NUSD 2014).

ES.6.2 ALTERNATIVE 2: TWO-STORY CLASSROOMS ALTERNATIVE

Under Alternative 2, the classrooms would be designed as two-story buildings. As a result, the classroom buildings would occupy less space within the project site and result in a more compact footprint with less developed acreage, thereby potentially reducing impacts related to ground disturbance and erosion.

The layout of the school buildings, recreation facilities, detention basin, parking lot, and student drop off/pickup area and access to the project site would be the same as the proposed project. Similar to the proposed project, the school would have approximately 82,000 square feet of total building space consisting of 40 classrooms with two special education spaces, a multi-purpose building/gymnasium, and an administration building. The grounds would include an internal quad, hardcourts, and playing fields. This alternative would accommodate the same number of students and staff as the proposed project (i.e., up to approximately 1,000 students in grades K–8 and approximately 60 staff).

ES.6.3 ALTERNATIVE 3: RECONFIGURED SITE PLAN ALTERNATIVE

Alternative 3 would relocate all proposed development to the southernmost boundary of the project site, as shown on Exhibit 4-2. This alternative would reduce the footprint of the school to approximately 16 acres compared to a footprint of approximately 18.3 acres under the proposed project. For this alternative, the layout of the classrooms, multi-purpose building/gymnasium, administration building, internal quad, hardcourts, and playing fields, and detention basin within the project footprint would be similar to the proposed project. However, the site plan would be modified to relocate the kinder play area, amphitheater, and parking lot. Access to the project site would be the same as the proposed project.

Similar to the proposed project, the school would have approximately 82,000 square feet of total building space. This alternative would accommodate the same number of students and staff as the proposed project (i.e., up to approximately 1,000 students in grades K–8 and approximately 60 staff).

ES.6.4 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

CEQA requires that, among the alternatives, an “environmentally superior” alternative be selected and that the reasons for such selection be disclosed. In general, the environmentally superior alternative is the alternative that would generate the fewest or least severe adverse impacts.

The No Project Alternative is environmentally superior to Alternatives 2 and 3, because it would avoid the significant and unavoidable impact to aesthetics, avoid the significant and unavoidable construction-related noise impacts, and avoid the less-than-significant or less-than-significant with mitigation impacts on air quality; biological resources; cultural resources; geology, soils, minerals, and paleontological resources; hazards and hazardous material; hydrology and water quality; noise and vibration; public services and recreation; utilities and service systems; and energy. While the No Project Alternative would eliminate significant and unavoidable adverse effects of the proposed project, it would not achieve the project objectives and would result in greater impacts associated with GHGs, traffic and transportation, and energy.

When the No Project Alternative is the environmentally superior alternative, CEQA requires that an additional alternative be identified. In this case, Alternative 3 would be the environmentally superior alternative. Alternative 3 would meet the project objectives. Alternative 3 would increase impacts associated with land use and hazards. However, Alternative 3 would reduce impacts associated with geology, soils, minerals, and paleontological resources; hydrology and water quality; and utilities and service systems. Although aesthetics impacts and construction-related noise impacts would remain significant and unavoidable, Alternative 3 would substantially reduce these impacts.

ES.7 AREAS OF CONTROVERSY

A notice of preparation (NOP) (Appendix A) of an EIR for the proposed project was circulated to agencies and the public for a 30-day review. A scoping meeting was held on June 19th, 2018. NUSD and the County received comments on the NOP from federal, State, regional and local agencies and interested organizations. The EIR addresses each of the topics raised in response to the NOP, to the extent that they relate to a reasonably foreseeable adverse physical environmental impact of the project. Following is summary of topics discussed in response to the NOP:

- ▶ Airport land use compatibility
- ▶ Safety zones associated with the Sacramento International Airport
- ▶ Airport noise
- ▶ Migratory Bird Treaty Act
- ▶ Giant garter snake
- ▶ Burrowing owl
- ▶ Growth-inducement effects
- ▶ Consistency with adopted habitat conservation plans
- ▶ Vehicular traffic and street design standards
- ▶ Pedestrian and bicycle connections
- ▶ Utilities and services
- ▶ Existing water quality regulations
- ▶ The need to notify the Division of Oil, Gas, and Geothermal Resources if a well is discovered on-site
- ▶ The need to notify the Federal Aviation Administration 45 days in advance of construction
- ▶ Flood risk and drainage modeling
- ▶ Impacts to RD 1000, fee payments, and operations and maintenance
- ▶ Bird-aircraft strike hazards
- ▶ Greenhouse gas emissions impacts and mitigation
- ▶ The need to examine alternatives
- ▶ Cultural resources impacts
- ▶ Land use planning consistency analysis
- ▶ Short- and long-term air pollutant emissions impacts

ES.8 PUBLIC REVIEW OF THE DRAFT EIR

This EIR is being circulated to federal, State, regional, and local agencies involved with the proposed project and made available to interested organizations and individuals who may wish to review and comment on the document. Written comments on the environmental document may be sent to NUSD at the following address:

Jen Mellor, Planning Technician, Facilities & Strategic Planning
Natomas Unified School District
1901 Arena Boulevard
Sacramento, CA 95834
E-mail: jmellor@natomasunified.org

A copy of the Draft EIR can be reviewed at the Education Center, 1901 Arena Boulevard, Sacramento.
Environmental documents may also be viewed at the District's website:

<https://natomasunified.org/departments/facilities-strategic-planning/ceqa-documents/>

Following receipt of comments and the close of the public comment period, NUSD will prepare a Final EIR that considers and responds to comments on the Draft EIR. A public hearing will then be held by the NUSD Board of Trustees, at which the Board will accept public comments on the Final EIR before deciding whether to certify the EIR and approve the proposed project.

1 INTRODUCTION

1.1 OVERVIEW

The Natomas Unified School District (NUSD) is proposing to construct and operate a new school (Kindergarten through 8th grade [K–8]) west of Interstate 5 (I-5) and north of Del Paso Road with the capacity to accommodate up to approximately 1,000 students.

The project was described under a previous Notice of Preparation (NOP) in 2008. However, the project was paused due to a moratorium on building in the Natomas Basin due to concerns regarding levee safety and a decision by the Federal Emergency Management Agency (FEMA) to change the area's flood zone designation. The Sacramento Area Flood Control Agency (SAFCA) has now completed substantial levee improvements along the Sacramento River and on June 16, 2015, the U.S. Army Corps of Engineers recertified the Natomas Basin levees, allowing permitting of new structures. Therefore, NUSD has reinitiated the CEQA and permitting process and is planning to open the Paso Verde School in the fall of 2020 or 2021.

1.2 PROPOSED PROJECT

NUSD is proposing to construct and operate the Paso Verde School on the project site. The school would have a footprint of approximately 18.3 acres. The remaining approximately 15.6 acres would not be developed (when the detention area is removed, the undeveloped area is 9.1 acres). The school will have approximately 82,000 square feet of total building space. The school will have 40 classrooms with 2 special education spaces, along with a classroom for music and a classroom for art. There will be offices for the principal and vice principal, space for administrative support, a multi-purpose/gymnasium, a counseling/psychology office and workspace, and a teacher lounge and workspace. The grounds will include an internal quad, hardcourts, and playing fields. The academic program will be focused on science, technology, engineering, arts, and mathematics (STEAM). The school will have approximately 40 teachers and 20 staff, including a principal, a vice principal, administrative assistants, counselors, psych, speech, librarian, health assistant, custodians, cafeteria, campus monitors. The school will operate from 8:00 in the morning until 3:00 in the afternoon, with some after-school activities occurring outside these hours. There is no outdoor lighting proposed for the sports fields, but the pedestrian/bicycle/emergency access to the east and the primary access road will be lit for safety and security.

1.3 PURPOSE OF THE EIR

NUSD has prepared this draft environmental impact report (DEIR) to inform agencies, interested organizations, and the public about the potential environmental effects of the proposed project. This EIR has been prepared in accordance with the California Environmental Quality Act (CEQA) (Public Resources Code Section 21000 et seq.) and the CEQA Guidelines (14 California Code of Regulations Section 15000 et seq.). This EIR addresses the direct, indirect, and cumulative environmental effects associated with construction and operation of the proposed school.

Section 21151(a) of the Public Resources Code specifies that a local agency must prepare an EIR for any project that it proposes to carry out or approve that may have a significant impact on the environment. The overall purpose of this EIR is to fulfill the following CEQA objectives:

- ▶ identify significant effects on the physical environment;
- ▶ indicate the manner in which these significant effects can be avoided or reduced to less than significant;
- ▶ identify alternatives to the proposed project that would avoid or reduce significant effects;
- ▶ disclose agency decision making;
- ▶ facilitate public involvement; and
- ▶ foster coordination among various governmental agencies.

An EIR provides information for use in the planning and decision-making process. The purpose of an EIR is not to recommend project approval or denial. CEQA requires decision-makers to balance project benefits against its unavoidable effects on the physical environment. If environmental effects are identified as significant and unavoidable (i.e., feasible mitigation would not reduce the impact to less than significant), the proposed project still may be approved by the lead agency if it believes that the social, economic, or other benefits outweigh the unavoidable impacts. In these cases, CEQA requires that the lead agency prepare a statement of overriding considerations that describes how the project’s impacts were weighed against its public benefits and the agency’s reasons for approving the project, based on information in the EIR and other information in the record.

1.4 LEAD AGENCY

NUSD is the lead agency for the proposed project. Pursuant to CEQA Section 21067, the lead agency means “the public agency which has the principal responsibility for carrying out or approving a project which may have a significant effect upon the environment.” As lead agency, the NUSD has the responsibility for, among other things, preparing and certifying an EIR that analyzes the potential environmental impacts of the proposed project; identifying feasible mitigation measures that could avoid or minimize significant environmental impacts; describing and analyzing feasible alternatives; adopting findings with regard each significant effect; providing a Statement of Overriding Considerations for all environmental impacts that cannot be mitigated to a less-than-significant level; and adopting a Mitigation Monitoring and Reporting Program to ensure that all required mitigation measures are implemented.

1.5 SCOPE AND CONTENT OF THE DEIR

A notice of preparation (NOP) (Appendix A) of a DEIR for the proposed project was circulated to agencies and the public beginning on May 31, 2018, for a 30-day review. A scoping meeting was held on June 19th, 2018. NUSD and the County received comments on the NOP from federal, State, regional and local agencies and interested organizations (Table 1-1). The NOP and responses are in Appendix A.

The EIR addresses each of the topics raised in response to the NOP, to the extent that they relate to a reasonably foreseeable adverse physical environmental impact of the project. Following is summary of topics discussed in response to the NOP:

- ▶ Airport land use compatibility
- ▶ Safety zones associated with the Sacramento International Airport
- ▶ Airport noise

**Table 1-1.
Notice of Preparation Comment Letters**

Affiliation	Signatory	Date
California Department of Transportation Division of Aeronautics	Phillip Crummins	June 20, 2018
California Department of Fish and Wildlife	Dylan Wood	June 29, 2018
City of Sacramento	Cheryle L. Hodge	July 6, 2018
California Department of Conservation Division of Oil, Gas, and Geothermal Resources	Charlene L. Wardlow	July 9, 2018
Federal Aviation Administration	Camille Garibaldi	June 4, 2018
Reclamation District 1000	Paul T. Devereux	June 19, 2018
Sacramento Area Council of Governments, Airport Land Use Commission	Greg Chew	June 29, 2018
Sacramento County	Tim Hawkins	June 25, 2018
Shingle Springs Band of Miwok Indians	Daniel Fonseca	June 16, 2018
Sacramento Metropolitan Air Quality Management District	Joanne Chan	June 28, 2018
United Auburn Indian Community	Gene Whitehouse	June 12, 2018

- ▶ Migratory Bird Treaty Act
- ▶ Giant garter snake
- ▶ Burrowing owl
- ▶ Growth-inducement effects
- ▶ Consistency with adopted habitat conservation plans
- ▶ Vehicular traffic and street design standards
- ▶ Pedestrian and bicycle connections
- ▶ Utilities and services
- ▶ Existing water quality regulations
- ▶ The need to notify the Division of Oil, Gas, and Geothermal Resources if a well is discovered on-site
- ▶ The need to notify the Federal Aviation Administration 45 days in advance of construction
- ▶ Flood risk and drainage modeling
- ▶ Impacts to RD 1000, fee payments, and operations and maintenance
- ▶ Bird-aircraft strike hazards
- ▶ Greenhouse gas emissions impacts and mitigation
- ▶ The need to examine alternatives
- ▶ Cultural resources impacts
- ▶ Land use planning consistency analysis
- ▶ Short- and long-term air pollutant emissions impacts

In accordance with CEQA Guidelines Section 15126.2, this DEIR evaluates the following issue areas for which the proposed project may have significant adverse impacts on the physical environment:

- ▶ aesthetics;
- ▶ agricultural resources;
- ▶ air quality;
- ▶ biological resources;
- ▶ cultural resources;

- ▶ geology, soils, and paleontology (including seismicity and mineral resources);
- ▶ greenhouse gas emissions
- ▶ hazards and hazardous materials;
- ▶ hydrology and water quality;
- ▶ land use and planning (including population, employment, and housing);
- ▶ noise and vibration
- ▶ public services and recreation;
- ▶ transportation;
- ▶ utilities and service systems; and
- ▶ energy

This EIR also evaluates potential cumulative impacts and compares the impacts of the proposed project with those of alternatives.

1.6 EIR REVIEW PROCESS

This EIR is being circulated to federal, State, regional, and local agencies involved with the proposed project and made available to interested organizations and individuals who may wish to review and comment on the document. Written comments on the environmental document may be sent to NUSD at the following address:

Jen Mellor, Planning Technician, Facilities & Strategic Planning
Natomas Unified School District
1901 Arena Boulevard
Sacramento, CA 95834
E-mail: jmellor@natomasunified.org

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Following receipt of comments and the close of the public comment period, NUSD will prepare a Final EIR that considers and responds to comments on the Draft EIR. A public hearing will then be held by the NUSD Board of Trustees, at which the Board will accept public comments on the Final EIR before deciding whether to certify the EIR and approve the proposed project.

2 PROJECT DESCRIPTION

2.1 INTRODUCTION

The Natomas Unified School District (NUSD) is proposing to construct and operate a Kindergarten through 8th grade (K–8) school west of Interstate 5 (I-5) and north of Del Paso Road with the ultimate capacity to accommodate up to 1,000 students and approximately 60 staff members. This section identifies the location, background, objectives, detailed description, and the needed permits and approvals for the proposed project.

2.2 PROJECT LOCATION AND SETTING

The project site is located on an approximately 34-acre property north of Del Paso Road, directly west of the Westlake residential development, in the Natomas area of unincorporated Sacramento County (Exhibit 2-1). The site is bordered on the north and west by a parcel that is adjacent to the Reclamation District (RD) No. 1000 West Drainage Canal and on the east by a 200-foot wide parcel adjacent to the City limits of the city of Sacramento (Exhibit 2-2).

2.3 PROJECT HISTORY

The project was described under a previous EIR Notice of Preparation (NOP) in 2008. However, the project was put on hold because of concerns regarding levee safety in the Natomas Basin. Since that time, the Sacramento Area Flood Control Agency (SAFCA) has completed substantial levee improvements, which has allowed the permitting of new structures. NUSD has restarted the CEQA and permitting process so that a new school at the project site can open in the fall of 2020 or 2021.

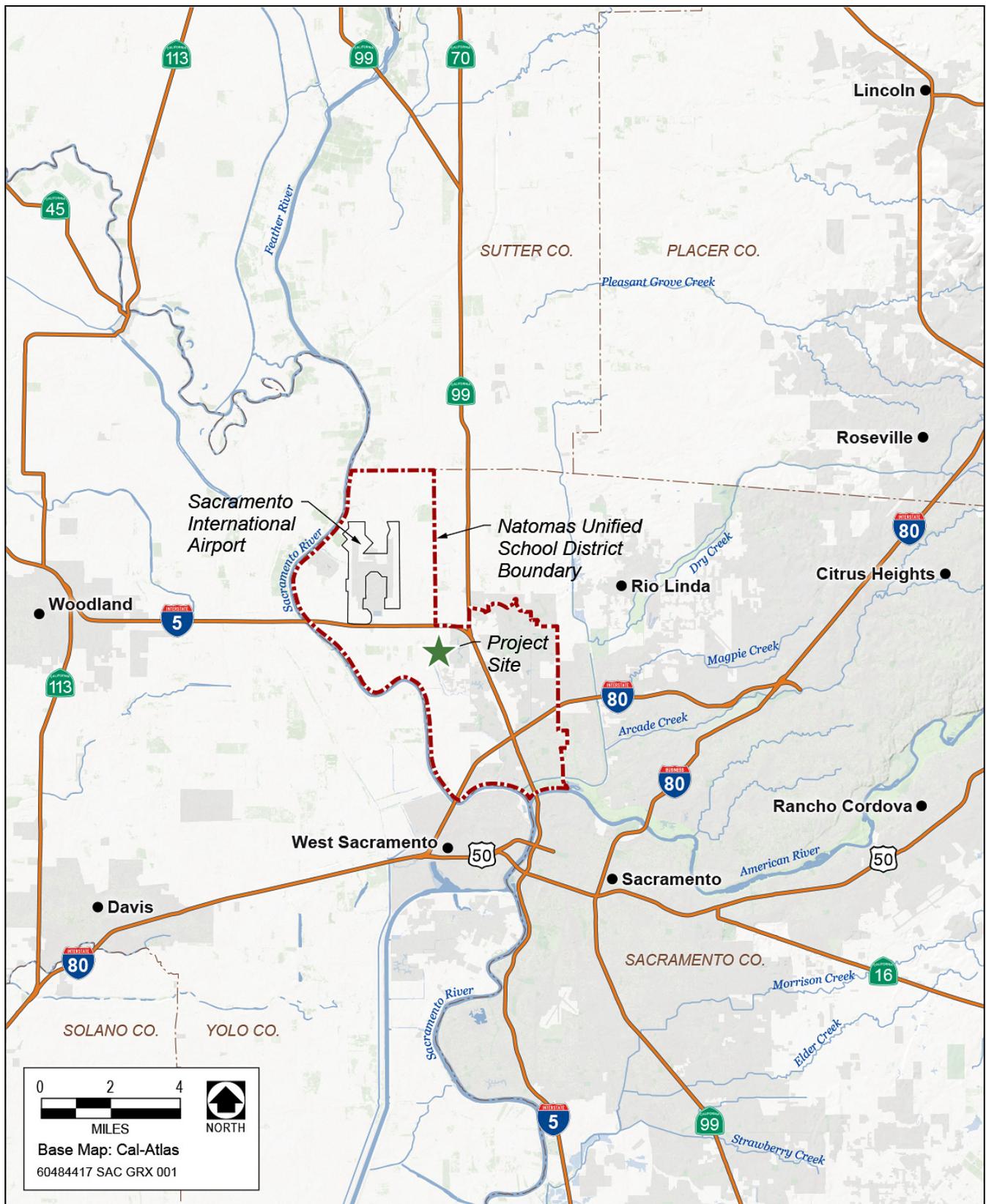
Since the initial purchase of the 41.2-acre site in 2007, the site configuration has changed. In 2012, NUSD deeded the eastern 200 feet of the site to West Lakeside LLC. However, NUSD reserved the right to install underground utilities and road improvements to serve the site. With the transfer of this 7.31 acres (Assessor's Parcel Number [APN] 225-0030-064), the NUSD-owned parcel is ~33.9 acres.

2.4 BACKGROUND AND NEED FOR THE PROJECT

NUSD and the City of Sacramento have been planning for a new school west of I-5 for many years. The City identified the need for a high school site west of I-5 and described a projected need for a 40-acre high school site in the 2008 Draft North Natomas Community Plan (adopted 2009). However, a specific site was not identified. Concurrent with the City's land use planning efforts, NUSD identified a 41-acre property north of Del Paso Road and west of El Centro Road and investigated its potential purchase.¹ NUSD completed a *Preliminary Environmental Assessment Report* and a Phase I Environmental Site Assessment and obtained review and approval by the California Department of Toxic Substances Control pursuant to California Education Code (CEC) Section 17213.1 (a), in 2007.² NUSD recently completed an updated Phase I Environmental Site Assessment and there have been no changes.

¹ Since that time, NUSD's needs have changed such that a K-8 rather than a high school is the immediate need.

² Letter from Mark Malinowski, DTSC Schools Unit, to Michael Cannon, NUSD Facilities and Planning. October 19, 2007.



Source: AECOM 2017

Exhibit 2-1. Regional Location Map



Source: AECOM 2016

Exhibit 2-2. Vicinity Map

Pursuant to Public Resources Code Section 21151.2, NUSD requested site review by Sacramento County. On December 12, 2006, the Sacramento County Planning Commission held a hearing regarding the proposed site acquisition and on January 2, 2007, issued a letter to NUSD³ stating that the Commission “*has determined that the proposed acquisition is consistent with the County General Plan and is appropriate for acquisition by the School District.*” NUSD also obtained an initial site evaluation from the California Department of Education (CDE).⁴ CDE obtained a Caltrans Division of Aeronautics evaluation of the school’s proximity to the Sacramento International Airport, which found that the school site provides an appropriate level of safety. With these initial steps completed, NUSD purchased the 41-acre “West Lakeside” site on March 23, 2007 and began site planning.

The project was originally envisioned as a high school. However, as noted, the project was put on hold because of concerns regarding levee safety in the Natomas Basin and a decision by the FEMA in 2008 to change the area’s flood zone designation to (AE), which corresponds to the 100-year floodplain. This change required extensive flood-proofing of new structures and effectively stopped projects that were not issued building permits before the change took effect. Since then, the SAFCA completed levee improvements along the Sacramento River east levee and Natomas Cross Canal, which, along with funding authorization for the remaining improvements, allowed FEMA to improve the area’s flood zone designation to A99 in June of 2015. The A99 Zone designation means that FEMA has made an adequate progress determination, allowing permitting and construction of new structures in advance of the completion of flood protection improvements.

With SAFCA’s initial levee improvements completed and the housing market recovering, development has resumed in the Natomas Basin and within NUSD’s service boundary. As a result, NUSD’s enrollment has increased, area schools are overcrowded, and NUSD has a pressing need for a new school to serve the area west of I-5. Since the purchase of the property, however, the immediate need is for K-8 capacity, rather than a high school, as originally envisioned. NUSD projects that student enrollment will increase substantially over the next 10 years. Therefore, NUSD has been taking steps to address its current overcrowding, such as moving 6th graders to middle schools, adjusting school boundaries, adding portable classrooms, and building additional facilities. These changes have affected other schools in the District. NUSD must now move forward with this new school to accommodate existing needs, in addition to the potential for new schools in other locations to accommodate population growth.

2.4.1 PLANNING CONTEXT

The site is located in northwestern unincorporated Sacramento County, approximately 1 mile east of the Sacramento River. Historically, the site has been used for agricultural crop production, including wheat, barley, and rice. Exhibit 2-3 depicts the school site and the surrounding land uses, including agricultural lands to the north, residential development to the east (the Westlake development), fallow agricultural lands on the directly adjacent parcel to the south with residential further to the south (Natomas Central development - across Del Paso Road), and habitat conservation lands managed by The Natomas Basin Conservancy (TNBC) to the west (across the West Drainage Canal). TNBC preserve lands are managed as habitat for species covered under the Natomas Basin Habitat Conservation Plan (NBHCP), including the Swainson’s hawk (*Buteo swainsoni*). The adjacent West Drainage Canal provides potential aquatic habitat for common fishes and amphibians, but also the giant garter snake (*Thamnophis gigas*), which is federally listed and State-listed as a threatened species, and for western pond

³ Letter from Faith Grunwaldt, Sacramento County Policy Planning Commission, to Frank Harding, NUSD Director of Facilities. January 2, 2007.

⁴ Letter from Michael J. O’Neill, California Department of Education, to NUSD. Initial School Site Evaluation. February 13, 2007.

turtle (*Emys marmorata*), a California species of special concern. Exhibit 2-3 provides photographs of the site facing the northwest toward I-5 and Sacramento International Airport, and northeast toward the Westlake development.



Looking northwest at proposed school site



Looking northeast towards Westlake Development

Source: AECOM

Exhibit 2-3. Photographs of Proposed Paso Verde School Site

SACRAMENTO COUNTY URBAN SERVICES BOUNDARY AND URBAN POLICY AREA

The project site is located adjacent to, but outside of the County's current Urban Services Boundary (USB) and Urban Policy Area (UPA). Water supply is available from the City of Sacramento by extending existing adjacent infrastructure and the project site is within the existing service boundaries of the Sacramento Area Sewer District (SASD) and Sacramento Regional County Sanitation District (SRCSD), which have both indicated they will serve the property from an existing sewer line in Del Paso Road.

SACRAMENTO COUNTY GENERAL PLAN AND ZONING CODE

The General Plan land use designation for the site is Agricultural Cropland. The County's Zoning Code, which implements the General Plan, was adopted on November 2, 2011 following the County's last comprehensive General Plan update. The project site's zoning designation is AG-80 (Agricultural, 80-acre minimum lot size). Kindergarten through 12th grade public schools are a permitted by right within the AG-80 zoning district. The project would not require a General Plan land use designation change or a zoning change.

2.5 PROJECT OBJECTIVES

The primary objectives for the proposed Paso Verde School project are as follows:

- ▶ Meet the educational needs of up to approximately 1,000 NUSD in grades K–8 students.
- ▶ Meet NUSD's geographical needs for additional schools within its service boundary and west of I-5.
- ▶ Slow enrollment growth at nearby overcrowded elementary and middle schools.
- ▶ Provide safe and efficient school site access for students and NUSD staff.

2.6 PROJECT CHARACTERISTICS

NUSD is proposing to construct and operate the Paso Verde School on the project site (Exhibit 2-4). Detailed design of the school and site will be completed during 2017 and 2018, construction will occur from April 2019 to July 2020 (or 2021), and the school will open in the fall of 2020 or 2021. The school would have a footprint of approximately 18.3 acres and would accommodate up to approximately 1,000 students in grades K–8. The remaining approximately 15.6 acres would not be developed, but would be maintained with low lying vegetation for fire abatement (9.1 acres would not be developed when the detention area is removed from this calculation). At this time, the site plan anticipates approximately 40 percent landscaped space and 60 percent buildings and hardscape.

The school will have approximately 82,000 square feet of total building space. The school will have 40 classrooms with 2 special education spaces, along with a classroom for music and a classroom for art. There will be offices for the principal and vice principal, space for administrative support, a multi-purpose/gymnasium, a counseling/psychology office and workspace, and a teacher lounge and workspace. The grounds will include an internal quad, hardcourts, and playing fields. The academic program will be focused on science, technology, engineering, arts, and mathematics (STEAM). The school will have approximately 40 teachers and 20 staff, including a principal, a vice principal, administrative assistants, counselors, psych, speech, librarian, health assistant, custodians, cafeteria, campus monitors.

The school will operate from 8:00 in the morning until 3:00 in the afternoon, with some after-school activities occurring outside these hours. There is no outdoor lighting proposed for the sports fields, but the pedestrian/bicycle/emergency access to the east will be lit for security.

2.6.1 PUBLIC SERVICES AND UTILITIES

WATER SUPPLY

Potable and fire protection water supply are available to the school by extending existing infrastructure in Westlake Parkway (Exhibit 2-5). The City will provide water through an agreement with NUSD, along with encroachment permit conditions, maintenance easements, and compliance with relevant City improvement standards. With approval of the City’s Director of Utilities, irrigation water will also be provided by the City.

The Division of the State Architect, as part of CAL Green, requires all schools to “self certify” new landscape subject to Outdoor Water Use regulations based on the Model Water Efficient Landscape Ordinance (MWELO). The intent is water savings and to promote use of drought tolerant planting and efficient irrigation, especially in areas that do not require turf for educational purposes.

WASTEWATER COLLECTION AND TREATMENT

The project site is within the service boundaries of the SASD and SRCSD. SASD’s 12-inch sewer line in Del Paso Road was designed to provide service to the property and would be connected to the school via the access road that will connect to Del Paso Road. SASD’s conveyance facilities connect to SRCSD conveyance facilities and regional wastewater treatment plant near Elk Grove. Both SASD and SRCSD have stated they will serve the property and connect it to the existing sewer system.

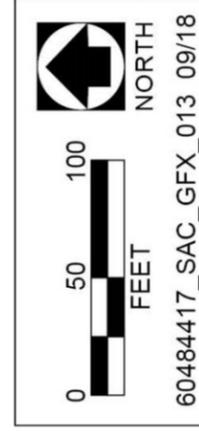


LEGEND:

A: ADMINISTRATION, LIBRARY, KINDERGARTEN

B-E: CLASSROOM BUILDINGS

M: MULTI-PURPOSE, KITCHEN, GYM



Source: Lionakis 2018

Exhibit 2-4. Preliminary Site Plan (Subject to Revision)

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Source: AECOM 2016

Exhibit 2-5. Preliminary Plan for Off-Site Improvements (subject to change)

STORM WATER DRAINAGE

The drainage system would be designed to minimize runoff and to promote water quality treatment. Drainage pipelines would be installed in trenches excavated with a backhoe. The school site would ultimately drain to a stormwater detention pond. The detention pond would drain within 48 hours to the West Drainage Canal using an existing RD 1000 outfall. A new manhole will be installed on an existing 24-inch culvert on the landside of the levee. A 12-inch force main will discharge into the manhole. An existing slide gate on top of the levee can be closed during construction, so dewatering should not be required. The discharge rate would be at or under RD 1000's criteria for accepting runoff.

ELECTRICITY AND NATURAL GAS

The proposed project would include extension of electricity services by Sacramento Municipal Utility District (SMUD) and natural gas by Pacific Gas and Electric Company (PG&E).

While the Paso Verde School is not pursuing environmental certification (i.e. LEED, CHPS), it will be designed to the high sustainability standard set by those programs. Building orientation to maximize natural daylighting in the learning environments was a key driver in the site development of the campus. Because of its size, the project will require commissioning of HVAC systems. This effort ensures that systems are operating at maximum energy efficiency. The project will be net zero ready to facilitate future installation of solar facilities.

2.6.2 TRANSPORTATION AND CIRCULATION

Primary access will be via Del Paso Road from a new north-south oriented roadway connecting to the existing intersection with Hovnanian Drive, which includes a Class I bike path. Pedestrian and bicycle access will be provided from an existing traffic circle at the intersection of Westlake Parkway and Snelling Lane (see Exhibit 2-6). This will also provide emergency vehicle access. In addition, the project includes pedestrian/bicycle improvements along the frontage of Del Paso Road. NUSD intends to provide a bicycle/pedestrian connection also to Egret Park in the city of Sacramento, but this would involve construction on separately owned private property and this effort is in progress. The site plan includes 84 parking spaces, a loop access roadway, and a student drop-off/pickup area. North Natomas Jibe uses Del Paso Road in the vicinity of the project site. There is a stop that would be less than a half-mile walk to the school. At this time, NUSD is not proposing bus service.

2.7 PROJECT APPROVALS AND INTENDED USES OF THE EIR

The California Environmental Quality Act ("CEQA"), Public Resources Code sections 21000 et seq., requires that lead agencies consider the environmental consequences of projects over which they have discretionary authority prior to taking action on those projects. This Environmental Impact Report (EIR) has been prepared to satisfy CEQA and the CEQA Guidelines, Title 14 of the California Code of Regulations, Chapter 3, Section 15000 et seq.



Source: Lionakis 2018

Exhibit 2-6. Vehicular, Pedestrian and Bicycle, and Primary and Secondary Emergency Access

An EIR is a public informational document designed to provide decision makers and the public with an analysis of the environmental effects of a proposed project, to indicate possible ways to reduce or avoid significant effects, and to describe reasonable alternatives to a project. An EIR must also disclose significant environmental impacts that cannot be avoided; growth-inducing impacts; effects not found to be significant; and significant cumulative impacts associated with past, present, and reasonably foreseeable probable future projects.

Approval of the proposed project requires discretionary action by the NUSD. Pursuant to CEQA Section 21067, the lead agency means “the public agency which has the principal responsibility for carrying out or approving a project which may have a significant effect upon the environment.” As lead agency, the NUSD has the responsibility for, among other things, preparing and certifying an EIR that analyzes the potential environmental impacts of the proposed project; identifying feasible mitigation measures that could avoid or minimize significant environmental impacts; describing and analyzing feasible alternatives; adopting findings with regard each significant effect; providing a Statement of Overriding Considerations for all environmental impacts that cannot be mitigated to a less-than-significant level; and adopting a Mitigation Monitoring and Reporting Program to ensure that all required mitigation measures are implemented.

Several agencies may serve as responsible and trustee agencies pursuant to Sections 15381 and 15386 of the CEQA Guidelines. These agencies may include, but are not limited to the following.

2.7.1 FEDERAL

- ▶ U.S. Army Corps of Engineers – Clean Water Act Section 404 Nationwide Permit
- ▶ U.S. Fish and Wildlife Service – Endangered Species Act Section 7 consultation

2.7.2 STATE

- ▶ Regional Water Quality Control Board – Clean Water Act Section 401 Water Quality Certification, Section 402 National Pollutant Discharge Elimination System, Stormwater General Permit
- ▶ California Department of Fish and Wildlife – California Fish and Game Code Section 1600 Streambed Alteration Agreement, California Endangered Species Act compliance
- ▶ California Department of Education/Division of State Architect – final school site and design approval (per California Education Code Section 17213)
- ▶ Caltrans Division of Aeronautics – consultation with CDE on proximity to Sacramento International Airport
- ▶ California Department of Toxic Substances Control – review of preliminary endangerment assessment and Phase I Environmental Site Assessment (ESA) (complete)

2.7.3 LOCAL

- ▶ Sacramento County – grading permit and plan check for off-site infrastructure.
- ▶ SASD and SRCSD – approval of plans for providing sewer service.

- ▶ City of Sacramento – approval to provide water service outside City limits (pursuant to Sacramento City Code Section 13.04.400), review of a water study to the for proposed connections to the City’s water system, encroachment permit for the proposed service connections, easement to the City for access and maintenance of City water meters, approval of the City’s Director of Utilities to provide irrigation water.
- ▶ Airport Land Use Commission (ALUC) for Sacramento, Sutter, Yolo and Yuba counties – finding of consistency with the Sacramento International Airport Land Use Compatibility Plan. This determination was made in June of 2018 (Chew, pers. comm., 2018).
- ▶ Reclamation District 1000 (RD 1000) – approval of use of an existing outfall to RD 1000’s West Drainage Canal.

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3 ENVIRONMENTAL SETTING, IMPACTS, AND MITIGATION MEASURES

3.0 APPROACH TO THE ENVIRONMENTAL ANALYSIS

The California Environmental Quality Act Guidelines (CEQA Guidelines) require the environmental analysis for an EIR to include an evaluation of impacts associated with a proposed project and to identify mitigation for any potentially significant impacts. CEQA Guidelines Section 15126.2(a) states:

An EIR shall identify and focus on the significant environmental effects of the proposed project. In assessing the impact of a proposed project on the environment, the lead agency should normally limit its examination to changes in the existing physical conditions in the affected area as they exist at the time the notice of preparation is published, or where no notice of preparation is published, at the time environmental analysis is commenced. Direct and indirect significant effects of the project on the environment shall be clearly identified and described, giving due consideration to both the short-term and long-term effects. The discussion should include relevant specifics of the area, the resources involved, physical changes, alterations to ecological systems, and changes induced in population distribution, population concentration, the human use of the land (including commercial and residential development), health and safety problems caused by the physical changes, and other aspects of the resource base such as water, historical resources, scenic quality, and public services. The EIR shall also analyze any significant environmental effects the project might cause by bringing development and people into the area affected.

3.0.1 SECTION FORMAT AND CONTENTS

The environmental setting, impacts, and required mitigation measures for the proposed project are organized by issue area, corresponding to topics in CEQA Guidelines Appendix G, as amended. Each section follows the same format:

- ▶ The “**Environmental Setting**” subsection provides an overview of the existing physical environmental conditions (i.e., the environmental baseline) for each issue area at the time this analysis was prepared. The environmental baseline at the time of the release of the NOP (May 2018) is the context against which potential project impacts are evaluated.
- ▶ The “**Regulatory Context**” subsection identifies the federal, State, regional, and local plans, policies, laws, regulations, and ordinances that are relevant to each environmental topic.
- ▶ The “**Environmental Impacts and Mitigation Measures**” subsection presents the following information:
 - The “**Methodology**” subsection describes the methods, process, procedures, and assumptions used to formulate and conduct the impact analysis.
 - The “**Thresholds of Significance**” subsection identifies the criteria established by the lead agency to define at what level an impact would be considered significant. Criteria may be defined by a lead agency based on examples found in CEQA or the CEQA Guidelines, scientific and factual data relative to the lead agency jurisdiction, views of the public in the affected area, the policy/regulatory environment of affected jurisdictions, or other factors.

- If applicable, the “**Issues Not Discussed Further**” subsection identifies issues for which the proposed project would not affect the physical environment. An explanation is provided of how the determination of “no impact” was reached.
- The “**Impact Analysis**” subsection presents an assessment of the potential direct and indirect impacts of the proposed project and specifies why impacts are found to be “significant and unavoidable,” “significant,” “potentially significant,” “less than significant with mitigation,” or “less than significant” (see Section 3.0.2 Terminology Used in the EIR) or why there is no environmental impact.

If there is found to be a potentially significant or significant impact, mitigation measures are provided, where available and feasible. The measures are numbered to correspond with the impacts they mitigate (Mitigation Measure 3.2-1 addresses Impact 3.2-1, for example). Section 15370 of the CEQA Guidelines defines mitigation as:

- ▶ avoiding the impact altogether by not taking a certain action or parts of an action;
- ▶ minimizing impacts by limiting the degree of magnitude of the action and its implementation;
- ▶ rectifying the impact by repairing, rehabilitating, or restoring the affected environment;
- ▶ reducing or eliminating the impact over time by preservation and maintenance operation during the life of the action; or
- ▶ compensating for the impacts by replacing or providing substitute resources or environments.

Where no feasible mitigation is available to reduce impacts to a less-than-significant level, the impacts are identified as significant and unavoidable.

The analysis of cumulative impacts is presented in Chapter 5, along with the analysis of growth-inducing impacts.

3.0.2 TERMINOLOGY USED IN THIS EIR

IMPACT LEVELS

This EIR uses the following terminology to denote the significance of environmental impacts of the proposed project:

- ▶ **No impact** would occur if the construction, operation, and maintenance of the proposed project would not have any direct or indirect effects on the environment. This impact level does not require mitigation.
- ▶ A **less-than-significant impact** is one that is not a substantial and adverse change in the physical environment. This impact level does not require mitigation, even if feasible mitigation measures are available.
- ▶ A **significant impact** is defined by Public Resources Code Section 21068 as “a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project.” Feasible mitigation measures must be identified, in an attempt to avoid, minimize, or reduce the magnitude of significant impacts.

- ▶ A *potentially significant impact* is one that, if it were to occur, would be considered a significant impact, as described above. However, the occurrence of the impact cannot be immediately determined with certainty. For CEQA purposes, a potentially significant impact is treated (i.e., mitigated) as if it were a significant impact.

- ▶ A *significant and unavoidable impact* is a substantial or potentially substantial adverse effect on the environment that cannot be reduced to a less-than-significant level, even with implementation of feasible mitigation. A project with significant and unavoidable impacts could proceed, but the lead agency would be required to required (i) to conclude in findings that there are no feasible means of substantially lessening or avoiding the significant impact, in accordance with CEQA Guidelines Section 15091(a)(3) and (ii) to prepare a statement of overriding considerations, in accordance with CEQA Guidelines Section 15093, explaining why the District has chosen to proceed with the project in spite of the potential for significant impacts.

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3.1 AESTHETICS

3.1.1 INTRODUCTION

Aesthetics or visual resources impacts are generally defined in terms of a project's physical characteristics and potential visibility, and the extent to which the presence of a proposed project would change the perceived visual character and quality of the physical environment in which it would be located. This section addresses aesthetics and visual resources that could be affected by implementation of the proposed project, including designated scenic roadways, scenic vistas, visual character, light and glare, and skyglow.

3.1.2 EXISTING CONDITIONS

VISUAL RESOURCE EVALUATION CONCEPTS AND TERMINOLOGY

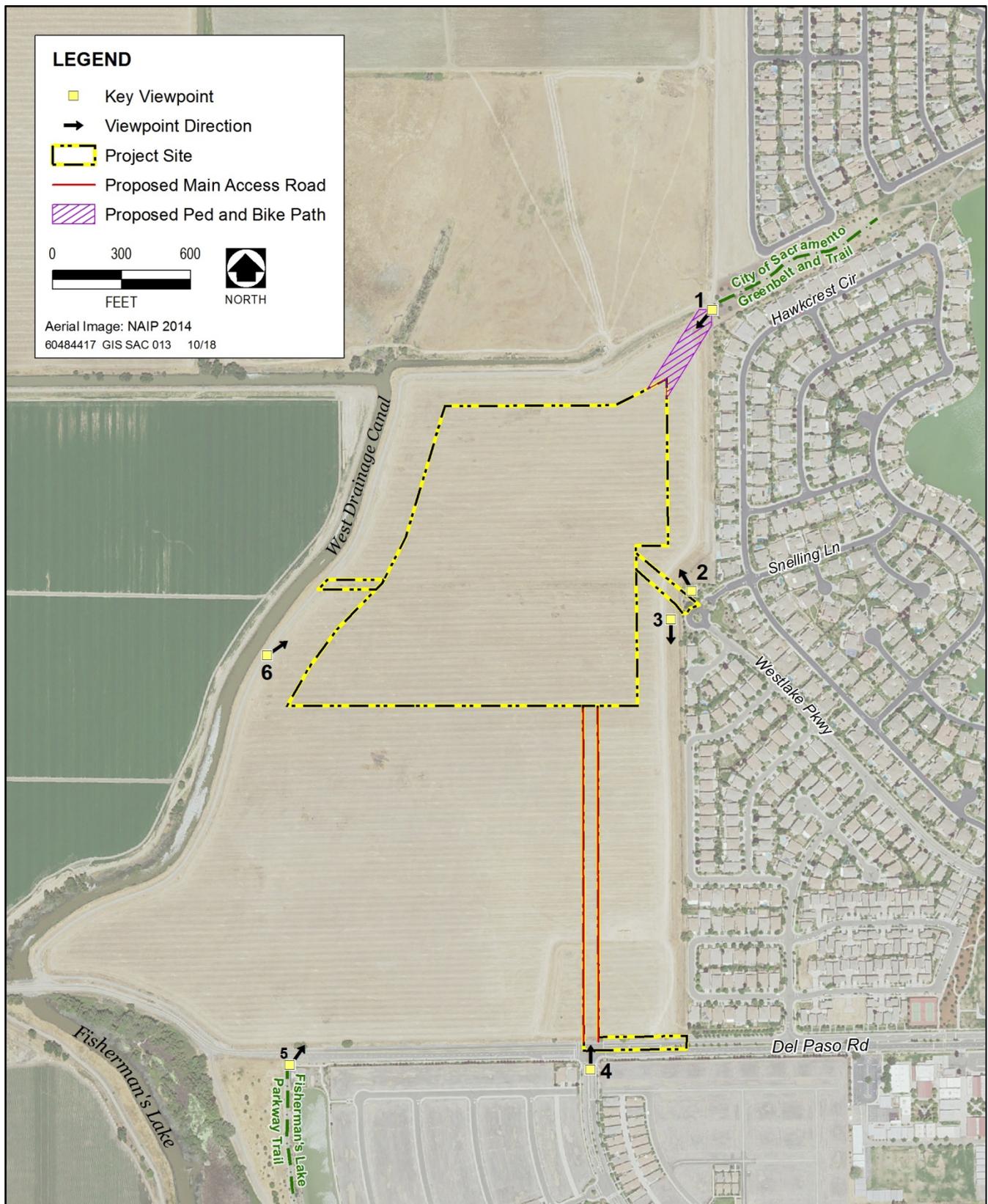
Both natural and created features in a landscape contribute to its visual character. Landscape characteristics influencing visual character include geologic, hydrologic, botanical, wildlife, recreation, and urban features. The basic elements that comprise the visual character of landscape features are form, line, color, and texture. The appearance of the landscape is described in terms of the dominance of each of these elements.

Several sets of criteria have been developed for defining and evaluating visual quality. The criteria developed by the Federal Highway Administration (FHA) (FHA 1988) and the U.S. Forest Service (USFS) (USFS 1995), which are used in this analysis, include the concepts of vividness, intactness, and unity. According to these criteria, none of these is itself equivalent to visual quality; all three must be considered high to indicate high quality visual resources. These terms are defined below.

- ▶ “Vividness” is the visual power or memorability of landscape components as they combine in striking and distinctive visual patterns.
- ▶ “Intactness” is the visual integrity of the natural and human-built landscape and its freedom from encroaching elements.
- ▶ “Unity” is the visual coherence and compositional harmony of the landscape considered as a whole.

Viewer sensitivity, also considered in relation to visual quality, depends on the number and type of viewers and the frequency and duration of views. Visual sensitivity is also affected by viewer activity, awareness, and expectations in combination with the number of viewers and the duration of the view. The viewer's distance from landscape elements plays an important role in the determination of an area's visual quality. Landscape elements are considered higher or lower in visual importance based on their proximity to the viewer. Generally, the closer a resource is to the viewer, the more dominant, and therefore visually important, it is to the viewer. Both FHA and USFS separate landscapes into foreground, middleground, and background views. Although this should be considered on a case-by-case basis, in general, the foreground is characterized by clear details (within 0.25–0.5 mile from the viewer); the middleground is characterized by loss of clear texture within a landscape creating a uniform appearance (foreground to 3–5 miles in the distance); and the background extends from the middleground to the limit of human sight (FHA 1988; USFS 1995).

The locations of key observations points (KOPs) are shown in Exhibit 3.1-1. KOPs consist of photographs of the project site that were obtained during site visits by AECOM in February 2016 and May 2018. These photographs



Source: AECOM 2018

Exhibit 3.1-1 Key Observation Points

are representative of the existing regional and local landscape character from sensitive viewer groups in the project vicinity. Brief descriptions of the foreground, middleground, and background characteristics of each KOP are presented with each photograph.

EXISTING VISUAL RESOURCES IN THE PROJECT AREA

Visual Character

The project site is located within the flat alluvial plain of the Sacramento Valley, approximately 1 mile northeast of the Sacramento River. The river is not visible from the project site due to distance and intervening topography and vegetation. The approximately 34-acre project site is cultivated for grass hay (i.e., oat and rye). The topography is level, and there are no structures or aboveground utilities on the project site. The grass crops are green during each growing cycle and brown after harvest.

A City of Sacramento greenbelt and pedestrian/bicycle trail runs in an east/west direction through Egret Park northeast of the project site, and currently ends approximately 200 feet northeast of the proposed school site. The viewshed of this pedestrian/bicycle trail is dominated by housing and associated landscaping on all sides, except at the western end of the trail, where recreationists have views of the project site to the southwest. As shown in KOP 1, these recreationists have views of the flat project site cultivated with grasses in middleground views. Houses with red roofs in the Natomas Central development south of Del Paso Road are visible as an angular line to the south in the background. Two tall, metal antenna towers with intermittent flashing white



KOP 1 – Looking southwest from the western end of the Egret Park pedestrian and bicycle trail. Bark mulch and wooden posts and chains marking the end of the trail, along with residential fencing and landscaping to the south, are visible in the foreground. Rows of cut grasses for hay are visible on the project site in the middleground. Residential housing, electrical transmission lines, and vegetation associated with Fisherman’s Lake are visible in the background.

warning lights are visible beyond the houses and introduce a strongly contrasting linear vertical element. Brown wood electrical transmission poles, are visible along Del Paso Road. The tall, green, rounded forms of heavy vegetation associated with Fisherman’s Lake south and southwest of Del Paso Road, are visible in the background.

Housing, along with associated landscaping and local streets in the Westlake Village residential development, is present approximately 200 feet east of the school site and the proposed pedestrian/bicycle/emergency access route. Residential landscaping, including shrubs and some large trees, is present at the back of these lots. A see-through metal gate with black bars is located between the houses and the school site, at the western edge of the housing development boundary. The proposed pedestrian/bicycle/emergency access route would be located adjacent to a small, gated electrical transformer area that has been landscaped with trees and shrubs at the intersection of Westlake Parkway and Snelling Lane. The intersection already contains a traffic circle, pedestrian/bicycle street crossing, streetlights, and landscaping with grass and trees.

Existing views of the proposed school site and pedestrian/bicycle access route are represented by KOP 2. The viewshed from these residences looking west and north consists of grasses grown for hay on the project site, which are green in the spring and brown during the remainder of the year. Scattered trees and shrubs along the West Drainage Canal stand out in middleground views. The background horizon views to the west and north appear unlimited from the perspective of these houses, and the cultivated hay fields, when viewed in combination with the scattered trees and agricultural buildings, form a pleasing viewshed of open space indicative of rural agricultural land throughout the Sacramento region.



KOP 2 – Looking northwest from the landscaped area at the western end of Snelling Lane in the Westlake subdivision. Grasses and ruderal vegetation are visible in the foreground along the utility easement and a cultivated hay crop is visible at the proposed school site in the center of this view. Scattered trees are visible in the middleground along the West Drainage Canal. White agricultural structures and agricultural fields are visible in the background, along with vehicles traveling on I-5.

Southeast of the proposed school site, there are five houses on the west side of the Westlake residential development that are approximately 380 feet east of the proposed access road. The remaining houses are located on the east side of Clarewood Way and Cognac Circle, and are set back 50 feet from the western Westlake property boundary (i.e., 430 feet from the proposed access road). Existing views of the proposed access road are represented by KOP 3. The viewshed from these residences looking southwest consists of tall landscape trees along the Westlake property boundary, and housing within the Natomas Central residential development south of Del Paso Road. Electrical transmission towers and lines, along with two tall antenna towers, are also visible to the south. Heavy tree cover and lower-growing shrubs surrounding Fisherman's Lake dominate the viewshed in the background. The vase-shaped and rounded forms of the trees shown in KOP 3 forms a pleasing and relatively cohesive viewshed that provides views of open space and heavy tree cover in the distance, and a sense of relief from the surrounding urban development.



KOP 3 – Looking south from the western edge of Westlake Parkway. The proposed school site and access road, currently covered with grasses and ruderal vegetation, are visible in foreground views. Landscape trees along the Westlake subdivision property line are also visible in the foreground on the left side of this view. Middleground and background views consist of power poles along Del Paso Road, vegetation and housing in the Natomas Central residential subdivision south of Del Paso Road, and vegetation at the north end of Fisherman's Lake to the southwest.

A double-wide green metal gate is located south of the project site approximately 225 feet east of the proposed access road; this gate currently provides access to the property from the westbound lanes of Del Paso Road. The Natomas Central residential development is located on the south side of Del Paso Road, immediately opposite the location of the proposed new access road for the school site from Del Paso Road. Houses along Suez Canal Lane and Euboca Island Lane in the Natomas Central development, on the south side of Del Paso Road, are approximately 100 feet from the proposed school entrance and approximately 1,500 feet (0.25 mile) from the proposed location of the school itself. The houses are separated from Del Paso Road by a 6-foot-high white stucco wall with heavy landscape cover between the road and houses (including tall trees). Therefore, these residences do not have views of the project site. However, residents of this development have views of the project site when

exiting the development on Hovnanian Drive. Recreationists and motorists also have views of the project site from Del Paso Road. Existing views of the proposed access road and school site from Hovnanian Drive are illustrated by KOP 4. The viewshed is dominated by the intruding horizontal and vertical man-made elements in the foreground, including dark-colored asphalt pavement, power poles, electrical transmission lines, traffic signals, and signage on Del Paso Road, and white houses with red roofs in the Westlake development to the east. These elements contrast strongly with the cultivated hay crop at the project site and the linear forms of scattered trees along the West Drainage Canal in the background, resulting in a lack of harmony and cohesion in the viewshed.



KOP 4 – Looking north from Hovnanian Drive. Del Paso Road, power poles, electrical transmission lines, traffic signals, and signage are visible in the foreground. The project site, and houses and landscaping in the Westlake subdivision to the east, are visible in the middleground. Scattered trees along the West Drainage Canal are visible in the background.

The project site is approximately 1,500 feet northeast of the northern end of Fisherman’s Lake Parkway, which includes a Class I pedestrian/bicycle trail with landscaping, interpretive signs, native plantings, vegetated swales, and an interpretive area with a seat wall. Fisherman’s Lake is surrounded by heavy tree cover and lower-growing shrubs, which is generally green in the spring, summer, and fall, and brown in the winter. The northern portion of the parkway ends at Del Paso Road, where recreationists at the end of the parkway have partial views of the project site to the northeast (see KOP 5). The west side of the parkway has been landscaped with grasses, trees, and shrubs. The end of the trail is marked by a street lamp; a tall, black, open metal fence with vertical bars; and a white stucco building that houses pumping equipment. In addition to these elements, the viewshed from this portion of the trail includes dark-colored asphalt pavement and weeds, vertical wood power poles, and horizontal electrical transmission lines along Del Paso Road. These man-made elements in the foreground form a strong contrast with the project site, and they tend to dominate the viewshed; as a result, the more natural-appearing hay field at the project site and scattered trees along the West Drainage Canal tend to recede into the background.



KOP 5 – Looking north from the north end of the Fisherman’s Lake Parkway Trail. Asphalt pavement associated with the end of the trail and Del Paso Road, a black metal gate, a building housing pump equipment, landscaping, a street lamp, and a power pole/electrical transmission line are visible in the foreground. The project site, the West Drainage Canal East Levee, and scattered trees along the canal, are visible in the middleground. Vehicles traveling on I-5 are visible in the background.

An earthen embankment approximately 4–8 feet above ground level is located approximately 200 feet from the project site to the west and north. The top of the embankment has a gravel surface road that is used for levee maintenance and informal recreation activities such as hiking, biking, and birdwatching. The RD 1000 West Drainage Canal is located on the opposite side of the embankment to the west and north. Scattered trees and shrubs are present along the west bank of the canal (see Exhibit 3.1-1), is generally free of vegetation other than low-growing weeds and grasses. Habitat conservation lands managed by TNBC are located west of the project site, on the opposite side of the West Drainage Canal. Views of the project site from the West Drainage Canal East Levee (west of the project site) are represented by KOP 6. The viewshed for informal recreationists using the top of the West Drainage Canal embankment is the same as described above: the flat, low-lying project site covered with grasses that are cultivated for hay, and housing and associated landscaping that fills the skyline to the northeast, east, and southeast. Water in the drainage canal, scattered trees, agricultural buildings, and flat, cultivated agricultural land to the north and west as viewed from the levee crown are typical of rural open space land throughout Sacramento County, and provide the viewer with the impression of a limitless horizon to the north and west.



KOP 6 – Looking northeast from the West Drainage Canal East Levee. The levee crown road, low-growing vegetation on both sides of the levee, and water in the canal are visible in the foreground. The project site is visible in the middleground to the east, and agricultural land managed by TNBC for habitat is visible in the middleground to the west. An existing agricultural drainage from the hay fields into the canal is visible in the canal in the middleground, along with scattered trees on the west bank of the canal and power poles between the project site and the adjacent agricultural field to the north. Residential housing in the Westlake subdivision, and vehicles traveling on I-5, are visible in the background.

Agricultural fields are present north and northwest of the project site, between the West Drainage Canal and I-5. An abandoned pump station at the eastern edge of the drainage canal is located approximately 225 feet from the northern school site boundary. The viewshed to the north includes a flat agricultural field covered with grasses cultivated for hay; a dirt/gravel access road with power poles, and the elevated embankment along the West Drainage Canal in the foreground; scattered trees, agricultural buildings, and agricultural buildings in the middleground; and vehicles traveling on I-5 in the background.

Viewer Sensitivity

Viewer sensitivity is considered high for all parts of the project site. Residents in housing developments to the east and south of the project site have either full or partial views of the project site at distances ranging from 200 to 1,500 feet. The project study area is also frequented by recreationists engaged in hiking, bicycling, and bird watching along the City of Sacramento greenbelt and pedestrian/bicycle trail to the northeast in Egret Park, West Drainage Canal embankment to the west, and Fisherman’s Lake Parkway to the southwest. In general, as a viewer group, people engaged in recreational activities generally have a heightened awareness of their surroundings, are familiar with the scenic resources in the area, and are generally seeking an experience in a natural setting. Finally, Del Paso Road provides views of the West Drainage Canal, Fisherman’s Lake, and rural agricultural land to the west and north, and therefore motorists accessing the adjacent residential housing and recreationists traveling along this roadway have a higher sensitivity to visual change. Given the above considerations, viewer sensitivity is considered high for all groups viewing the various project components.

Visual Quality

Vividness

The flat land at the project site is composed solely of grasses and low-growing ruderal vegetation that is green during the growing season and brown during the remainder of the year. Due to the close proximity of existing housing to the viewer, views are dominated by housing east and south of the project site. Views of scattered trees and agricultural buildings to the north and west, along with flat agricultural land cultivated in row crops, are typical of rural agricultural land throughout the Sacramento area. The viewshed is typical of a developing area where rural, open space meets urban development. Considered as a whole, the viewshed does not form a striking or distinctive visual pattern, and therefore vividness at the project site is considered low.

Intactness

The land at the project site is cultivated with grasses grown for hay, and therefore provides a typical view of Natomas Basin farmland. The project site itself is free from intrusive elements such as buildings, roads, or overhead power lines. However, as described above, the project site is bordered by housing to the east; and power poles, overhead electrical transmission lines, housing, and Del Paso Road to the south, at distances ranging from 200–1,500 feet. These man-made elements intrude into the viewshed and are inconsistent with the surrounding open space and agricultural land. Thus, there is a moderate degree of visual integrity of the natural and human-built landscape in the project viewshed.

Unity

The close proximity of the existing housing in the foreground views tends to dominate the viewshed, and since it fills the skyline to the east and south, it represents a stark contrast to the rural agricultural nature of lands to the northwest, west, and southwest. The eye of the viewer tends to be drawn towards the housing rather than toward the open views of agricultural land to the west and north. Views of the project site from the east and north have a high degree of visual coherence and compositional harmony, while views of the project site from the south and west have a moderate degree of visual coherence and compositional harmony. Considered as a whole, the viewshed is considered to have a moderate degree of unity.

In summary, considering the low degree of vividness and moderate degree of intactness and unity, the project viewshed is considered to be of moderate visual quality.

3.1.3 REGULATORY CONTEXT

FEDERAL PLANS, POLICIES, REGULATIONS, AND LAWS

No federal plans, policies, regulations, or laws related to aesthetics apply to the proposed project.

STATE PLANS, POLICIES, REGULATIONS, AND LAWS

No State plans, policies, regulations, or laws related to aesthetics apply to the proposed project.

REGIONAL AND LOCAL PLANS, POLICIES, REGULATIONS, AND ORDINANCES

Sacramento County General Plan

While not directly applicable to the project, the *County of Sacramento General Plan of 2005–2030* (County General Plan) Land Use Element (Sacramento County 2017a) identifies policies related to aesthetics that are presented for context.

- ▶ **Policy LU-18:** Encourage development that complements the aesthetic style and character of existing development nearby to help build a cohesive identity for the area.
- ▶ **Policy LU-27:** Provide safe, interesting and convenient environments for pedestrians and bicyclists, including inviting and adequately-lit streetscapes, networks of trails, paths and parks and open spaces located near residences, to encourage regular exercise and reduce vehicular emissions.
- ▶ **Policy LU-31:** Strive to achieve a natural nighttime environment and an uncompromised public view of the night sky by reducing light pollution.
- ▶ **Policy LU-102:** Ensure that the structural design, aesthetics and site layout of new developments is compatible and interconnected with existing development.

Sacramento Countywide Design Guidelines

As with the General Plan, the *Sacramento Countywide Design Guidelines* do not directly apply to the proposed project (Sacramento County 2017b). Highlights of design guidance are listed below for context.

- ▶ The interface of office, business park, institutional, and industrial developments with other types of uses, particularly residential, should be planned carefully. The transition in scale, use, visual privacy, noise, odors, operational hours, and traffic flow should respect the needs and livability of adjacent neighborhoods.
- ▶ Architectural materials should convey an image of high quality and durability. Preferable facade materials include plaster, articulated pre-cast concrete panels, certain metals, such as steel and aluminum, natural stone, and masonry (e.g., brick, tile, and glass block). Curtain wall systems with large continuous surfaces are discouraged...
- ▶ Mature trees, rock outcrops, creeks, and other desirable natural site features shall be preserved and incorporated into the landscape plan to the greatest extent possible. Building placement and configuration shall protect any heritage and landmark trees.
- ▶ Projects located adjacent to open space, creeks, and wetlands should integrate these natural features into the project design. Views and the location of outdoor patios, plazas, or eating areas should be considered in the context of the site's natural features. The project landscape theme and plantings should be coordinated and consistent with adjoining natural areas. If an existing or proposed trail exists, coordinate a connection and easement from the project to the trail. A vegetative buffer should be preserved or created to treat off-site runoff before it reaches the natural area.

- ▶ Window glass should be lightly tinted or clear. Reflective and very deeply tinted glass is discouraged. Windows should be oriented or shaded to minimize heat transfer from summer sun. Provide natural lighting features where possible.
- ▶ Reflective materials, such as mirrored glass and unpainted steel siding or roofs, are discouraged.
- ▶ Every project should have an overall lighting plan for pedestrian pathways, architectural lighting, lobbies and entryways, parking lots, and service areas.
- ▶ Lighting plan design guidelines (Sacramento County 2017b) include the following:
 - ▶ Spillover lighting that is visible from outside the site should be avoided by orienting fixtures downward or shielding light.
 - ▶ Low, pedestrian-scaled fixtures are encouraged to help identify and light pedestrian routes.
 - ▶ Lighting in service areas should be the minimum required for operation, and should be designed to minimize the visibility to those areas, while providing for a safe environment. Motion controlled lighting is recommended.
 - ▶ Lighting should be light-emitting diode (LED) lights or other acceptable high energy efficiency light, with automatic controls to dim lights after certain hours or when no one is present. Lighting shall be adequate to provide for a safe environment.
 - ▶ Provide energy efficient lighting in all common areas and buildings, including pedestrian and vehicular routes. The emphasis should be on personal safety, with lighting landscape or building surfaces secondary.

3.1.4 ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

Based on Appendix G of the CEQA Guidelines, the proposed project would have a significant impact related to aesthetics if it would:

- ▶ have a substantial adverse effect on a scenic vista;
- ▶ substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings, within a State scenic highway;
- ▶ substantially degrade the existing visual character or quality of the site and its surroundings; or
- ▶ create a new source of substantial light or glare that would adversely affect day or nighttime views in the area.

ANALYSIS METHODOLOGY

The aesthetic value of an area is a measure of the variety and contrast of the area’s visual features, the character and quality of those features, and the scope and scale of the scene, combined with the anticipated viewer response. The analysis of visual resources for this project uses a qualitative approach for characterizing and evaluating the

visual resources of the areas that could be affected by the project. Identification of the project's aesthetics effects were based on the three steps listed below.

1. An objective inventory of the visual features or visual resources that comprise the landscape.
2. An assessment of the character and quality of the visual resources in the context of the overall character of the regional visual landscape.
3. A determination of the importance to viewers (i.e., sensitivity of the viewers) and the potential viewer response, to the identified visual resources in the landscape.

The above factors were considered in combination with the proposed project elements, and the type and duration of anticipated construction activities.

ISSUES NOT EVALUATED FURTHER IN THIS DEIR

Substantial Damage to Scenic Resources within a State- or Locally-Designated Scenic Highway: State Route 160, approximately 9 miles southeast of the project site, is the closest State-designated scenic highway (Caltrans 2017). Garden Highway, which is approximately 1 mile southwest of the project site, is the closest locally-designated scenic highway (Sacramento County 2017a). Because the project site is not visible from either of these scenic highways, there would be no impact, and this issue is not evaluated further.

IMPACT ANALYSIS

IMPACT **Adversely Affect a Scenic Vista or Degrade the Existing Visual Character or Quality of the Project Site.**
3.1-1 *The proposed project would substantially change the existing visual character from open space to developed school facilities and related improvements. The proposed project would be visually incompatible with surrounding rural agricultural and managed wetlands to the north, west, and southwest. This impact is considered **significant**.*

As discussed in Chapter 2, "Project Description," NUSD requested a site review by Sacramento County under Public Resources Code Section 21151.2. On December 12, 2006, the Sacramento County Planning Commission held a hearing regarding the proposed site acquisition and on January 2, 2007, issued a letter to NUSD¹ stating that the Commission "*has determined that the proposed acquisition is consistent with the County General Plan and is appropriate for acquisition by the School District.*"

Recreationists at the western end of the pedestrian/bicycle trail through Egret Park have unobstructed views of the project site looking southwest. Views from this location consist primarily of agricultural fields and scattered agricultural buildings, water and trees along the West Drainage Canal, and heavy tree cover to the southwest at the northern end of Fisherman's Lake. The viewshed for recreationists from this location is typical of rural agricultural and open space land throughout Sacramento County. The proposed project would block views for recreationists from this location to the west and south, and views of rural open space and vegetation would be replaced by school buildings, playfields, parking lots, access roads, and associated landscaping including shrubs, grass, and trees.

¹ Letter from Faith Grunwaldt, Sacramento County Policy Planning Commission, to Frank Harding, NUSD Director of Facilities. January 2, 2007.

The two-story homes along the west side of Hawkcrest Circle in the Sterling Cove residential development have unobstructed views of the project site from the upper floors. Views from lower floors are partially blocked by existing landscaping within each lot. Views from the ground floor of two houses on Hawkcrest Circle that are across the street from the proposed pedestrian/bicycle/emergency access route (to the northeast) are blocked by a solid, 6-foot-tall fence along the backyards; views from the upper floors are partially blocked by landscape trees. Views of the proposed pedestrian/bicycle/emergency access route from the backyards of the two homes on Agnell Court (to the south) are partially blocked by a wooden, 6-foot-tall fence and existing trees. Most homes in the Westlake subdivision south of the school site face the proposed access road (e.g., along Clarewood Way), and generally have unobstructed views of the proposed access road to the west and the proposed school site to the northwest. As described above, the proposed project would block views for these residents in the Westlake subdivision to the west and north, and views of rural open space and vegetation would be replaced by urban development consisting of school buildings, playfields, parking lots, access roads, and associated landscaping including shrubs, grass, and trees.

The viewshed from residences in the Natomas Central development to the south already consists primarily of urban development, including Del Paso Road to the north, housing within the Natomas Central development to the east, and the Westlake development to the northeast. Furthermore, residences along Suez Canal Lane and Euboca Island Lane are separated from Del Paso Road by a 6-foot-high white stucco wall, which blocks views to the north. However, these residents would have full views of the proposed access road in the foreground and the school buildings and facilities in the middleground as they are exiting the development on Hovnanian Drive. Views of open space and vegetation would be replaced by school buildings, playfields, parking lots, access roads, and associated landscaping including shrubs, grass, and trees.

Recreationists at the northern end of the Fisherman's Parkway Trail have partial views of the project site looking north. The fallow land at the project site, when viewed with the scattered trees and agricultural buildings to the west and north, forms a pleasing viewshed of open space indicative of open space throughout the Sacramento region. Similarly, recreationists informally using the levee crown along the West Drainage Canal west of the project site have views of fallow land at the project site, as well as to the north and west. However, views of open space and vegetation to the north from the northern end of the Fisherman's Parkway Trail and to the north and east of the West Drainage Canal levee crown would be replaced by school buildings, playfields, parking lots, access roads, and associated landscaping including shrubs, grass, and trees.

As described above, the project site has a moderate degree of visual quality. The project site itself is a flat parcel of fallow former agricultural land. Views to the east and south are blocked by existing urban development. Views to the north and west, although pleasing, are typical of rural open space and agricultural land throughout Sacramento County. When considered together as a whole, the project viewshed does not represent a scenic vista.

However, considering the project's existing moderate degree of visual quality and high degree of visual sensitivity for surrounding residents and recreationists, and considering the site's continuity with adjacent open space and agricultural land to the west and north, conversion of the project site from open space and the resulting blockage of views of rural agricultural land and managed wetlands to the southwest, west, and north would degrade the existing visual character and quality. Therefore, this impact is considered **significant**.

Mitigation Measure

No feasible mitigation measures are available.

Significance after Mitigation

There are no feasible mitigation measures available that would reduce the change to existing visual quality and character to a less-than-significant level while still achieving the project objectives. Therefore, this impact would remain **significant and unavoidable**.

IMPACT 3.1-2 **Light and Glare and Skyglow Effects.** *The proposed project would require nighttime lighting of new school facilities for security purposes near sensitive receptors, which could cause increased light and glare and skyglow effects. This impact would be **potentially significant**.*

Under current conditions, there are no sources of light or glare that are generated on the project site. However, spillover nighttime lighting does occur from residences in the adjacent Westlake development to the east, and Del Paso Road and the Natomas Central development to the south. Because of this existing urban development to the east and south, the project site is not located in a “dark sky” area. The school would introduce minor new sources of nighttime lighting for security purposes associated with the buildings and facilities, access road, parking lots, and entryways. However, the outdoor sports fields would not have lighting for nighttime use. NUSD encourages joint use of its facilities for neighborhood activities, and such activities could take place during the evening hours inside the school buildings, which could create short-term temporary sources of nighttime light and glare from vehicle headlights on the access road and in the parking areas.

The project site is approximately 2 miles from the nearest runway at the Sacramento International Airport, and is located within Referral Area 1 (Sacramento Area Council of Governments [SACOG] 2013: Map 1). An Airport Referral Area is an area in which current or future airport-related noise, overflight, safety, or airspace protection factors may affect land uses or necessitate restrictions on those uses, and therefore certain land use proposals are to be referred to the Airport Land Use Commission (ALUC) for review.² Projects within Referral Area 1 that include lighting which could be mistaken for airport lighting and/or could cause glare in the eyes of pilots of aircraft using the airport, require review by the ALUC. As discussed in Chapter 2, “Project Description,” CDE obtained a Caltrans Division of Aeronautics evaluation of the school’s proximity to the airport, and the evaluation found that the school site provides an appropriate level of safety (Miles 2006).

A minor amount of nighttime lighting would occur at the project site – security lighting for buildings, parking lots, and along the access road. Furthermore, the proposed project would be constructed adjacent to a developed urban area (to the east and south) where nighttime security lighting is already present, and the outdoor sports fields at the proposed school site would not be lit and would not be used after dark. However, without a lighting plan, nighttime security lighting could result in light spillover onto adjacent properties, and could result in nighttime glare and skyglow effects. Therefore, this impact is considered **potentially significant**.

Mitigation Measure 3.1-2: Prepare and Implement a Lighting Plan.

To reduce impacts associated with light and glare, NUSD shall prepare and implement a lighting plan for the proposed project that includes the following elements:

² ALUC staff have reviewed the proposed project and concluded that the athletic fields are conditionally allowed, and that the school facilities are allowed (as placed in Safety Zone 6) and that the ALUC will accept the sound attenuation construction standards that will be incorporated into the proposed project (SACOG 2018).

- Shield or screen lighting fixtures to direct the light downward and prevent light spill on adjacent properties.
- Place and shield or screen flood and area lighting needed for security so as not to disturb adjacent residential areas and passing motorists.
- Light fixtures that are of unusually high intensity or brightness (e.g., harsh mercury vapor, low-pressure sodium, or fluorescent bulbs) or that blink or flash, shall not be used. LED lighting shall be used where feasible.
- Motion-controlled exterior nighttime lighting, rather than lighting that is always on, shall be used where feasible.
- Use appropriate building materials (such as low-glare glass, low-glare building glaze or finish, neutral, earth-toned colored paint and roofing materials), shielded or screened lighting, and appropriately shielded lighting for signage, to prevent light and glare from adversely affecting adjacent housing and motorists on nearby roadways.

Significance after Mitigation

Implementation of Mitigation Measure 3.1-2 would reduce potentially significant impacts from nighttime lighting, glare, and skyglow effects to a **less-than-significant** level because a lighting plan with measures specifically designed to reduce light spillover, glare, and skyglow effects would be prepared and implemented by NUSD.

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3.2 AGRICULTURAL RESOURCES

This section addresses agricultural resources within the project site and surrounding areas. It describes Sacramento County’s agricultural land uses; describes the significance, quality, and extent of agricultural land on-site and within the county, including Important Farmland; and describes the factors that could potentially contribute to the conversion of irrigated agricultural land to non-irrigated uses.

Additional information on adjacent agricultural land uses and potential land use conflicts are evaluated in Section 3.10, “Land Use and Planning.”

3.2.1 EXISTING CONDITIONS

The approximately 34-acre project site is located in northwestern Sacramento County, approximately 1 mile east of the Sacramento River. Historically, the site was used for agricultural crop production including wheat, barley, and rice. The last year of rice production was 2002. In 2006 and 2007, the site was in wheat production. Since the site has been owned by the school district, grass hay (oat and rye) has been grown on the site, and it has been cut periodically.

Surrounding land uses include agriculture to the north, residential development to the east, a fallow agricultural parcel owned by West Lakeside LLC to the south. The Natomas Basin Conservancy’s (TNBC’s) Rosa East tract – directly to the west – comprises three agricultural fields totaling 106 acres that are planted with alfalfa and are part of TNBC’s Fisherman’s Lake Reserve (TNBC 2016).

SACRAMENTO COUNTY FARMLAND CONVERSION

Table 3.2-1 summarizes acreages of agricultural land in Sacramento County between 2004 and 2016 and shows the net change in acreage over that 10-year period. The Department of Conservation estimated that Sacramento County included 384,653 acres of agricultural land in 2004, of which 221,480 acres (57.6 percent) were classified as Important Farmland (see Section 3.2.3) and 163,173 acres (42.4 percent) were classified as Grazing Land (DOC 2016a). Overall, the total acreage of Important Farmland decreased by approximately 4 percent over the 10 years between 2006 and 2016 and the total acreage of agricultural land decreased by 3 percent (Table 3.2-1).

Table 3.2-1. Summary of Agricultural Land Conversion in Sacramento County							
Important Farmland Category	Acres				Net Change (2006–2016)	Net Change (2010–2016)	Net Change (2014–2016)
	2006	2010	2014	2016			
Prime Farmland	106,667	97,476	91,568	90,691	-15%	-7%	-1%
Farmland of Statewide Importance	51,217	45,264	43,105	43,342	-15%	-4%	1%
Unique Farmland	15,268	15,076	15,125	15,540	2%	3%	3%
Farmland of Local Importance	41,961	53,928	58,852	57,910	38%	7%	-2%
Important Farmland Subtotal	215,113	211,744	208,650	207,483	-4%	-2%	-1%
Grazing Land	156,977	155,822	153,452	153,174	-2%	-2%	0%
Agricultural Land Total	372,090	367,566	362,102	360,657	-3%	-2%	0%

Source: DOC 2006, 2010, 2016a

The Department of Conservation field reports for Sacramento County identify the factors contributing to changes in agricultural land uses. Between 2004 and 2008, most of the conversion of irrigated Important Farmland (i.e., Prime Farmland, Farmland of Statewide Importance, or Unique Farmland) was to urban land uses in the cities of Elk Grove, Rancho Cordova, Folsom, and Galt, and in the Natomas area of Sacramento (DOC 2014a). By 2010, idling of irrigated farmland became a major factor in the conversion of Important Farmland, exceeding the effect of urbanization.

According to the Department of Conservation's most recent 2016 Field Report, Conversion of Important Farmland to Other Land resulted from land that was left idle for three or more update cycles, the construction of rural residences and commercial uses, and restoration of Twitchell Island (DOC 2016b). Conversions of Important Farmland to Urban Land resulted from development of new homes in the cities of Elk Grove, Rancho Cordova, and Sacramento; new commercial uses in the city of Sacramento; and new homes, sports fields, and the addition of a new spillway in the city of Folsom. Conversely, Important Farmland increased mainly from new vineyards and orchards in the southern part of Sacramento County (DOC 2016b).

The Sacramento County Important Farmland map, published by Department of Conservation's Division of Land Resource Protection, designates the entire project site as Farmland of Local Importance (DOC 2016c).¹ Exhibit 3.2-1 shows the farmland classifications for the proposed school site and surrounding area.

WILLIAMSON ACT CONTRACT LANDS

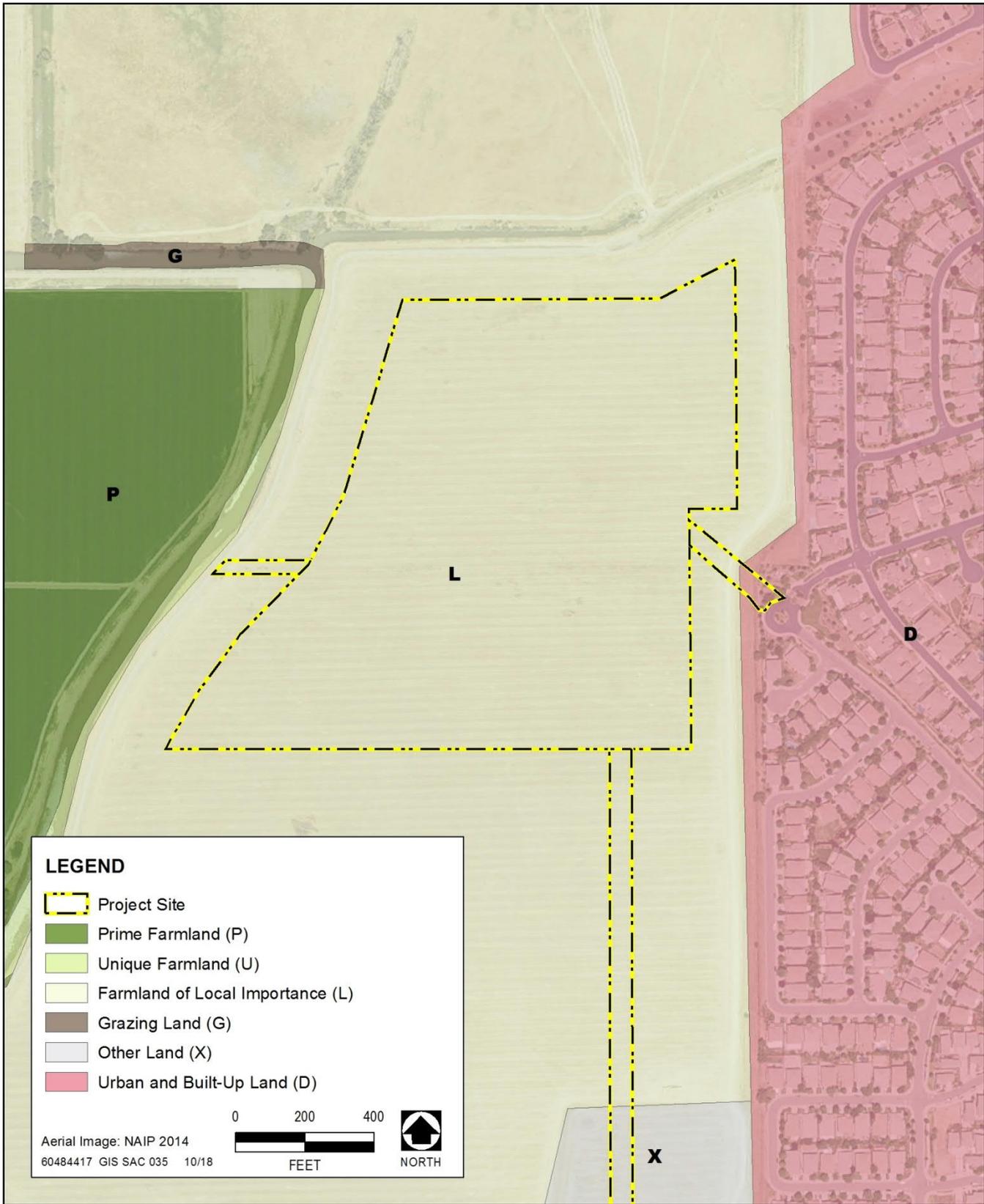
Under the California Land Conservation Act of 1965, also known as the Williamson Act, local governments can enter into contracts with private property owners to protect land (within agricultural preserves) for agricultural and open space purposes.² The amount of land in Sacramento County under Williamson Act contract (see Section 3.2.3) is decreasing. Between 2000 and 2015 (the most recent data year available), the area of Williamson Act contract lands in Sacramento County decreased from 187,102 to 174,656, or 7.1% (DOC 2016d).

The nonrenewal process is the most common mechanism for termination of Williamson Act contracts, and most Williamson Act contracts are terminated through this process. In Sacramento County as of 2015, approximately 10,306 acres were in some stage of the nonrenewal process and the amount of contract land terminated through nonrenewal expirations totaled approximately 1,123 acres (DOC 2016c).

The project site was previously held under Williamson Act contract; however a notice of nonrenewal was filed in February 1976 (76-AP-016) and the contract expired in April 1986 (Mueller, pers. comm., 2017). The parcel (225-0020-012-000) located west of the project site (and across the West Drainage Canal) is under a Williamson Act contract (Exhibit 3.2-2). This parcel is conservation land operated by TNBC for agricultural uses and habitat management as mitigation for development permitted under the Natomas Basin Habitat Conservation Plan (NBHCP). No other adjacent parcels are under Williamson Act Contract.

¹ Farmland of Local Importance is land of importance to the local economy, as defined by each county's local advisory committee and adopted by its Board of Supervisors. Sacramento County defines Farmland of Local Importance as lands which do not qualify as Prime, Statewide, or Unique designation but are currently irrigated crops or pasture or nonirrigated crops; lands that would be Prime or Statewide designation and have been improved for irrigation but are now idle; and lands which currently support confined livestock, poultry operations, and aquaculture.

² Sacramento County does not participate in the expanded version of the Williamson Act, known as the Farmland Security Zone Act.



Source: DOC 2016d

Exhibit 3.2-1 Important Farmland



Source: Department of Conservation, Williamson Act GIS layer, 2009; Department of Conservation, Williamson Act Map for Sacramento County, 2015-2016; Sacramento County 2017.

Exhibit 3.2-2 Williamson Act Contracts

AGRICULTURAL ZONING

The project site and adjacent lands directly north, south, and west of the site are designated in the County's General Plan as Agricultural Cropland and zoned by the County as AG-80 (Agricultural, 80-acre minimum). The AG-80 zoning designation is used to eliminate the encroachment of land uses incompatible with the long term agricultural use of land, to preserve the maximum amount of the limited supply of agricultural land in order to conserve the County's economic resources that are vital for a healthy agricultural economy, to discourage the premature and unnecessary conversion of agricultural land to urban uses, and to encourage the retention of sufficiently large agricultural lots to assure maintenance of viable agricultural units (Sacramento County 2017).

3.2.2 REGULATORY CONTEXT

FEDERAL AND STATE PLANS, POLICIES, REGULATIONS, AND LAWS

California Important Farmland Inventory System and Farmland Mapping and Monitoring Program

The Farmland Mapping and Monitoring Program (FMMP) was established by the State of California in 1982 to continue the Important Farmland mapping efforts begun in 1975 by the Soil Conservation Service (now NRCS). The California Department of Conservation implements the FMMP and establishes agricultural easements in accordance with California Public Resources Code Sections 10250–10255.

The California Department of Conservation FMMP maps are updated every 2 years using aerial photographs, a computer mapping system, public review, and field reconnaissance. The following list describes the categories mapped by the California Department of Conservation:

- ▶ **Prime Farmland**—Land that has the best combination of features for the production of agricultural crops.
- ▶ **Farmland of Statewide Importance**—Land other than Prime Farmland that has a good combination of physical and chemical features for the production of agricultural crops.
- ▶ **Unique Farmland**—Land of lesser quality soils used for the production of the state's leading agricultural cash crops.
- ▶ **Farmland of Local Importance**—Land that is of importance to the local agricultural economy.
- ▶ **Grazing Land**—Land with existing vegetation that is suitable for grazing.
- ▶ **Urban and Built-up Lands**—Land occupied by structures with a density of at least one dwelling unit per 1.5 acres.
- ▶ **Land Committed to Nonagricultural Use**—Vacant areas; existing lands that have a permanent commitment to development but have an existing land use of agricultural or grazing lands.
- ▶ **Other Lands**—Land that does not meet the criteria of the remaining categories.

Important Farmland is classified by the California Department of Conservation as Prime Farmland, Farmland of Statewide Importance, Farmland of Local Importance, and Unique Farmland. Under CEQA, the designations for Prime Farmland, Farmland of Statewide Importance, and Unique Farmland are defined as “agricultural land” or

“farmland” (Public Resources Code Sections 21060.1 and 21095; CEQA Guidelines Appendix G). The project site is designated as Farmland of Local Importance.

Williamson Act Contracts

The California Land Conservation Act of 1965, commonly known as the Williamson Act, enables local governments to form contracts with private landowners to promote continued agricultural or related open space uses. In return, landowners receive property tax assessments that are based on farming and open space uses rather than full market value and development potential. Local governments receive an annual subvention (subsidy) of forgone property tax revenues from the state via the Open Space Subvention Act of 1971. The contracts are annually renewable and may restrict the land to agricultural use for at least 10 years.

The landowner may end the contract by submitting a Notice of Nonrenewal, which starts a nine-year nonrenewal period during which the annual tax assessment continually increases until it is equivalent to current tax rates. The contract is then terminated. Contract cancellation involves an extensive review and approval process. In addition, the landowner may be required to pay a fee of up to 12.5 percent of the property value. The local jurisdiction approving the cancellation must find that the cancellation is consistent with the purpose of the California Land Conservation Act or is in the public interest (California Government Code Section 51282).

An expanded version of the Williamson Act, known as the Farmland Security Zone (FSZ) Act, was enacted in 1998. An FSZ contract offers landowners greater property tax reduction in return for an initial contract term of 20 years, with renewal occurring automatically each year. Land restricted by an FSZ contract is valued for property assessment purposes at 65 percent of its land conservation act valuation, or 65 percent of its Proposition 13 valuation, whichever is lower. Sacramento County does not participate in the FSZ program.

California Department of Education Agricultural Findings

California Education Code Section 17215.5 requires that, before a school district begins the acquisition of real property for a new school site in an area designated in a city, county, or city and county general plan for agricultural use and zoned for agricultural production, the governing board of the school district must make all of the following findings:

- ▶ The school district has notified and consulted with the city and/or county within which the prospective school site is to be located.
- ▶ The final site selection has been evaluated by the governing board of the school district based on all factors affecting the public interest and not limited to selection on the basis of the cost of the land.
- ▶ The school district will attempt to minimize any public health and safety issues resulting from the neighboring agricultural uses that may affect the pupils and employees at the school site.

California Public Resources Code Sections 6690-6693 of Title 3 (Pesticide Use near School Sites)

Sections 6690-6693 of the California Code of Regulations applies to pesticide applications made for the production of an agricultural commodity within one-quarter mile of a school site. The regulations prohibit the application of agricultural pesticides from 6 a.m. to 6 p.m., Monday through Friday. These regulations apply to

crop dusters flying over fields, air blasters spraying orchards and fumigants, and most dust and powder pesticides that could be blown onto school grounds by the wind.

In addition, these regulations require agriculture operators to provide written notification to school principals and the county agricultural commissioner of the pesticides expected to be used on an annual basis.

REGIONAL AND LOCAL PLANS, POLICIES, REGULATIONS, AND ORDINANCES

Sacramento County General Plan

The following Sacramento County General Plan of 2005–2030 (Sacramento County 2011) (General Plan) policies from the Agricultural Resources Element are applicable to agricultural resources:

- ▶ **AG-1.** The County shall protect prime, statewide importance, unique and local importance farmlands located outside of the USB from urban encroachment.
- ▶ **AG-5.** Projects resulting in the conversion of more than fifty (50) acres of farmland shall be mitigated within Sacramento County, except as specified in the paragraph below, based on a 1:1 ratio, for the loss of the following farmland categories through the specific planning process or individual project entitlement requests to provide in-kind or similar resource value protection (such as easements for agricultural purposes):
 - prime, statewide importance, unique, local importance, and grazing farmlands located outside the USB;
 - prime, statewide importance, unique, and local importance farmlands located inside the USB.

The Board of Supervisors retains the authority to override impacts to unique, local, and grazing farmlands, but not with respect to prime and statewide farmlands. However, if that land is also required to provide mitigation pursuant to a Sacramento County endorsed or approved Habitat Conservation Plan (HCP), then the Board of Supervisors may consider the mitigation land provided in accordance with the HCP as meeting the requirements of this section including land outside of Sacramento County. Note: This policy is not tied to any maps contained in the Agricultural Element. Instead, the most current Important Farmland map from the Department of Conservation should be used to calculate mitigation.

North Natomas Community Plan

The Westlake residential development east of the project site is within the City of Sacramento’s North Natomas Community Plan area (City of Sacramento 2015). The *North Natomas Community Plan* (City of Sacramento 2015) was adopted in 1994 and is included as a distinct section within the adopted City General Plan. The following policy from the *North Natomas Community Plan* (City of Sacramento 2015:3-NN-37) is related to agricultural resources:

- ▶ **Policy NN.ERC 1.10:** 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.

3.2.3 ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

ANALYSIS METHODOLOGY

The evaluation of potential impacts on agricultural resources was based on a review of the planning documents pertaining to the project site and vicinity, including relevant policies; field reconnaissance; and consultation with the relevant State and local agencies. In addition, the Department of Conservation Important Farmland map and Williamson Act Contract map for Sacramento County was used to determine the agricultural significance of the lands on the project site.

Appendix G of the CEQA Guidelines focuses the analysis on conversion of agricultural land on Prime Farmland, Farmland of Statewide Importance, or Unique Farmland; therefore, any conversion of these lands would be considered a significant impact under CEQA. In addition, Sacramento County has adopted a threshold defining the conversion of over 50 acres of prime, statewide importance, unique, local importance, and grazing farmlands located outside the Urban Services Boundary to nonagricultural uses as a significant environmental effect. These significance thresholds are used to determine if the conversion of Important Farmland is considered a significant impact.

THRESHOLDS OF SIGNIFICANCE

Based on Appendix G of the CEQA Guidelines, the proposed project would have a significant impact on agricultural resources if implementation of the proposed project would:

- ▶ convert Important Farmland (i.e., Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency), to nonagricultural use;
- ▶ conflict with existing zoning for agricultural use or a Williamson Act contract;
- ▶ conflict with existing zoning for, or cause rezoning of, forestland (as defined in Public Resources Code Section 12220[g]), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104[g]);
- ▶ result in the loss of forestland or conversion of forestland to nonforest use; or
- ▶ involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to nonagricultural use or conversion of forest lands to nonforest use.

IMPACTS NOT CONSIDERED FURTHER

Convert Important Farmland to Non-Agricultural Use—School facilities and playfields would be constructed on approximately 18 acres of the project site and the school’s main access road would cross the parcel to the south to form a new intersection with Hovnanian Drive. The remaining approximately 16 acres would remain undeveloped. Based on the Sacramento County Important Farmland map (FMMP 2016c) the entire project site is classified as Farmland of Local Importance (Exhibit 3.2-1). Farmland of Local Importance is not considered Important Farmland under CEQA (Public Resources Code Sections 21060.1 and 21095 and CEQA Guidelines Appendix G). In addition, conversion of 18 acres of Farmland of Local Importance would not exceed Sacramento County’s threshold of 50 acres outside of the Urban Services Boundary (Policy AG-5 of the Sacramento County General Plan). Furthermore, the proposed project would not result in the indirect conversion of Important Farmland. TNBC’s Rosa East tract is designated as Prime Farmland (Exhibits 3.2-1). The TNBC lands, including agricultural land, are managed in perpetuity for the benefit of the Swainson’s hawk and certain other habitat conservation plan covered species. Thus, no impact related to the direct or indirect conversion of Important Farmland would occur and this issue is not evaluated further.

Conflict with Existing Zoning for Agricultural Use—The project site is zoned by Sacramento County as AG-80 (Agricultural, 80-acre minimum). Under the Sacramento County Zoning Code, K-12 public schools are a permitted use (Sacramento County 2017:Table 3.1). Therefore, the proposed project would not conflict with existing zoning for agricultural use and this issue is not evaluated further.

Conflict with Existing Zoning for, or Cause Rezoning of, Forest Land, Timberland, or Timberland Zoned Timberland Production—The project site is not zoned as forestland, timberland, or a Timberland Production Zone. Thus, the proposed project would not conflict with existing zoning for, or cause rezoning of, forestry resources and this issue is not evaluated further.

Result in the Loss of Forest Land or Conversion of Forest Land to Non-Forest Use—The project site does not contain timberland as defined by Public Resources Code Section 4526 or contain 10% native tree cover that would be classified as forestland under Public Resources Code Section 12220(g). Thus, the proposed project would not result in conversion of forest land to non-forest use. Therefore, this issue is not evaluated further.

Conflict with Existing Williamson Act Contract—The project site was previously held under Williamson Act contract; however a notice of nonrenewal was filed in February 1976 (76-AP-016) and the contract expired in April 1986. Thus, the project site is not under Williamson Act contract (Exhibit 3.2-2). Therefore, this issue is not evaluated further.

IMPACT ANALYSIS

IMPACT 3.2-1 Conflicts with Existing Off-Site Agricultural Operations that Could Result in the Conversion of Farmland to Non-Agricultural Use. Implementation of the proposed project would locate school facilities adjacent to existing off-site agricultural lands, resulting in potential conflicts with adjacent agricultural operations. The proposed project would provide a setback of 300 feet or more from off-site agricultural operations; therefore, conflicts between school facilities and adjacent agricultural lands would be less than significant.

Agricultural operations currently occur along west of the project site, beyond the property adjacent and to the west of the project site, and beyond the West Drainage Canal. These agricultural operations occur within the TNBC's Rosa East tract. These agricultural fields are planted with alfalfa. Agricultural-urban interfaces have the potential for conflicts between agricultural practices and adjacent land uses. Health risks and nuisances potentially created by agricultural operations adjacent to the project site include, but are not limited to exposure to pesticide applications, exposure to dust (from soil preparation), and exposure to noise (from machinery and trucks). Conversely, school uses could create operational difficulties for agriculture from increased restrictions on agriculture processes. Development would add vehicular traffic in the vicinity of the project, which could make it somewhat more difficult to move agricultural equipment. However, there is not access from the project site to agricultural lands to the west and, therefore, the project would not add traffic to roadways currently used to move agricultural equipment in this area.

The TNBC lands, including agricultural land, are managed in perpetuity for the benefit of the Swainson's hawk and certain other habitat conservation plan covered species. TNBC strictly controls the use of pesticides on mitigation land and rarely allows pesticides to be used (TNBC 2004). All TNBC-directed pesticide use is under the direction of licensed Pest Control Applicators and applications are made in compliance with the label restrictions approved by California Department of Pesticide Regulation and U.S. Environmental Protection Agency (see Section 3.8, "Hazards and Hazardous Materials," for further discussion). In addition, TNBC does not use pesticide applications (i.e., crop dusters, air blaster spraying, chemigation sprinklers, or dust and powder pesticides) that are subject to regulations identified in Sections 6690-6693 of the California Code of Regulations. A 25-foot buffer is required for the pesticide applications used at TNBC property across the West Drainage Canal from the proposed school site. TNBC does not use aerial application, but instead a ground-rig sprayer with liquid that does not include dust, powder, or fumigant (Roberts, pers. comm., 2018). The annual reporting requirements Sections 6692 of the California Code of Regulations may apply, as well.

School facilities and agricultural uses on TNBC lands would be separated by the West Drainage Canal and the parcel that is adjacent to and west of the project site. The West Drainage Canal and adjacent property to the west provide an approximately 300-foot buffer between agricultural uses on TNBC lands and the school facilities. Subsequently, this buffer would reduce noise exposure associated with machinery and trucks used for agricultural uses. Considering existing applicable regulations, current practices, the distance between the project site and agricultural operations, and the lack of shared transportation routes by school traffic and agricultural equipment movements, impacts associated with land use conflicts created by agricultural operations adjacent to the project site would be **less than significant**.

Mitigation Measures

No mitigation measure is required.

3.3 AIR QUALITY

This section provides a summary of applicable air quality regulations at the federal, State, and local level; a description of existing local and regional air quality conditions; and an analysis of potential air quality impacts attributable to the proposed project.

3.3.1 ENVIRONMENTAL SETTING

TOPOGRAPHY, CLIMATE, AND METEOROLOGY

Air quality is defined by the concentration of pollutants in relation to their impact on human health. Ambient concentrations of air pollutants are determined by the amount of emissions released by pollutant sources and the ability of the atmosphere to transport and dilute such emissions. Terrain, wind, atmospheric stability, and the presence of sunlight all affect transport and dilution. Therefore, existing air quality conditions in the project area are influenced by topography, meteorology, and climate, in addition to the amount of emissions released by existing air pollutant sources (discussed separately below).

The project site is located within the Sacramento Valley Air Basin (SVAB). In general, the SVAB is relatively flat and bounded 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–San Joaquin Delta (Delta) from the San Francisco Bay Area.

The mountain ranges surrounding the SVAB reach heights of 6,000 feet and beyond at peaks, creating a physical barrier to airflow, which leads to the entrapment of locally generated air pollutants when meteorological conditions are unfavorable for transport and dilution, as well as pollution that might otherwise be transported northward on prevailing winds from the Sacramento Metropolitan area. Although a significant portion of the SVAB is located at an elevation of more than 1,000 feet above sea level, the vast majority of its populace lives and works below that elevation. The valley is often subjected to inversion layers that, coupled with geographic barriers and high summer temperatures, create a high potential for air pollution problems.

Poor air movement occurs most frequently in fall and winter when high-pressure cells are present over the project area and meteorological conditions are stable. The lack of surface winds during these periods, combined with the reduced vertical flow caused by less surface heating, reduces the influx of air and results in the concentration of pollutants. Surface concentrations of air pollutant emissions are highest when these conditions occur in combination with agricultural burning activities or temperature inversions, which hamper dispersion by creating a ceiling over the area and trapping air pollutants near the ground. The winds and unstable atmospheric conditions associated with the passage of winter storms result in periods of low air pollution and excellent visibility. Precipitation and fog also tend to reduce or limit some pollutant concentrations. However, between winter storms, high pressure and light winds contribute to low-level temperature inversions and stable atmospheric conditions, resulting in the concentration of air pollutants.

May through October is ozone season in the SVAB and is characterized by poor air movement in the mornings and 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 volatile organic compounds (VOC) and oxides of nitrogen (NO_x), which in turn result in ozone formation. Typically, the Delta breeze transports air pollutants northward out of the SVAB; however, during approximately half of the time from July to

September, a phenomenon known as the Schultz Eddy prevents this from occurring. The Schultz Eddy phenomenon causes the wind pattern to shift southward, blowing air pollutants back into the SVAB. This phenomenon exacerbates the concentration of air pollutant emissions in the air basin and contributes to violations of the ambient air quality standards.

The Mediterranean climate of the region is characterized by hot, dry summers and cool, rainy winters. The local meteorology of the project area is represented by measurements recorded at the Sacramento Executive Airport weather station (Station 047630). The normal annual precipitation, which occurs primarily from November through March, is approximately 17.24 inches (Western Regional Climate Center 2016). More than half the total annual precipitation falls during the winter rainy season (November–February), typically as a result from air masses that move in from the Pacific Ocean and travel across California from west to the east. The inland location and surrounding mountains typically confine the area from much of the ocean breezes that keep the coastal regions moderate in temperature. July temperatures range from an average minimum of 58.2°F to an average maximum of 92.7°F (WRCC 2016a). January temperatures range from an average minimum of 37.8°F to an average maximum of 53.5°F (WRCC 2016a). Characteristic of SVAB winter months 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 predominant wind direction and speed is from the south at approximately 8.0 mph, as measured at the Sacramento International Airport, approximately two miles northwest of the proposed project site (WRCC 2016b, c).

CRITERIA AIR POLLUTANTS

The U.S. Environmental Protection Agency (EPA) and the California Air Resources Board (ARB) have identified six air pollutants as being indicators of ambient air quality: ozone (O₃), carbon monoxide (CO), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), particulate matter with aerodynamic diameter less than 10 microns (PM₁₀), particulate matter with aerodynamic diameter less than 2.5 microns (PM_{2.5}), and lead. Because the ambient air quality standards for these air pollutants are regulated using human health and environmentally based criteria, they are commonly referred to as “criteria air pollutants” (EPA 2016a). In general, the State of California standards are more stringent – particularly for ozone and particulate matter (PM₁₀ and PM_{2.5}) – than the federal standards. The following section provides a brief description of criteria air pollutants, including its source types and health effects along with the most current attainment designations and monitoring data for the project area.

Ozone

Ozone is a colorless gas that is odorless at ambient levels. It exists primarily as a beneficial component of the ozone layer in the upper atmosphere (stratosphere), shielding the earth from harmful ultraviolet radiation emitted by the sun, and as a pollutant in the lower atmosphere (troposphere).

Ozone is the primary component of urban smog. It is not emitted directly into the air, but is formed through a series of reactions involving VOC and NO_x in the presence of sunlight. VOC emissions result primarily from incomplete combustion and the evaporation of chemical solvents and fuels. NO_x includes various combinations of nitrogen and oxygen, including nitric oxide (NO), NO₂, and others, typically resulting from the combustion of fuels.

VOC and NO_x emissions are both considered critical in ozone formation. Therefore, the rate of ozone production can be limited by either VOC or NO_x. When there is a lower production rate of NO_x, indicating that NO_x is

scarce, the rate of ozone production is NO_x-limited. Under these circumstances, ozone could be most effectively reduced by lowering current and future NO_x emissions, rather than lowering VOC. Rural areas tend to be NO_x-limited, while areas with a dense urban population tend to be VOC-limited. Both VOC and NO_x reductions provide ozone benefits in region, but the SFNA exhibits a NO_x-limited regime and therefore NO_x reductions are more effective than VOC reductions on a tonnage basis (SMAQMD 2017a). Meteorology and terrain play a major role in ozone formation. Generally, low wind speeds or stagnant air coupled with warm temperatures and clear skies provide the optimum conditions for formation. As a result, summer is generally the peak ozone season. Because of the reaction time involved, peak ozone concentrations often occur far downwind of the precursor emissions. Therefore, ozone is a regional pollutant that often affects large areas. In general, ozone concentrations over or near urban and rural areas reflect an interplay of emissions of ozone precursors, transport, meteorology, and atmospheric chemistry.

Individuals exercising outdoors, children, and people with preexisting lung disease, such as asthma and chronic pulmonary lung disease, are considered to be the most susceptible sub-groups for ozone effects. Short-term exposure (lasting for a few hours) to ozone can result in breathing pattern changes, reduction of breathing capacity, increased susceptibility to infections, inflammation of the lung tissue, and some immunological changes. In recent years, a correlation between elevated ambient ozone levels and increases in daily hospital admission rates, as well as mortality, has also been reported. An increased risk for asthma has been found in children who participate in multiple sports and live in communities with high ozone levels.

Emissions of the ozone precursors VOC and NO_x have decreased over the past several years. According to the most recently published California Air Resources Board Almanac, emission levels of NO_x and VOC in Sacramento Metropolitan Area are projected to continue to decrease through 2035, largely due to more stringent motor vehicle standards and cleaner burning fuels, as well as due to rules for control of VOC from various industrial coating and solvent operations (ARB 2013).

Carbon Monoxide

CO is a colorless and odorless gas that, in the urban environment, is primarily produced by the incomplete burning of carbon in fuels, primarily from mobile (transportation) sources. In fact, 77 percent of the nationwide CO emissions are from mobile sources. The other 23 percent consists of CO emissions from wood-burning stoves, incinerators, and industrial sources. Relatively high concentrations are typically found near crowded intersections and along heavily used roadways carrying slow-moving traffic. Even under the most severe meteorological and traffic conditions, high concentrations of CO are limited to locations within a relatively short distance (300 to 600 feet) of heavily traveled roadways. Vehicle traffic emissions can cause localized CO impacts, and severe vehicle congestion at major signalized intersections can generate elevated CO levels, called “hot spots,” which can be hazardous to human receptors adjacent to the intersections.

CO enters the bloodstream through the lungs by combining with hemoglobin, which normally supplies oxygen to the cells. However, CO combines with hemoglobin much more readily than oxygen does, drastically reducing the amount of oxygen available to the cells. Adverse health effects associated with exposure to high CO concentrations, typically only attainable indoors or within similarly enclosed spaces, include dizziness, headaches, and fatigue. CO exposure is especially harmful to individuals who suffer from cardiovascular and respiratory diseases (EPA 2016b).

Nitrogen Dioxide

NO₂ is one of a group of highly reactive gases known as oxides of nitrogen, or NO_x. NO₂ is formed when ozone reacts with NO in the atmosphere and is listed as a criteria pollutant because NO₂ is more toxic than NO. The major human-made sources of NO₂ are combustion devices, such as boilers, gas turbines, and mobile and stationary reciprocating internal combustion engines. The combined emissions of NO and NO₂ are referred to as NO_x and 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 NO_x emission sources. NO_x also react with water, oxygen, and other chemicals to form nitric acids, contributing to the formation of acid rain.

Inhalation is the most common route of exposure to NO₂. Breathing air with a high concentration of NO₂ can lead to respiratory illness. Short-term exposure can aggravate respiratory diseases, particularly asthma, leading to respiratory symptoms (such as coughing, wheezing, or difficulty breathing), hospital admissions, and visits to emergency rooms. Longer exposures to elevated concentrations of NO₂ may contribute to the development of asthma and potentially increase susceptibility to respiratory infections. Larger decreases in lung functions are observed in individuals with asthma or chronic obstructive pulmonary disease (e.g., chronic bronchitis, emphysema) than in healthy individuals, indicating a greater susceptibility of these sub-groups (EPA 2016c).

Sulfur Dioxide

SO₂ is one component of the larger group of gaseous sulfur oxides (SO_x). SO₂ is used as the indicator for the larger group of SO_x, as it is the component of greatest concern and found in the atmosphere are much higher concentrations than other gaseous SO_x. SO₂ is typically produced by such stationary sources as coal and oil combustion facilities, steel mills, refineries, and pulp and paper mills. The major adverse health effects associated with SO₂ exposure pertain to the upper respiratory tract. On contact with the moist mucous membranes, SO₂ produces sulfurous acid, which is a direct irritant. Concentration rather than duration of exposure is an important determinant of respiratory effects. Children, the elderly, and those who suffer from asthma are particularly sensitive to effects of SO₂ (EPA 2016d).

SO₂ also reacts with water, oxygen, and other chemicals to form sulfuric acids, contributing to the formation of acid rain. SO₂ emissions that lead to high concentrations of SO₂ in the air generally also lead to the formation of other SO_x, which can react with other compounds in the atmosphere to form small particles, contributing to particulate matter pollution, which can have health effects of its own.

Particulate Matter

Particulate matter is a complex mixture of extremely small particles and liquid droplets. Particulate matter is made up of a number of components, including acids (such as nitrates and sulfates), organic chemicals, metals, and soil or dust particles. The major area-wide sources of PM_{2.5} and PM₁₀ are fugitive dust, especially from roadways, agricultural operations, and construction and demolition. Sources of PM₁₀ also include crushing or grinding operations. Sources of PM_{2.5} also include all types of combustion, including motor vehicles, power plants, residential wood burning, forest fires, agricultural burning, and some industrial processes. While exhaust emissions from mobile sources contribute only a very small portion of directly emitted PM_{2.5} and PM₁₀ emissions, they are a major source of VOC and NO_x, which undergo reactions in the atmosphere to form particulate matter, known as secondary particles. These secondary particles make up the majority of particulate matter pollution.

The size of particulate matter is directly linked to the potential for causing health problems. EPA is concerned about particles that are 10 micrometers in diameter or smaller, because these particles generally pass through the throat and nose and enter the lungs. Once inhaled, these particles can affect the heart and lungs and cause serious health effects and even death. The adverse health effects associated with PM₁₀ depend on the specific composition of the particulate matter. For example, health effects may be associated with metals, polycyclic aromatic hydrocarbons (PAH), and other toxic substances adsorbed onto fine particulate matter (referred to as the “piggybacking effect”), or with fine dust particles of silica or asbestos. Effects related to short- and long-term exposure to elevated concentrations of PM₁₀ include respiratory symptoms, aggravation of respiratory and cardiovascular diseases, a weakened immune system, and cancer (World Health Organization 2016). PM_{2.5} poses an increased health risk because these very small particles can be inhaled deep in the lungs and may contain substances that are particularly harmful to human health. Direct emissions of PM_{2.5} decreased in the Sacramento Metropolitan Area between 2000 and 2010, but are projected to increase very slightly through 2035. Similarly, emissions of diesel PM (DPM) decreased from 2000 through 2010 due to reduced exhaust emissions from diesel mobile sources; these emissions are anticipated to continue to decline through 2035 (ARB 2013).

Lead

Lead is a highly toxic metal that may cause a range of human health effects. Lead is found naturally in the environment and is used in manufactured products. Previously, the lead used in gasoline anti-knock additives represented a major source of lead emissions to the atmosphere. EPA began working to reduce lead emissions soon after its inception, issuing the first reduction standards in 1973. Lead emissions have significantly decreased due to the near elimination of leaded gasoline use. Metal processing is currently the primary source of lead emissions. The highest levels of lead in air are generally found near lead smelters. Other stationary sources are waste incinerators, utilities, and lead-acid battery manufacturers. Although the ambient lead standards are no longer violated, lead emissions from stationary sources still pose “hot spot” problems in some areas. As a result, ARB has identified lead as a toxic air contaminant (TAC).

Fetuses, infants, and children are more sensitive than others to the adverse effects of lead exposure. Exposure to low levels of lead can adversely affect the development and function of the central nervous system, leading to learning disorders, distractibility, inability to follow simple commands, and lower intelligence quotient. In adults, increased lead levels are associated with increased blood pressure. Lead poisoning can cause anemia, lethargy, seizures, and death; although it appears that there are no direct effects of lead on the respiratory system.

Monitoring Station Data and Attainment Area Designations

Health-based air quality standards have been established for criteria pollutants by EPA at the national level and by ARB at the state level. These standards were established to protect the public with a margin of safety from adverse health impacts due to exposure to air pollution. In addition to criteria pollutants, California has also established standards for sulfates, visibility-reducing particles, hydrogen sulfide, and vinyl chloride. Table 3.3-1 presents the National Ambient Air Quality Standards (NAAQS) and the California Ambient Air Quality Standards (CAAQS). These health-based pollutant standards are reviewed on a legally prescribed frequency and revised as new health and welfare effects data warrant. Each standard is based on a specific averaging time over which the concentration is measured. Different averaging times are based upon protection of short-term, high-dosage effects or longer-term, low-dosage effects. NAAQS may be exceeded no more than once per year; CAAQS are not to be exceeded.

**Table 3.3-1.
National and California Ambient Air Quality Standards**

Pollutant	Averaging Time	California Standards ^a		National Standards ^b	
		Concentration ^c	Primary ^{c,d}	Secondary ^{c,e}	
Ozone ^k	1 hour	0.09 ppm (180 µg/m ³)	–	Same as primary standard	
	8 hours	0.070 ppm (137 µg/m ³)	0.070 ppm (147 µg/m ³)		
Respirable particulate matter (PM ₁₀) ^f	24 hours	50 µg/m ³	150 µg/m ³	Same as primary standard	
	Annual arithmetic mean	20 µg/m ³	–		
Fine particulate matter (PM _{2.5}) ^f	24 hours	–	35 µg/m ³	Same as primary standard	
	Annual arithmetic mean	12 µg/m ³	12 µg/m ³		
Carbon monoxide (CO)	8 hours	9.0 ppm (10 mg/m ³)	9 ppm (10 mg/m ³)	None	
	1 hour	20 ppm (23 mg/m ³)	35 ppm (40 mg/m ³)		
	8 hours (Lake Tahoe)	6 ppm (7 mg/m ³)	–		
Nitrogen dioxide (NO ₂) ^g	Annual arithmetic mean	0.030 ppm (57 µg/m ³)	0.053 ppm (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) ^h	Annual Arithmetic Mean	–	0.030 ppm (for certain areas) ^h	–	
	24 hours	0.04 ppm (105 µg/m ³)	0.14 ppm (for certain areas) ^h	–	
	3 hours	–	–	0.5 ppm (1,300 µg/m ³)	
	1 hour	0.25 ppm (655 µg/m ³)	75 ppb (196 µg/m ³)	–	
Lead ^{i,j}	30-day average	1.5 µg/m ³	–	–	
	Calendar quarter	–	1.5 µg/m ³ (for certain areas) ^j	Same as primary standard	
	Rolling 3-month average	–	0.15 µg/m ³		
Visibility-reducing particles ^k	8 hours	See footnote j	No national standards		
Sulfates	24 hours	25 µg/m ³			
Hydrogen sulfide	1 hour	0.03 ppm (42 µg/m ³)			
Vinyl chloride ⁱ	24 hours	0.01 ppm (26 µg/m ³)			

Notes: mg/m³ = milligrams per cubic meter; ppb = parts per billion; ppm = parts per million; µg/m³ = micrograms per cubic meter

^a California standards for ozone, carbon monoxide (except 8-hour Lake Tahoe), sulfur dioxide (1- and 24-hour), nitrogen dioxide, and particulate matter (PM₁₀, PM_{2.5}, and visibility-reducing particles), are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

^b National standards (other than ozone, particulate matter, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over 3 years, is equal to or less than the standard. For PM₁₀, the 24-hour 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 1. For PM_{2.5}, the 24-hour standard is attained when 98% of the daily concentrations, averaged over 3 years, are equal to or less than the standards.

^c Concentration expressed first in the units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25 degrees Celsius and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and reference pressure of 760 torr; (ppm) in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

^d National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.

^e National Secondary Standards: The levels of air quality necessary to protect public welfare from any known or anticipated adverse effects of a pollutant.

^f On December 14, 2012, the national annual PM_{2.5} primary standard was lowered from 15 µg/m³ to 12.0 µg/m³. The existing national 24-hour PM_{2.5} standards (primary and secondary) were retained at 35 µg/m³, as was the annual secondary standard of 15 µg/m³. The existing 24-hour PM₁₀ standards (primary and secondary) of 150 µg/m³ also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.

^g To attain the 1-hour national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 ppb. California standards are in units of ppm. To directly compare the national 1-hour standard to the California standards the units can be converted from 100 ppb to 0.100 ppm.

^h On June 2, 2010, a new 1-hour SO₂ standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO₂ national standards (24-hour and annual) remain in effect until 1 year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved. To directly compare the 1-hour national standard to the California standard, the units can be converted to ppm. In this case, the national standard of 75 ppb is identical of 0.075 ppm.

ⁱ ARB has identified lead and vinyl chloride as toxic air contaminants with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants. The national standard for lead was revised on October 15, 2008, to a rolling 3-month average. The 1978 lead standard (1.5 µg/m³ as a quarterly average) remains in effect until 1 year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standards are approved.

^k In 1989, ARB converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are "extinction of 0.23 per kilometer" and the "extinction of 0.07 per kilometer" for the statewide and Lake Tahoe Air Basin standards, respectively.

^k On October 1, 2015, the national 8-hour ozone primary and secondary standards were lowered from 0.075 to 0.070 ppm.

Source: ARB 2017a

Concentrations of criteria air pollutants are measured at several monitoring stations in the SVAB. Table 3.3-2 summarizes the air quality data from the closest stations to the project site that measure various criteria air pollutants for the most recent 3 years of complete data (2014–2016). As shown below, the 8-hour ozone concentration exceeded the CAAQS and NAAQS in all three monitoring years and the 1-hour ozone CAAQS were exceeded only in 2016. The 24-hour PM_{2.5} NAAQS was estimated to be exceeded multiple times in 2015, but not at all in 2014 and 2016. The 24-hour PM₁₀ CAAQS was estimated to be exceeded multiple times in 2015 and not at all in 2014 and 2016, while NAAQS for 24-hour PM₁₀ were not exceeded at all in the past three years. No exceedances have been registered for NO₂ near the project site for the last three years. Monitoring stations in the SVAB have not monitored for CO or SO₂ in the past three years. The maximally registered CO concentration in SVAB in the past 10 years is 1.94, which is approximately 22 percent of the 8-hour standard. Therefore, it is highly unlikely that any exceedances of CO have occurred in the past three years near the project site.

Both ARB and EPA use this type of monitoring data to designate areas according to attainment status for criteria air pollutants published by the agencies. The purpose of these designations is to identify areas with air quality problems and thereby initiate planning efforts for improvement.

The three basic designation categories are nonattainment, attainment, and unclassified. An “attainment” designation for an area signifies that pollutant concentrations did not exceed the established standard. In most cases, areas designated or re-designated as attainment must develop and implement maintenance plans, which are designed to ensure continued compliance with the standard.

In contrast to attainment, a “nonattainment” designation indicates that a pollutant concentration has exceeded the established standard. Nonattainment may differ in severity. To identify the severity of the problem and the extent of planning and actions required to meet the standard, nonattainment areas are assigned a classification that is commensurate with the severity of their air quality problem (e.g., moderate, serious, severe, extreme).

Finally, an unclassified designation indicates that insufficient data exist to determine attainment or nonattainment. In addition, the California designations include a subcategory of nonattainment-transitional, which is given to nonattainment areas that are progressing and nearing attainment.

As shown in Table 3.3-3, Sacramento County currently meets NAAQS for all criteria air pollutants except ozone and the 24-hour PM_{2.5} standard. Sacramento County meets the CAAQS for all criteria air pollutants except ozone, PM₁₀, and PM_{2.5}.

The SMAQMD approved the Sacramento Federal Ozone Nonattainment Area Redesignation Substitution Request for the 1-Hour Ozone Standard in September 2017, which includes all of Sacramento and Yolo counties, and portions of Placer, El Dorado, Solano, and Sutter counties; the request is now awaiting EPA approval (SMAQMD 2017b).

**Table 3.3-2.
Summary of Annual Ambient Air Quality Data near the Project Site**

	2014	2015	2016
OZONE			
Sacramento—Goldenland Court Monitoring Station (approx. 2.5 miles southeast of the project site)			
Maximum 8-hour concentration (ppm) (2007/2015 national)	0.077/0.076	0.079/0.079	/0.082
Maximum 1-hour concentration (ppm) (state)	0.088	0.086	.108
Number of days 8-hour standard exceeded (2007/2015 national)	4/3	6/4	3/8
Number of days 1-hour standard exceeded (state)	0	0	2
CARBON MONOXIDE (CO)¹			
Not Available			
NITROGEN DIOXIDE (NO₂)			
Sacramento— Goldenland Court Monitoring Station (approx. 2.5 miles southeast of the project site)			
Maximum 1-hour concentration (ppm) (state/national)	60.0/60.0	59.0/59.0	56.0/56.0
Number of days state standard exceeded (state/national)	0/0	0/0	0/0
Annual average (ppm)	—	—	—
SULFUR DIOXIDE (SO₂)²			
Not Available			
FINE PARTICULATE MATTER (PM_{2.5})			
Sacramento—T Street Monitoring Station (approx. 7 miles southeast of the project site)			
Maximum 24-hour concentration (µg/m ³)(state/national) ³	33.2/26.3	42.1/36.3	39.8/24.4
Number of days national standard exceeded (measured/estimated) ⁴	0/0.0	1/30	0/0.0
State annual average (µg/m ³)	8.1	9.6	7.7
RESPIRABLE PARTICULATE MATTER (PM₁₀)			
Sacramento— Goldenland Court Monitoring Station (approx. 2.5 miles southeast of the project site)			
Maximum 24-hour concentration (µg/m ³) (state/national) ³	35.0/47.0	54.0/53.0	33.0/33.0
Number of days state standard exceeded (measured/estimated) ⁴	0/0.0	1/6.1	0/0.0
Number of days national standard exceeded (measured/estimated) ⁴	0/0.0	0/0.0	0/0.0
Annual Average (state/national) ³	15.0/11.0	16.5/16.1	14.4/14.2
Notes: µg/m ³ = micrograms per cubic meter; ppm = parts per million; — = data not available			
¹ Carbon monoxide is not currently monitored at any station in SVAB. The highest recorded carbon monoxide concentration in the last 10 years was 1.94 ppm in 2009, which is approximately 22% of the 8-hour standard.			
² After 2013, sulfur dioxide has not been monitored at any station in SVAB.			
² State and national statistics may differ for the following reasons: State statistics are based on California-approved samplers, whereas national statistics are based on samplers using federal reference or equivalent methods. State and national statistics may therefore be based on different samplers. State statistics are based on local conditions while national statistics are based on standard conditions. State criteria for ensuring that data are sufficiently complete for calculating valid annual averages are generally more stringent than the national criteria.			
³ Measured days are those days on which an actual measurement was greater than the level of the state daily standard or the national daily standard. Measurements are typically collected every 6 days. The number of estimated days represents a mathematically estimate of those days on which concentrations would have been greater than the level of the standard had each day been monitored. The number of days above the standard is not necessarily the number of violations of the standard for the year.			
Sources: ARB 2017b			

**Table 3.3-3.
Sacramento County Attainment Designations**

Pollutant	Federal Standard	California Standard
Ozone (O ₃) ¹	Nonattainment (1-hour) ¹ Classification = Severe	Nonattainment (1-hour) Classification = Serious ²
	Nonattainment (8-hour) ³ Classification = Severe-15	Nonattainment (8-hour)
	Nonattainment (8-hour) ⁴ Classification = Severe-15	
Particulate Matter – 10 microns (PM ₁₀)	Attainment (24-hour)	Nonattainment (24-hour)
		Nonattainment (Annual)
Particulate Matter – 2.5 microns (PM _{2.5})	Nonattainment (24-hour)	(No Standard for 24-hour)
	Unclassified/Attainment (Annual)	Nonattainment (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 (Pb)	Unclassified/Attainment (3-month rolling avg)	Attainment (30 day average)
Hydrogen Sulfide (H ₂ S)	No Federal Standard	Unclassified (1-hour)
Sulfates		Attainment (24-hour)
Visibly Reducing particles		Unclassified (8-hour)

¹ Air quality meets Federal 1-hour Ozone standard (77 FR 64036). EPA revoked this standard, but some associated requirements still apply. The 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 Cannot be classified.
Source: SMAQMD 2017a

TOXIC AIR CONTAMINANTS

In addition to criteria pollutants, both federal and State air quality regulations also focus on toxic air contaminants (TACs). 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 otherwise pose a hazard to human health. TACs are usually present in minute quantities in the ambient air; however, their toxicity or health risk may pose a threat to public health even at low concentrations. TACs can be separated into carcinogens and noncarcinogens, based on the nature of the effects associated with exposure to the pollutant. For regulatory purposes, carcinogens are assumed to have no safe threshold below which health impacts would not occur. Noncarcinogens differ in that there is generally assumed to be a safe level of exposure below which no negative health impact is believed to occur.

According to the *California Almanac of Emissions and Air Quality* (ARB 2009), most of the estimated health risk from TACs can be attributed to relatively few compounds, the most important being particulate matter from diesel-fueled engines (i.e., DPM). Other 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.

DPM differs from other TACs because it is not a single substance, but is a complex mixture of hundreds of substances. Although DPM is emitted by diesel-fueled internal combustion engines, the composition of the emissions varies depending on engine type, operating conditions, fuel composition, type of lubricating oil, and presence or absence of an emission control system. Unlike the other TACs, no ambient monitoring data are available for DPM because no routine measurement method currently exists. However, emissions of DPM are forecasted to decline; it is estimated that emissions of DPM in 2035 will be less than half those in 2010, further reducing statewide cancer risk and non-cancer health effects (ARB 2016).

A search of ARB's Facility Search Database, revealed no stationary TAC sources near the project site (ARB 2017d). However, vehicles on and traveling along Interstate 5 (I-5)/SR 99, Del Paso Road and other roads near the project site are sources of DPM and other TACs associated with tailpipe exhaust. The project site is approximately 3,300 feet and 1,400 feet from I-5/SR 99 and Del Paso Road, respectively. These buffer distances are greater than the minimum distances required by Senate Bill (SB) 352 for school sites. School sites that are located within the SB 352-prescribed distance (i.e., 500 feet) from busy roadways are required to evaluate potential exposure to TACs.

ODORS

The ability to detect odors varies considerably among the population and is subjective. Some individuals have the ability to smell minute quantities of specific substances while 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 (e.g., from a fast-food restaurant or bakery) may be perfectly acceptable to another. Unfamiliar odors may be more easily detected and likely to cause complaints than familiar ones.

Several examples of common land use types that generate substantial odors include wastewater treatment plants, landfills, composting/green waste facilities, recycling facilities, petroleum refineries, chemical manufacturing plants, painting/coating operations, rendering plants, and food packaging plants. In addition, agricultural activities in the area can cause odors, such as dairy operations; horse, cattle, or sheep (livestock) grazing; fertilizer use; and aerial crop spraying.

Offensive odors can potentially affect human health in several ways. First, odorant compounds can irritate the eye, nose, and throat, which can reduce respiratory volume. Second, the VOCs that cause odors can stimulate sensory nerves to cause neurochemical changes that might influence health, for instance, by compromising the immune system. Finally, unpleasant odors can trigger memories or attitudes linked to unpleasant odors, causing cognitive and emotional effects, such as stress.

Potential sources of odor in the project vicinity are primarily agricultural operations. However, SMAQMD has not received any odor complaints from the Westlake subdivision adjacent to the project site (SMAQMD 2017c).

SENSITIVE RECEPTORS

Some land uses are considered more sensitive to air pollution than others, due to the types of population groups or activities involved. Children, pregnant women, the elderly, those with existing health conditions, and athletes or

others who engage in frequent exercise are especially vulnerable to the effects of air pollution. Accordingly, land uses that are typically considered sensitive receptors include schools, daycare centers, parks and playgrounds, and medical facilities.

Residential areas are considered sensitive to air pollution because residents (including children and the elderly) tend to be at home for extended periods of time, resulting in sustained exposure to pollutants present. Recreational land uses are considered moderately sensitive to air pollution. Exercise places a high demand on respiratory functions, which can be impaired by air pollution, even though exposure periods during exercise are generally short. In addition, noticeable air pollution can detract from the enjoyment of recreation. Industrial and commercial areas are considered the least sensitive to air pollution. Exposure periods are relatively short and intermittent as the majority of the workers tend to stay indoors most of the time.

Sensitive receptors nearest to the project are those within the residential area east of the project site.

3.3.2 REGULATORY CONTEXT

EPA, California Air Resources Board (ARB), the Sacramento Air Quality Management District (SMAQMD), and Sacramento County are responsible for regulating air quality in the vicinity of the project site. Each of these agencies develops rules, regulations, policies, and/or goals to comply with applicable legislation. Although EPA regulations may not be superseded, both State and local regulations may be more stringent. The regulatory framework surrounding criteria air pollutants, TACs, and odor emissions is described separately below.

CRITERIA AIR POLLUTANTS

Federal Plans, Policies, Regulations, and Laws

The primary legislation that governs federal air quality regulations is the Clean Air Act (CAA), first enacted in 1970 and with the most recent amendments by congress enacted in 1990. The act delegates primary responsibility for clean air to EPA. EPA develops rules and regulations to preserve and improve air quality and delegates specific responsibilities to State and local agencies. Under the act, EPA has established the NAAQS for seven potential air pollutants: CO, O₃, NO₂, PM₁₀ and PM_{2.5}, SO₂, and lead (as shown above in Table 3.3-1). The purpose of the NAAQS is two-tiered: primarily to protect public health, and secondarily to prevent degradation to the environment (i.e., impairment of visibility, damage to vegetation and property). The CAA also requires each state to prepare an air quality control plan, referred to as a State Implementation Plan (SIP). 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 to determine whether implementing them will achieve ambient air quality standards. If EPA determines a SIP to be inadequate, a federal implementation plan that imposes additional control measures may be prepared for the nonattainment area.

State Plans, Policies, Regulations, and Laws

ARB is 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 CAAQS (as shown above in Table 3.3-1). ARB has also established CAAQS for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particulate matter, in addition to the above-mentioned criteria air pollutants regulated by EPA. 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 achieve and maintain the CAAQS by the earliest practicable date. The act specifies that local air districts should focus particular attention on reducing the emissions from transportation and areawide emission sources and provides districts with the authority to regulate indirect sources.

ARB is the lead agency for developing the SIP in California. Local air districts and other agencies prepare Air Quality Attainment Plans or Air Quality Management Plans (AQMPs), and submit them to ARB for review, approval, and incorporation into the applicable SIP. ARB also maintains air quality monitoring stations throughout the state in conjunction with local air districts. Data collected at these stations are used by the ARB to classify air basins as being in attainment or nonattainment with respect to each pollutant and to monitor progress in attaining air quality standards.

ARB has established emission standards for vehicles sold in California and for various types of equipment. California gasoline specifications are governed by both State and federal agencies. During the past decade, federal and State agencies have imposed numerous requirements on the production and sale of gasoline in California. In December 2004, ARB adopted a fourth phase of emission standards (Tier 4) in the Clean Air Non-road Diesel Rule that are nearly identical to those finalized by EPA on May 11, 2004. As such, engine manufacturers are now required to meet after-treatment-based exhaust standards for NO_x and PM starting in 2011 that are more than 90 percent lower than current levels, putting emissions from off-road engines virtually on par with those from on-road, heavy-duty diesel engines. ARB has also adopted control measures for DPM and more stringent emissions standards for various on-road mobile sources of emissions, including transit buses and off-road diesel equipment (e.g., tractors, generators).

California's adopted 2007 State Strategy for California's SIP for federal PM_{2.5} and 8-Hour Ozone Standards (2007 SIP) was submitted to EPA as a revision to the SIP in November 2007 (ARB 2017c). In July 2011, ARB approved revisions to the 2007 SIP that updated the ARB rulemaking calendar, made adjustments to transportation conformity budgets, revised reasonable further progress tables and associated reductions for contingency purposes, and updated actions to identify advanced emission control technologies (ARB 2017c). In 2008, the EPA strengthened the 8-hour ozone standard to 75 parts per billion (ppb). Sixteen areas in California were designated nonattainment in 2012. In 2012, EPA also strengthened the annual fine particulate matter (PM_{2.5}) standard to 12 micrograms per cubic meter (µg/m³). U.S. EPA designated four areas in California as nonattainment for this standard. The Air Resources Board (ARB or Board) released the Revised Proposed 2016 State Strategy for the State Implementation Plan (State SIP Strategy), describing the proposed commitment to achieve the reductions necessary from mobile sources, fuels, and consumer products to meet federal ozone and PM_{2.5} standards over the next 15 years (ARB 2017c).

Local Plans, Policies, Regulations and Laws

Sacramento Metropolitan Air Quality Management District

The SMAQMD attains and maintains air quality conditions in all of Sacramento County through a comprehensive program of planning, regulation, enforcement, technical innovation, and promotion of the understanding of air quality issues. SMAQMD inspects stationary sources of air pollution, responds to citizen complaints, monitors ambient air quality and meteorological conditions, and implements programs and regulations required by the CAA, CAAA, and CCAA. The clean-air strategy of SMAQMD includes the preparation of plans and programs for the attainment of ambient air-quality standards, adoption and enforcement of rules and regulations concerning sources of air pollution, and issuance of permits for stationary sources of air pollution. The rules and regulations include procedures and requirements to control the emission of pollutants and to prevent adverse impacts.

All projects within SMAQMD's jurisdictional area are subject to SMAQMD rules and regulations in effect at the time of construction. Specific SMAQMD rules that could be applicable to the proposed 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 402:** Nuisance. A developer and proposed project cannot emit any quantities of air contaminants or other materials that would cause injury, detriment, nuisance, or annoyance to any considerable number of persons or the public; or that would endanger the comfort, repose, health, or safety of any persons or the public; or that would 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 site.
- ▶ **Rule 411:** Water Heaters, Boilers, and Process Heaters Rated Less than 1,000,000 Btu per Hour. If a proposed project would install units (i.e., boilers, steam generators, and process heaters) fired on gaseous or nongaseous fuels with a rated heat input capacity less than 1 million British thermal units (Btu) per hour, the unit is required to comply with the NO_x and CO emissions standards.
- ▶ **Rule 442:** Architectural Coatings. The developer or contractor is required to use coatings that comply with the content limits for volatile organic compounds (VOCs) specified in the rule.
- ▶ **Rule 453:** Cutback and Emulsified Asphalt Paving Materials. The developer or contractor is required to use asphalt paving materials that comply with the VOC content limits specified in the rule.

In addition, the SMAQMD recommends that all construction projects include Basic Construction Emission Control Practices, as outlined in the *SMAQMD CEQA Guide* (SMAQMD 2017c), and that any projects with construction mitigation requirements must reduce emissions from off-road equipment. If modeled construction-

generated emissions for a project are not reduced to SMAQMD's threshold of significance by application of these standard construction mitigation measures, then payment of a mitigation fee may be assessed to achieve the remaining mitigation necessary.

Sacramento County General Plan

State law requires each city and county to adopt a General Plan “for the physical development of the county or city, and any land outside its boundaries which bears relation to its planning” (§65300). The *Sacramento County General Plan of 2005–2030* (County General Plan) (Sacramento County 2011) contains a set of goals, policies, and programs that address important community issues and is the basis for land use and public policy decisions made by the Board of Supervisors and other policy makers. As a part of evaluating impacts of the proposed project under CEQA, the proposed project is evaluated for consistency with the Sacramento County General Plan. The Air Quality Element in the General Plan contains air quality policies:

- ▶ **Policy AQ-3.** Buffers and/or other appropriate mitigation shall be established on a project-by-project basis and incorporated during review to provide for protection of sensitive receptors from sources of air pollution or odor. The California Air Resources Board's “Air Quality and Land Use Handbook: A Community Health Perspective”, and the SMAQMD's approved Protocol (Protocol for Evaluating the Location of Sensitive Land uses Adjacent to Major Roadways) shall be utilized when establishing these buffers.
- ▶ **Policy AQ-4.** Developments which meet or exceed thresholds of significance for ozone precursor pollutants as adopted by SMAQMD, shall be deemed to have a significant environmental impact. An Air Quality Mitigation Plan shall be submitted to the County of Sacramento prior to project approval, subject to review and recommendation as to technical adequacy by SMAQMD.
- ▶ **Policy AQ-11.** Encourage contractors operating in the county to procure and to operate low-emission vehicles, and to seek low emission fleet status for their off-road equipment.
- ▶ **Policy AQ-16.** Prohibit the idling of on-and off-road engines when the vehicle is not moving or when the off-road equipment is not performing work for a period of time greater than five minutes in any one-hour period.
- ▶ **Policy AQ-17.** Promote optimal air quality benefits through energy conservation measures in new development.
- ▶ **Policy AQ-19.** Require all feasible reductions in emissions for the operation of construction vehicles and equipment on major land development and roadway construction projects.
- ▶ **Policy AQ-20.** Promote Cool Community strategies to cool the urban heat island, reduce energy use and ozone formation, and maximize air quality benefits by encouraging four main strategies including, but not limited to: plant trees, selective use of vegetation for landscaping, install cool roofing, and install cool pavements.

TOXIC AIR CONTAMINANTS

Air quality regulations also focus on TACs, known in federal regulations as hazardous air pollutants (HAPs). In general, for those TACs that may cause cancer, there is no concentration that does not present some risk. This contrasts with criteria air pollutants, for which acceptable levels of exposure can be determined and for which the

ambient standards have been established. Instead, EPA and ARB regulate HAPs and TACs, respectively, through statutes and regulations that generally require the use of the maximum or best available control technology for toxics (MACT and BACT) to limit emissions. These statutes and regulations, in conjunction with additional rules set forth by the SMAQMD, establish the regulatory framework for TACs.

Federal Hazardous Air Pollutant Programs

The CAA requires EPA to identify and set national emissions standards for HAPs to protect public health and welfare. Emissions standards are set for what are called major sources and area sources. Major sources are defined as stationary sources with potential to emit more than 10 tons per year (TPY) of any HAP or more than 25 TPY of any combination of HAPs; all other sources are considered area sources. There are two types of emissions standards: those that require application of maximum achievable control technology (MACT), and those that are health-risk based and deemed necessary to address risks remaining after implementation of MACT. For area sources, the MACT standards may be different due to differences in generally available control technology. The CAA also requires EPA to issue vehicle or fuel standards containing reasonable requirements that control toxic emissions of, at a minimum, benzene and formaldehyde. Performance criteria were established to limit mobile-source emissions of toxics.

State and Local Programs for Toxic Air Contaminants

TACs in California are regulated primarily through the Tanner Air Toxics Act (Chapter 1047, Statutes of 1983) and the Air Toxics Hot Spots Information and Assessment Act (Chapter 1252, Statutes of 1987). A total of 243 substances have been designated TACs under California law; they include the 189 (Federal) HAPs adopted in accordance with Assembly Bill (AB) 2728, which required the State to identify the Federal HAPs as TACs to make use of the time and costs the EPA had already invested in evaluating and identifying hazardous/toxic substances. The Air Toxics Hot Spots Information and Assessment Act of 1987 (AB 2588) seeks to identify and evaluate risks from air toxics sources; however, AB 2588 does not regulate air toxics emissions. TAC emissions from individual facilities are quantified and prioritized. “High-priority” facilities must perform a health risk assessment and, if specific thresholds are violated, must communicate the results to the public in the form of notices and public meetings. The regulation of TACs is generally through statutes and rules that require the use of the maximum or best available control technology to limit TAC emissions.

According to the California Almanac of Emissions and Air Quality (ARB 2013), most of the estimated health risk from TACs is attributed to relatively few compounds, the most dominant being particulate matter exhaust from DPM. In 2000, ARB approved a comprehensive diesel risk reduction plan to reduce emissions from both new and existing diesel-fueled vehicles and engines. The regulation is anticipated to result in an 85 percent decrease in Statewide diesel health risk by 2020 relative to the diesel health risk year in the year 2000 (ARB 2000). Additional regulations apply to new trucks and diesel fuel. Subsequent ARB regulations on diesel emissions include the On-Road Heavy Duty Diesel Vehicle (In-Use) Regulation, the On-Road Heavy Duty (New) Vehicle Program, the In-Use Off-road Diesel Vehicle Regulation, and the New Off-road Compression Ignition Diesel Engines and Equipment Program. All of these regulations and programs have timetables by which manufacturers must comply and existing operators must upgrade their diesel-powered equipment.

In addition, the *Air Quality and Land Use Handbook: A Community Health Perspective*, published by ARB, provides guidance on land use compatibility with sources of TACs (ARB 2005). The handbook is not a law or adopted policy but offers advisory recommendations for the siting of sensitive receptors near uses associated with

TACs, such as freeways and high-traffic roads, commercial distribution centers, rail yards, ports, refineries, dry cleaners, gasoline stations, and industrial facilities.

Since the 2005 publication of the Handbook, ARB also published a Technical Advisory as a supplement to the Handbook to provide information on scientifically based strategies to reduce exposure to traffic emissions near high-volume roadways in order to protect public health (ARB 2017e). This Technical Advisory demonstrates that reduced exposure to traffic-related pollution can also be achieved while pursuing infill development that independently provides public health benefits, such as reduce vehicle miles travelled and increased physical activity. This Technical Advisory does not negate the ARB Handbook, but offers multiple variables for consideration when planning development and proximity of receptors.

Senate Bill (SB) 352 (Education Code Section 17213, Public Resources Code Section 21151.8) expands on the previous requirements for the review of TAC sources near school sites. Accordingly, SB 352 requires that any school site located within 500 feet of the edge of the closest travel lane of a freeway or other busy traffic corridor be reviewed for potential health risks.

Regional and Local Programs for Toxic Air Contaminants

At the local level, air pollution control or management 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 could emit TACs must 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 several 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. It is important to note that the air quality permitting process applies only to stationary sources; properties may be exposed to elevated levels of TACs from mobile sources that are not subject to this process or to any requirements regarding best available control technology for Toxic Air Contaminants (T-BACT) implementation (e.g., freeway traffic). Rather, emissions controls on mobile sources are subject to regulations implemented on the state and federal level.

ODORS

Typically, 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 the psychological (i.e., irritation, anger, or anxiety) to the physiological, including circulatory and respiratory effects, nausea, vomiting, and headache. The ability to detect odors varies considerably among the population and overall is quite subjective.

SMAQMD's Rule 402 (Nuisance) addresses odor exposure. This rule, however, does not apply to odors emanating from agricultural operations necessary for the growing of crops or the raising of fowl or animals (California Health & Safety Code, Section 41705). The SMAQMD recommends that odor impacts be addressed in a qualitative manner to determine if a project would result in excessive nuisance odors, as defined under the California Code of Regulations, Health and Safety Code Section 41700, Air Quality Public Nuisance.

3.3.3 ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

ANALYSIS METHODOLOGY

The discussion below presents the methods used for the air quality analysis and how the significance of the proposed project's air quality impacts was determined. Potential air quality impacts associated with short-term construction and long-term operations were evaluated in accordance with SMAQMD-recommended and ARB-approved methodologies.

Construction and operational emissions of criteria air pollutants were compared with the applicable thresholds of significance (described below) to determine potential impacts. SMAQMD's significance thresholds serve as a proxy for determining whether the project could violate air quality standards, cause a substantial contribution to an existing or projected air quality violation, and/or conflict with any applicable air quality plan. Please see Appendix B of the EIR for model details, assumptions, inputs, and outputs.

Construction-related emissions were modeled using the California Emissions Estimator Model (CalEEMod) Version 2016.3.2 (California Air Pollution Control Officers 2017) and the Road Construction Emissions Model Version 8.1.0 (SMAQMD 2016). Project-specific construction parameters (*e.g.*, construction schedule, total acres disturbed, quantity of import material, amount of development per land use) were used as inputs in the air quality analysis. The Road Construction Emissions Model was used to estimate construction-related emissions associated with the proposed access roads, frontage road improvements, and drainage, which was assumed to be constructed in parallel with the school site. Construction is assumed to begin in April 2019 and last approximately 16 months, through July 2020. The site is anticipated to require approximately 8 cubic yards of import material. Where project-specific information was not available, default parameters provided by each model were used. It should be noted that default assumptions in the models are typically conservative to avoid underestimating emissions when project-specific information is not available. Modeled construction-related emissions are compared with the applicable SMAQMD thresholds to determine significance.

Following construction, operation of the school would generate air pollutant emissions. CalEEMod was also used to estimate these long-term operational emissions, as well as emissions associated with area and energy sources (*i.e.*, natural gas combustion, landscape maintenance, periodic architectural coating, and consumer products). Operational emissions associated with day-to-day activities of the proposed project were quantified using CalEEMod and trip generation rates and distances were based upon the traffic study prepared in support of this EIR.

Mobile sources would involve vehicle trips, including construction trucks and passenger cars. The analysis of mobile-source emissions compares the gross mobile-source emissions (primarily generated by student transportation to and from school) with the SMAQMD thresholds of significance for project operations. CO impacts were evaluated using the screening-level procedures provided by SMAQMD (2016).

The impact analysis does not directly evaluate airborne lead. Neither construction nor future operations would generate quantifiable lead emissions because of regulations that require unleaded fuel and that prohibit lead in new building materials.

TAC emissions associated with project construction that could affect surrounding areas are evaluated qualitatively. SMAQMD has not provided guidance or adopted a threshold of significance regarding how to

evaluate TAC emissions from construction equipment. The potential for school operations to expose residents to TAC emissions that would exceed applicable health standards is also discussed qualitatively.

Lastly, SMAQMD recommends that odor impacts be addressed in a qualitative manner. Such an analysis must determine if the proposed project would result in excessive nuisance odors, as defined under California Code of Regulations, Health and Safety Code Section 41700, Air Quality Public Nuisance.

THRESHOLDS OF SIGNIFICANCE

Air quality impacts would be considered significant if they would exceed the following thresholds of significance, which are based on Appendix G of the CEQA Guidelines and SMAQMD's *Guide to Air Quality Assessment in Sacramento County* (SMAQMD 2017c). According to Appendix G of the CEQA Guidelines, the proposed project could have a significant impact on air quality if it would:

- ▶ conflict with or obstruct implementation of the applicable air quality plan,
- ▶ violate any air quality standard or contribute substantially to an existing or projected air quality violation,
- ▶ result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable NAAQS or CAAQS (including releasing emissions that exceed quantitative thresholds for ozone precursors),
- ▶ expose sensitive receptors to substantial pollutant concentrations, or
- ▶ create objectionable odors affecting a substantial number of people.

As stated in Appendix G of the CEQA Guidelines, the significance criteria established by the applicable air quality management district may be relied on to make the above determinations. Thus, pursuant to the SMAQMD-recommended thresholds (SMAQMD 2016) for evaluating project-related air quality impacts, the project's impacts would be considered significant if the project would:

- ▶ generate construction-related criteria air pollutant or precursor emissions that exceed the SMAQMD-recommended daily thresholds of 85 pounds per day (lb/day) for NO_x, 80 lbs/day of PM₁₀, 82 lbs/day of PM_{2.5}, or result in or substantially contribute (at a level equal to or greater than 5 percent of a CAAQS) to a violation of a CAAQS;
- ▶ generate long-term regional criteria air pollutant or precursor emissions that exceed the SMAQMD-recommended daily thresholds of 65 lb/day of VOC or NO_x, 80 lbs/day of PM₁₀, 82 lbs/day of PM_{2.5}, or result in a violation of the CAAQS or result in or substantially contribute (at a level equal to or greater than 5 percent of a CAAQS) to a violation of a CAAQS;
- ▶ contribute to localized concentrations of air pollutants at nearby receptors that would exceed applicable ambient air quality standards; or
- ▶ expose sensitive receptors to excessive nuisance odors, as defined under SMAQMD Rule 402 (see, "Regulatory Setting," above).

Since there is considerable overlap between the threshold questions, this section has been organized to address the following:

- ▶ Short-term, construction-related emissions
- ▶ Long-term, operational emissions
- ▶ Exposure of sensitive receptors to substantial pollutant concentrations; and
- ▶ Exposure to objectionable odors.

Two of the Appendix G checklist questions address conflicts with an air quality plan and contribution to an air quality violation. The criteria air pollutant significance thresholds serve as a proxy for these impacts, and therefore, the evaluation of potential conflicts with air quality plans and air quality violations is consolidated.

For cumulative impacts, SMAQMD states that if a project's impacts would be significant at the project-level (i.e., exceed any of the thresholds listed above), it could also be considered significant on a cumulative level (SMAQMD 2016). Chapter 5 of this EIR addresses cumulative impacts in detail.

IMPACT ANALYSIS

IMPACT 3.3-1 Potential Generation of Temporary, Short-Term, Construction-Related Emissions of Criteria Pollutants and Precursors. *Construction could generate emissions of criteria air pollutants or ozone precursors that could violate an ambient air quality standard or contribute substantially to an existing or predicted air quality violation by exceeding the SMAQMD daily construction emissions thresholds. This impact would be potentially significant.*

Construction emissions are described as short-term or temporary in duration but have the potential to adversely affect air quality. Construction-related activities would result in temporary emissions of criteria air pollutants (e.g., PM₁₀, PM_{2.5}, CO) and ozone precursors (e.g., VOC and NO_x) from ground disturbing activities (e.g., excavation, grading, and clearing); exhaust emissions from use of off-road equipment, material delivery, and construction worker commutes; building construction; asphalt paving; and application of architectural coatings.

Ozone precursor emissions of VOC and NO_x are associated primarily with construction equipment exhaust and the application of architectural coatings. As discussed above, SMAQMD has not adopted a construction emissions threshold for VOC. However, a mass emission threshold of 85 lb/day for construction emissions applies to NO_x.

PM emissions are associated primarily with fugitive dust generated during site preparation and grading and vary depending on the soil silt content, soil moisture, wind speed, acreage of disturbance, vehicle travel to and from the construction site, and other factors. PM emissions are also generated by equipment exhaust and re-entrained road dust from vehicle travel on paved and unpaved surfaces.

Table 3.3-4 summarizes the maximum daily emissions of VOC, NO_x, PM₁₀, and PM_{2.5} associated with each phase of each construction, as well as for the overall construction period. Refer to Appendix B for model output files and assumptions.

**Table 3.3-4.
Summary of Modeled Maximum Daily Construction-Related Emissions of
Criteria Air Pollutants and Precursors**

Portion of Construction Phase	Maximum Daily Emissions (lb/day)			
	VOC	NO _x	PM ₁₀	PM _{2.5}
2019				
<i>Site Prep*</i>	4.4	47.6	25.4	13.0
<i>Grading*</i>	10.6	118.7	19.2	9.6
<i>Building Construction*</i>	7.9	74.8	11.5	4.9
2020				
<i>Building Construction*</i>	7.5	72.3	11.4	4.8
<i>Paving*</i>	2.6	14.1	0.9	0.7
<i>Architectural Coating</i>	47.9	1.9	0.6	0.2
Maximum daily emissions	47.9	118.7	25.4	13.0
SMAQMD significance threshold	-	85	80	82
Exceeds Threshold?	-	Yes	No	No
Notes: lb/day = pounds per day; NO _x = oxides of nitrogen; PM ₁₀ = respirable particulate matter with an aerodynamic diameter of 10 micrometers or less; PM _{2.5} = respirable particulate matter with an aerodynamic diameter of 2.5 micrometers or less; VOC = volatile organic compounds; SMAQMD = Sacramento Metropolitan Air Quality Management District.				
* Includes emissions for parallel phase of construction of site access roads and drainage, as modelled using Road Construction Emissions Model.				
Source: AECOM 2018; See Appendix B for detailed modeling assumptions, outputs, and results.				

As shown in Table 3.3-4, the modeled daily emissions generated by construction-related activities would exceed the SMAQMD-recommended threshold of significance for NO_x, and therefore could violate or contribute substantially to an existing or projected air quality violation. In addition, SMAQMD recommends that all construction projects implement SMAQMD’s Basic Construction Emission Control Practices (SMAQMD 2010). SMAQMD’s Basic Construction Emission Control Practices include such measures as watering the construction site twice daily, limiting vehicle speeds on unpaved roadways to 15 miles per hour, minimizing vehicle idling, covering haul trucks transporting soil, and cleaning paved roads. Without incorporation of SMAQMD’s Basic Construction Control Practices, and because NO_x emissions would exceed the SMAQMD threshold, this impact of short-term construction-related activities would be **potentially significant**.

Mitigation Measure 3.3-1a: Implement the SMAQMD Basic Construction Emission Control Practices.

NUSD shall require that the construction contractor comply with Basic Construction Emission Control Practices identified by the SMAQMD and listed below or as they may be updated in the future:

- 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 track out mud or dirt onto adjacent public roads at least once a day. Use of dry powered 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) 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 determine to be running in proper condition before it is operated.

Mitigation Measure 3.3-1b: Implement the SMAQMD Enhanced Exhaust Control Practices.

NUSD shall require that the construction contractor adheres to the following SMAQMD Enhanced Exhaust Control Practices as listed below, or as they may be updated in the future, which are shown to be effective in reducing NO_x emissions:

- Submit to SMAQMD a comprehensive inventory of all off-road construction equipment, equal to or greater than 50 horsepower, that would be used an aggregate of 40 or more hours during any portion of the construction project. The inventory shall include the horsepower rating, engine production year, and projected hours of use for each piece of 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.
- Provide a plan, for approval by SMAQMD, demonstrating that the heavy-duty (50 horsepower [hp] or more) off-road vehicles to be used in the construction project, including owned, leased, and subcontractor vehicles, will achieve a project wide fleet-average of 20% NO_x reduction and 45% particulate reduction compared to the most current California Air Resources Board (ARB) fleet average that exists at the time of construction. SMAQMD's Construction Mitigation Calculator can be used to identify an equipment fleet that achieves this reduction.
- 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.
- At least 4 business days prior to the use of heavy-duty off-road equipment, the project representative shall provide SMAQMD with the anticipated construction timeline including start date, and name and phone number of the project manager and on-site foreman.
- Ensure that emissions from all off-road diesel powered equipment 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 shall 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, and a monthly summary of the visual survey results shall be submitted throughout the duration of the project, except that the monthly summary 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.

- SMAQMD staff and/or other officials may conduct periodic site inspections to determine compliance.

Mitigation Measure 3.3-1c: Use Current Phase Equipment for all Construction Off-Road Vehicles and Equipment.

NUSD shall require that the construction contractor use current phase off-road construction vehicles and equipment (currently Tier 4) for construction-related activities.

Significance after Mitigation

Implementation of Mitigation Measures 3.3-1a through 3.3-1c would reduce on-site construction-related air quality emissions. Implementation of Mitigation Measure 3.3-1b would achieve a project wide fleet-average of 20 percent NO_x reduction and 45 percent particulate reduction compared to the most current California Air Resources Board (ARB) fleet average that exists at the time of construction. A 20 percent reduction of NO_x from off-road equipment and vehicles would not achieve SMAQMD thresholds of significance. However, as shown in Table 3.3-5, implementation of Mitigation Measure 3.3-1c would reduce NO_x emissions to below SMAQMD thresholds of significance. Thus, with implementation of mitigation, this impact would be **less than significant**.

Table 3.3-5. Summary of Modeled Maximum Daily Construction-Related Emissions of Criteria Air Pollutants and Precursors with Implementation of Mitigation				
Portion of Construction Phase	Maximum Daily Emissions (lb/day)			
	VOC	NO _x	PM ₁₀	PM _{2.5}
2019				
<i>Site Prep*</i>	0.8	3.2	23.3	11.1
<i>Grading</i>	3.4	9.2	14.3	5.1
<i>Building Construction*</i>	4.2	22.8	8.8	2.3
2020				
<i>Building Construction*</i>	4.0	21.3	8.7	2.3
<i>Paving*</i>	1.5	1.3	0.2	0.1
<i>Architectural Coating</i>	47.9	0.3	0.5	0.1
Maximum daily emissions	47.9	22.8	23.3	11.1
SMAQMD significance threshold	-	85	80	82
Exceeds Threshold?	-	No	No	No
Notes: lb/day = pounds per day; NO _x = oxides of nitrogen; PM ₁₀ = respirable particulate matter with an aerodynamic diameter of 10 micrometers or less; PM _{2.5} = respirable particulate matter with an aerodynamic diameter of 2.5 micrometers or less; VOC = volatile organic compounds; SMAQMD = Sacramento Metropolitan Air Quality Management District.				
* Includes emissions for parallel phase of construction of site access roads and drainage, as modelled using Road Construction Emissions Model.				
Source: AECOM 2018; See Appendix B for detailed modeling assumptions, outputs, and results.				

IMPACT 3.3-2 *Generation of Long-Term Operational Emissions of Criteria Pollutants and Precursors. Long-term operational emissions associated with day-to-day school activities would not exceed any of the SMAQMD thresholds of significance. Thus operation-related emissions of criteria air pollutants and precursors would not violate or contribute substantially to an existing or projected air quality violation or conflict with air quality planning efforts. This impact would be less than significant.*

Daily activities associated with long-term school operations would generate criteria air pollutant emissions and precursors from mobile, energy, and area sources. Mobile sources include vehicle trips arriving at, and departing from the proposed school. Area sources include consumer products (i.e., cleaning supplies, kitchen aerosols, toiletries), natural gas combustion for water and space heating, landscape maintenance equipment, and periodic architectural coatings. While construction emissions are considered short-term and temporary, operational emissions are considered long-term and would occur for the lifetime of the project. Therefore, operational emissions have greater potential to affect the attainment status of an air basin, particularly as a result of increased traffic.

As described above, long-term emissions were modeled using CalEEMod Version 2016.3.2. As shown in Table 3.3-6, the school’s total operational emissions would not exceed any SMAQMD threshold.

While there would be a shift of some students from existing schools in the district to the proposed school (and potentially shorter driving distances), this impact evaluation provides a conservative analysis by comparing the project’s gross emissions (i.e., without accounting for the shift of students already attending district schools) with the SMAQMD thresholds of significance. “Conservative” in this case means that the methodology would tend to overestimate emissions. This comparison to the SMAQMD thresholds shows that school operations would not contribute substantially to any existing or projected air quality violation and would not conflict with efforts to reach attainment of any air quality standards. Therefore, the school’s long-term operational impact would be **less than significant**.

Table 3.3-6. Summary of Modeled Maximum Daily Long-Term Operational Emissions of Criteria Air Pollutants and Precursors¹				
Emissions Source	Daily Emissions (lbs/day)			
	VOC	NO _x	PM ₁₀	PM _{2.5}
Area	2.35	0.00	0.00	0.00
Energy	0.04	0.37	0.03	0.03
Mobile	3.47	7.64	0.89	0.28
Total Operational Emissions²	4.82	10.75	5.87	1.64
SMAQMD Thresholds of Significance	65	65	80	82
Exceeds Thresholds?	No	No	No	No
Notes: lbs/day = pounds per day; ROG = reactive organic gases; NO _x = oxides of nitrogen; PM ₁₀ = respirable particulate matter; PM _{2.5} = fine particulate matter; SMAQMD = Sacramento Metropolitan Air Quality Management District				
¹ Operational emissions were modeled for year 2020.				
² Total emissions may not add correctly due to rounding.				
Source: AECOM 2018; See Appendix B for detailed modeling assumptions, outputs, and results.				

Mitigation Measures

No mitigation measure is required.

IMPACT 3.3-3 **Generation of Local Mobile-Source CO Emissions.** *Because school operations would not result in or substantially contribute to CO concentrations that would exceed the California 1-hour ambient-air quality standard of 20 ppm or the 8-hour standard of 9.0 ppm, this impact would be **less than significant**.*

CO concentration is a direct function of vehicle idling time and, thus, traffic flow conditions. Under stagnant meteorological conditions, CO concentrations near congested roadways and/or intersections may reach unhealthy levels that adversely affect nearby sensitive land uses.

Local mobile-source CO concentrations were assessed using a screening-level procedure provided by SMAQMD (SMAQMD 2016). SMAQMD recommends a two-tiered screening approach to determine whether traffic would cause a potential CO hotspot at affected intersections. The first tier states that the project's CO impact would be less than significant if:

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

If the first tier of screening criteria is not met, SMAQMD provides a second tier screening step which states that the project's CO impacts would be less than significant if:

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

Under existing plus project conditions, according to the traffic analysis (see Section 3.13), all affected intersections would operate at LOS of D or better with implementation of the proposed project. Traffic generated by the proposed project would not result in deterioration of intersection level of service and would not contribute additional traffic to an intersection that already operates at LOS of E or F.

Given the project meets the SMAQMD recommended first-tier screening criteria, the low level of traffic, and improved vehicle emission standards for CO, the proposed school would not violate air quality standards for CO. Therefore, this impact is **less than significant**.

Mitigation Measures

No mitigation measure is required.

IMPACT 3.3-4 Exposure of Sensitive Receptors to Toxic Air Contaminant Emissions. *Because neither the short-term construction nor the long-term operation of the proposed project would result in the exposure of sensitive receptors to substantial concentrations of TAC emissions for an extended period of time, this impact would be less than significant.*

The exposure of sensitive receptors (e.g., existing off-site residents) to TAC emissions from short-term (construction) and long-term operational (mobile, stationary, and other) sources is discussed separately below.

Short-Term Construction Emissions and Exposure to TACs at Surrounding Land Uses

Construction would generate DPM emissions from the use of off-road diesel-powered equipment required for site grading and excavation, paving, and other construction activities. These activities may expose nearby receptors to TACs, including residents in adjacent areas; the nearest residence is located approximately 200 feet (60 meters) east of the project site. This would particularly be the case during grading, which involves using the largest number of equipment at heavy loads (i.e., graders, scrapers, dozers). Most DPM emissions associated with material delivery trucks and construction worker vehicles would occur off-site. For this analysis, DPM is considered to be less than or equal to 10 micrometers in diameter. Therefore, PM₁₀ represents the upper limit for DPM emissions associated with construction of the proposed project.

Receptor dose is the primary factor used to determine health risk and is a function of exposure concentration and duration. However, even in intensive phases of construction, there would not be substantial pollutant concentrations, with the potential exception of the immediate vicinity of the construction site, as concentrations of mobile-source DPM emissions are typically reduced by approximately 60 percent at a distance of around 300 feet (100 meters) (Zhu and Hinds 2002). Residences are only near the eastern perimeter of the project site and construction activities would be dispersed throughout the entire project site. In addition, wind has been shown to be an important determining factor in the distribution of DPM. In the region of the project site, the prevailing winds are northward, thereby typically carrying DPM away from nearby sensitive receptors.

The use of newer off-road equipment is also effective in reducing PM emissions from off-road equipment used during construction; while not required, these vehicles are increasingly in use in construction equipment fleets. In January 2001, EPA promulgated a final rule to reduce emissions standards for heavy-duty diesel engines in 2007 and subsequent model years. These emissions standards represent a 90 percent reduction in NO_x emissions, 72 percent reduction of non-methane hydrocarbon emissions, and 90 percent reduction of PM emissions, in comparison to the emissions standards for the 2004 model year. In December 2004, ARB adopted a fourth phase of emission standards (Tier 4) in the Clean Air Non-road Diesel Rule that are nearly identical to those finalized by EPA on May 11, 2004. Tier 4 emission standards requires engine manufacturers to meet after-treatment-based exhaust standards for NO_x and PM starting in 2011 that are more than 90 percent lower than current levels, putting emissions from off-road engines virtually on par with those from on-road heavy-duty diesel engines.

The total construction period is projected to require 16 months. As a result, the exposure of sensitive receptors to construction emissions would be short term, intermittent, and temporary in nature. 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 extent to which a person is exposed to the substance. As shown in Table 3.3-4 of Impact 3.3-1, PM₁₀ emissions during construction-related activities are estimated to be approximately 13 lb/day at a maximum, and at times, as low as 0.2 lb/day. Dose is positively correlated with time,

meaning that a longer exposure period would result in a higher exposure level for the maximally exposed individual. Thus, the risks estimated for such an individual are higher if a fixed exposure occurs over a longer period of time. Health effects from TACs are often described in terms of individual cancer risk, which is based on a 30-year lifetime exposure to TACs (OEHHA 2015). Construction activities for the proposed project are anticipated to last approximately 16 months and would cease following completion of the proposed project. Even during this period of time, construction activities would vary in activity and equipment intensity, and would take place throughout the entirety of the project site. It is not anticipated that individual receptors would be exposed to substantial TAC emissions from the proposed project for longer than 16 months. If the duration of construction activities near a sensitive receptor was for the entirety of 16 months, which is not anticipated, then the exposure would be less than five percent of the total exposure period used for typical health risk calculations (i.e., 30 years).

Because the construction activities that could result in TAC emissions would be temporary, in combination with the dispersive properties of DPM and prevailing winds being directed away from sensitive receptors in the area, as well as the fact that PM emissions would be less than SMAQMD emission thresholds, short-term construction would not expose sensitive receptors to DPM emission levels that would result in a health hazard. As a result, this impact would be **less than significant**.

It should also be noted that, with implementation of Mitigation Measures 3.3-1a through 3.3-1c for Impact 3.3-1, potential TAC emissions from construction-related activities, particularly NO_x and PM, would be further reduced, correlating to a reduction in potential exposure of sensitive receptors to TAC emissions during construction.

Land Use Compatibility and Exposure to TACs from Nearby Land Uses

The proposed school would result in an increase of daily traffic trips to and from the project site. Because children are particularly sensitive to elevated concentrations of TACs, ARB recommends that the project site be assessed with regard to the compatibility of surrounding land uses that may be sources of TAC emissions. This recommendation coincides with hazards evaluations required under CEQA and school siting requirements of the California Department of Education, as well.

ARB's *Air Quality and Land Use Handbook: A Community Health Perspective* (Handbook) provides guidance concerning land use compatibility with regard to sources of TAC emissions (ARB 2005). The handbook offers recommendations for siting sensitive receptors near uses associated with TACs (e.g., freeways and high-traffic roads, commercial distribution centers, rail yards, ports, refineries, dry cleaners, gasoline stations, industrial facilities). While the handbook is advisory and not regulatory, it offers the following recommendations that are pertinent to the proposed project:

- ▶ Avoid siting new sensitive land uses within 500 feet of a freeway, urban roads carrying 100,000 vehicles per day, or rural roads carrying 50,000 vehicles per day.
- ▶ Avoid siting new sensitive land uses within 1,000 feet of a major service and maintenance rail yard.
- ▶ Avoid siting new sensitive land uses within 300 feet of a large gasoline station (defined as a facility with a throughput of 3.6 million gallons per year or greater). A 50-foot separation is recommended for typical gasoline dispensing facilities.

- ▶ Avoid siting new sensitive land uses within 300 feet of any dry-cleaning operation using perchloroethylene. For operations with two or more machines, provide 500 feet. For operations with three or more machines, consult the local air district. Do not site new sensitive land uses in the same building with dry-cleaning operations that use perchloroethylene.

The 2017 ARB Technical Advisory identifies strategies to reduce air pollution exposure near roadways, including those to reduce traffic emissions, such as incorporation of roundabouts for speed reduction, traffic signal management, and speed limit reductions on high-speed roadways (those greater than 55 miles per hour); strategies that reduce the concentrations of traffic pollution, such as urban design to promote air flow, solid barriers to pollution, and vegetation to reduce pollutant concentrations; and strategies that remove pollution from indoor air such as through high efficiency filtration. This Technical Advisory does not negate the ARB Handbook, but offers multiple variables for consideration when planning development and proximity of receptors.

The project site is consistent with all the recommendations described above per the ARB Handbook. The new school would be located more than one-half mile from the nearest freeways (i.e., I-5/SR 99), which exceeds the 500 feet buffer recommended by ARB. In addition, the new school would not be located within 1,000 feet of a major service or maintenance rail yard, 300 feet of a large gasoline station, 50 feet of a typical gasoline dispensing facility, or 500 feet of any dry-cleaning operation using perchloroethylene. Therefore, the siting of the new school would be consistent with all of the ARB recommendations listed above to avoid and minimize impacts from TACs and thus would not result in the exposure of sensitive receptors to TACs that exceed the recommended thresholds. Across a 200-foot buffer and the West Drainage Canal from the proposed school site is agricultural land owned by The Natomas Basin Conservancy for natural resources and currently planted with alfalfa. State regulations control the application of pesticides, with specific provisions for school sites to protect human health and the environment. California Department of Pesticide Regulations' evaluation of toxicity and exposure indicate that the risk to children from agricultural pesticides applied near schools is low for most pesticides (Department of Pesticide Regulation 2016). For pesticide application at The Natomas Basin Conservancy land west of the proposed school site, State regulations require at least a 25-foot buffer and the buffer for the proposed project would be approximately 300 feet (Roberts, pers. comm. 2018; California Department of Pesticide Regulations 2018). As a result, this impact would be **less than significant**.

Mitigation Measures

No mitigation measure is required.

IMPACT 3.3-5 **Exposure of Sensitive Receptors to Objectionable Odors.** *Short-term odorous emissions from diesel exhaust from on-site construction equipment would be temporary and intermittent in nature and dissipate rapidly from the source. The proposed project would not include the long-term operation of an odorous emission source and no substantial existing odor sources are adjacent to the site. Therefore, the proposed project would not result in the exposure of sensitive receptors to objectionable odors. This impact would be less than significant.*

Odor Emissions Related to Short-Term Construction

The predominant source of power for construction equipment is diesel engines. Exhaust odors from diesel engines and emissions associated with asphalt paving and the application of architectural coatings may be considered offensive to some individuals. Depending on the wind direction, residents to the east may be exposed to odors

from diesel exhaust associated with grading and asphalt paving activities. However, because the prevailing wind direction is opposite the direction of these residents, as well as the fact that odors would be temporary and disperse rapidly with distance from the source, construction-generated odors would not result in the frequent exposure of receptors to objectionable odor emissions. Furthermore, NUSD is required to comply with SMAQMD Rules 402 (Nuisance) and 442 (Architectural Coatings) (described in the regulatory setting above), which would ensure that odors generated by short-term construction would not affect a substantial number of people. Therefore, this impact would be **less than significant**.

Odor Emissions Related to Long-Term Operations

Schools are not typically considered to be sources of objectionable odors. Industries and/or facilities that are likely to emit objectionable odors include wastewater treatment plants, landfills, composting facilities, petroleum refineries, and manufacturing plants. The proposed project would not include any of these types of facilities. Other minor sources of odor that could be generated during operations of the school include landscaping equipment and cooking for the cafeteria. These activities would take place intermittently each day and the nearby sensitive receptors are located opposite the direction of the prevailing winds in the area. As a result, this impact would be **less than significant**.

Residential and agricultural uses surround the project site. Agricultural uses in the vicinity do not include raising of livestock or other practices that are known to generate odors. As discussed above, the existing adjacent residents of the Westlake subdivision have not filed any odor complaints concerning these uses (SMAQMD 2017c). Therefore, the proposed project would not expose sensitive receptors at the project site to objectionable odors from off-site. As a result, this impact would be **less than significant**.

Mitigation Measures

No mitigation measure is required.

3.4 BIOLOGICAL RESOURCES

This section evaluates the potential impacts of school construction and operation on biological resources. It describes current site conditions and potentially occurring special-status plant and wildlife species based on a literature review and reconnaissance-level biological surveys conducted on January 15, 2009 and February 11, 2016, and a protocol burrowing owl survey on September 25, 2018. This section then evaluates potential impacts on biological resources and provides avoidance, minimization, and mitigation measures proposed to reduce potentially significant impacts.

3.4.1 ENVIRONMENTAL SETTING

The approximately 34-acre project site is located in northwestern Sacramento County, approximately 1 mile east of the Sacramento River. The project site is in the Natomas Basin adjacent to the Reclamation District 1000 (RD-1000) West Drainage Canal. Historically, the project site has been used for agricultural crop production, including wheat, barley, and rice. The last year of rice production was 2002, and in 2006 and 2007, the site was in wheat production; however, grass hay (oat and rye) has been grown on the site since it was purchased by the Natomas Unified School District in 2007, and it has been cut periodically.

The project site is bordered on the east by a vacant parcel and a developed residential area, and on the south by agricultural land, Del Paso Road, and additional residential development (Exhibit 3.4-1). To the north and west, the site is bordered by a 200-foot-wide portion of an adjacent parcel and the West Drainage Canal. The West Drainage Canal extends to the southwest and northeast along the boundary of the adjacent parcel that surrounds the proposed school site. A 200-foot wide parcel extends along the entire eastern edge of the proposed school site. An abandoned agricultural ditch also runs along the eastern edge of the agricultural easement.

Surrounding land uses include agricultural lands to the north, residential development to the east and south, across Del Paso Road, and The Natomas Basin Conservancy (TNBC) preserve lands to the west (across the West Drainage Canal). TNBC preserve lands are managed as habitat for species covered under the Natomas Basin Habitat Conservation Plan (NBHCP) (TNBC 2016). TNBC's Rosa East tract – directly to the west – comprises three agricultural fields totaling 106 acres that are planted with alfalfa and are part of TNBC's Fisherman's Lake Reserve (TNBC 2016). The West Drainage Canal has a wide, deep channel and steep banks. It does not support marsh or aquatic vegetation within the vicinity of the project site, but there are clumps of valley riparian habitat along its banks with willow, valley oak (*Quercus lobata*), and Fremont cottonwood (*Populus fremontii*) trees. The West Drainage Canal merges with Fisherman's Lake approximately 0.3-mile southwest of the project site. Fisherman's Lake is a natural slough that supports valley riparian habitat and freshwater marsh that provide suitable habitat for giant garter snake (*Thamnophis gigas*) and other species covered under the NBHCP (TNBC 2016).

AGRICULTURAL AND RUDERAL HABITAT

Land cover of the project site and adjacent areas is shown on Exhibit 3.4-1, and is based on aerial imagery and a site visit conducted in February 2016; land cover was confirmed again in September 2018 during a protocol burrowing owl survey. The entire project site and the parcel to the south comprise fallow agricultural fields bordered by ruderal habitat. A barren, dirt two-track road is located within the ruderal habitat along the northern, western, and southwestern border of the agricultural fields, and between the West Drainage Canal and the western



Source: AECOM 2018

Exhibit 3.4-1. Project Site and Wildlife Habitat in the Vicinity of the Project Site

border of the agricultural fields. As observed during site visits in 2016 and 2018, the site is dominated by oat (*Avena* sp.) and Italian ryegrass (*Festuca perennis*), with other nonnative grasses and weedy forbs along the edges. This is consistent with the data collected during a 2007 wetland delineation, which noted that the site is dominated by weedy nonnative forbs and grasses typically found in ruderal fields in the Central Valley (Foothill Associates 2007), and an updated wetland delineation conducted in November 2016 (Foothill Associates 2016). Species documented on the project site include California burclover (*Medicago polymorpha*), blessed milk thistle (*Silybum marianum*), prickly lettuce (*Lactuca serriola*), bristly ox-tongue (*Helminthotheca echioides*), cutleaf geranium (*Geranium dissectum*), chicory (*Cichorium intybus*), field mustard (*Brassica nigra*), and Bermuda grass (*Cynodon dactylon*). The abandoned agricultural ditch located to the east of the site is characterized by the same ruderal vegetation, but also contains scattered willow (*Salix* sp.) shrubs.

FISH HABITAT

The West Drainage Canal provides potential aquatic habitat for common fishes, such as Mosquitofish (*Gambusia affinis*) and for federally listed species and State Species of Special Concern. The West Drainage canal connects with the Natomas Cross Canal upstream of the project site (see Exhibit 3.9-1 in Section 3.9, “Hydrology and Water Quality”). The Natomas Cross Canal flows freely to the Sacramento River, which allows volitional movement of anadromous species into the Natomas Cross Canal, and potentially near the project site. Anadromous salmonids, including Chinook Salmon (*Oncorhynchus tshawytscha*) and Central Valley Steelhead (*Oncorhynchus mykiss irideus*) have been observed using the Natomas Cross Canal and natural stream channels tributary to the Natomas Cross Canal. Additionally, because the Natomas Cross Canal is hydrologically connected to the West Drainage Canal, the potential for migrating anadromous salmonids adjacent to the project site exists. Therefore, the West Drainage Canal is considered potential habitat for special status anadromous salmonids. Specifically, adult anadromous salmonids migrating upstream to spawning tributaries and juveniles migrating downstream to the Sacramento River could inadvertently enter the West Drainage Canal via the Natomas Cross Canal.

Direct volitional movement of fish between the Sacramento River and the West Drainage Canal does not occur because the West Drainage Canal does not flow freely into the river. Therefore, it is unlikely that anadromous salmonids would use areas adjacent to the project site as frequently as a migration corridor or would be present in any significant numbers. Nonetheless, the West Drainage Canal is connected to the Sacramento River upstream of the project site via RD 1000 Pumping Plant No. 5, downstream of the project site via RD 1000 Pumping Plant No. 3, and downstream of the confluence with the Main Drainage Canal approximately four miles downstream of the project site via RD 1000 Pumping Plant No. 1.

WILDLIFE HABITAT

Prior to European settlement, the Sacramento River floodplain, which included the area of the Natomas Basin, supported a wide diversity of wildlife species associated with its riparian habitats, permanent and seasonal wetlands, and oak woodlands and savannas. Much of this habitat was lost after levees were built to prevent flooding on the Sacramento and American rivers. Initially, land within the Natomas Basin was converted to agriculture; however, more recent land conversions have been to urban development in the city of Sacramento. The levees and land conversion altered the native habitat, but the agricultural fields and associated irrigation and drainage features continue to provide habitat for numerous common and special-status wildlife species.

The project site provides habitat for wildlife species commonly found on agricultural land in the Natomas Basin. The agricultural and ruderal habitat provides potential nesting habitat for common grassland birds, such as western meadowlark (*Sturnella neglecta*). It also provides foraging habitat for songbirds such as savannah sparrow (*Passerculus sandwichensis*) and American pipit (*Anthus rubescens*), and for raptors, such as white-tailed kite (*Elanus leucurus*), northern harrier (*Circus cyaneus*), red-tailed hawk (*Buteo jamaicensis*), and Swainson's hawk (*Buteo swainsoni*). Mammals expected to occur on the project site include raccoon (*Procyon lotor*), coyote (*Canis latrans*), California vole (*Microtus californicus*), and California ground squirrel (*Spermophilus beecheyi*).

The nearby West Drainage Canal provides potential aquatic habitat for amphibians such as bullfrog (*Rana catesbeiana*) and Pacific chorus frog (*Pseudacris regilla*), and the large trees along the West Drainage Canal southwest of the project site provide potential nest sites for raptors, including Swainson's hawk and white-tailed kite. The canal also provides potential habitat for the giant garter snake, which is federally listed and State listed as threatened, and for western pond turtle (*Emys marmorata*), a California species of special concern.

SPECIAL-STATUS SPECIES

The following sections identify the special-status species of plants and wildlife that have the potential to occur on the project site or surrounding area and are legally protected or otherwise considered sensitive by federal, state, or local resource conservation agencies and organizations. These species include:

- ▶ plant and wildlife species listed under the federal Endangered Species Act (ESA) and/or California Endangered Species Act (CESA) as rare, threatened, or endangered;
- ▶ plant and wildlife species considered candidates for listing or proposed for listing;
- ▶ wildlife species identified by the California Department of Fish and Wildlife (CDFW) as fully protected and/or species of special concern;
- ▶ plants considered by CDFW to be rare, threatened, or endangered;
- ▶ plants and wildlife species covered by the NBHCP; and
- ▶ plant species designated special-status, sensitive, or declining by other federal or State agencies or nongovernmental organizations.

To identify special-status species previously recorded in the vicinity of the project site or that could be affected by the project due to the presence of potentially suitable habitat, several online databases and reports were reviewed, including the California Natural Diversity Database (CNDDDB 2018), the U.S. Fish and Wildlife Service (USFWS) Information, Planning, and Conservation System (IPaC) (USFWS 2016), the NBHCP (City of Sacramento et al 2003), and annual monitoring reports provided by the TNBC from 2007 to 2018 (TNBC 2007, 2008, 2015, 2016, 2017a, 2018).

The CNDDDB database search queried documented occurrences of special-status species from nine U.S. Geological Survey 7.5-minute quadrangles that include and surround the project site. The project site is located in the Taylor Monument quadrangle and the surrounding eight quadrangles include Knights Landing, Verona, Rio Linda, Sacramento East, Pleasant Grove, Grays Bend, Davis, and Sacramento West. Special-status species occurrences documented in the CNDDDB within a 2-mile radius of the project site are shown in Exhibit 3.4-2;

however, the TNBC and others have documented special-status species at other locations near the project site that have not been reported to CNDDDB and are not presented in Exhibit 3.4-2, but are included in Table 3.4-3, Special-Status Wildlife Species with Potential to Occur in the Natomas Basin.

Special-Status Plants

The database searches and literature review identified 20 special-status plant species known or with potential to occur in the general vicinity of the project site. However, the project site is an agricultural field currently used for grass hay production and does not contain habitat for any special-status plant species. Annual harvesting precludes the establishment of natural plant communities on the project site. None of the special-status plant species covered under the NBHCP has been detected in the Natomas Basin (TNBC 2018: 2-6).

Special-Status Fish and Wildlife

Based on the results of the CNDDDB search and literature review, 38 special-status fish and wildlife species were evaluated for their potential to occur in the project vicinity and on the project site. Table 3.4-1 summarizes the regulatory status and habitat association for each species. Ten of the 38 special-status species were determined to have the potential to occur on or adjacent to the project site and are discussed further below. The remaining 28 species are not addressed further in this section because the project area either does not support their habitat or is outside of their range.

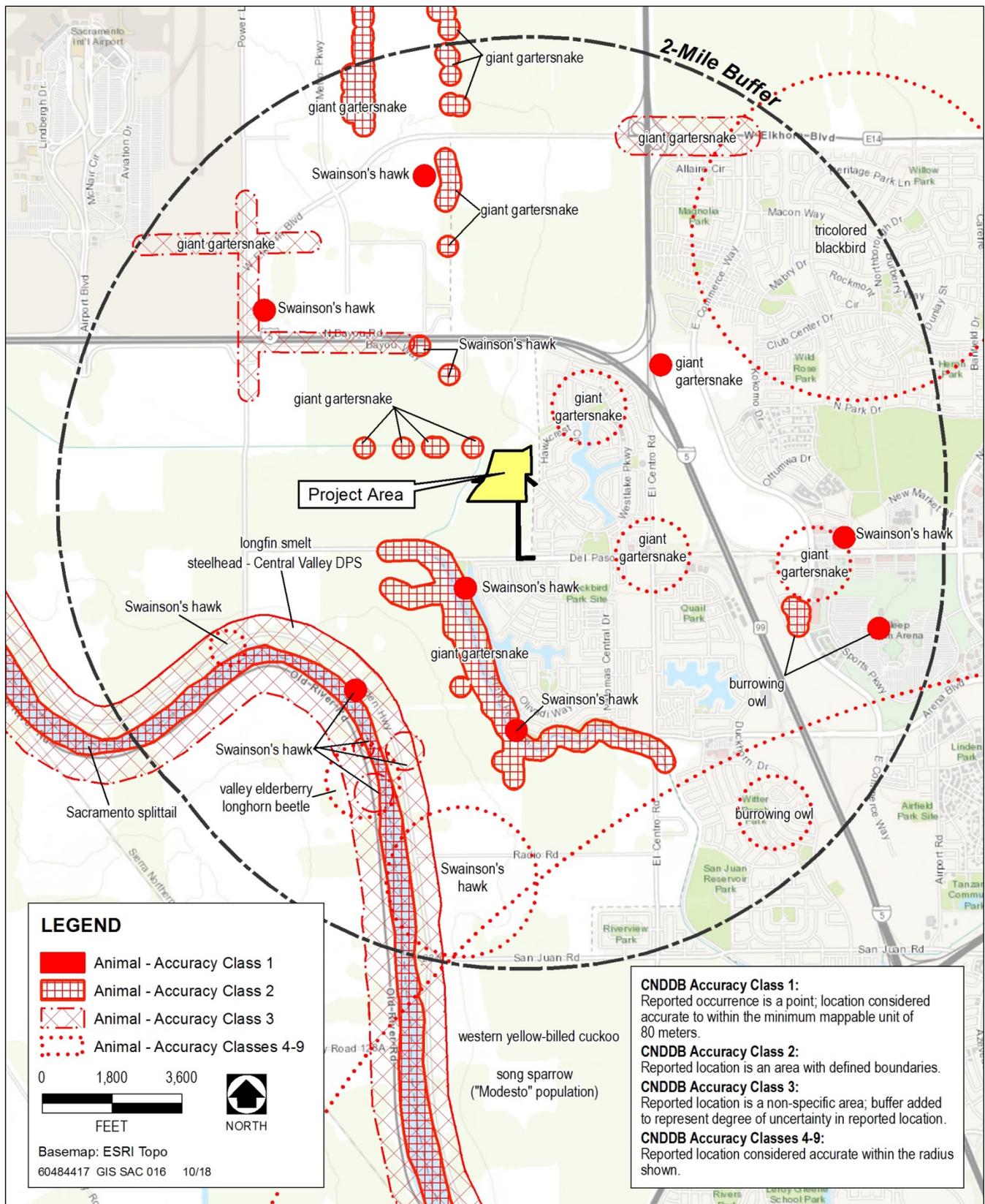
The following paragraphs provide additional information about the special-status species that could occur on or adjacent to the project site.

Steelhead – Central Valley DPS

The Central Valley Steelhead Distinct Population Segment (DPS) was listed as threatened under the ESA on January 5, 2006 (71 FR 834). The DPS consists of Steelhead populations in the Sacramento River and San Joaquin River (inclusive of and downstream of the Merced River) basins in California's Central Valley. Critical habitat was designated for Central valley steelhead on September 2, 2005 (70 CFR 52488).

Steelhead require relatively clean, cool (less than 14°C [57°F]) water to spawn successfully. Steelhead fry tend to inhabit areas with cobble-rubble substrate, a depth less than 14 inches, and temperature ranging from 45 to 60°F (7 to 15.5°C; Bovee 1978, as cited in McEwan and Jackson 1996). Steelhead rearing during the summer takes place primarily in higher velocity areas in pools, although young-of-the-year also are abundant in glides and riffles. Productive Steelhead habitat is characterized by habitat complexity, primarily in the form of large and small woody debris. Cover is an important habitat component for juvenile Steelhead both as velocity refugia and as a means of avoiding predation (McEwan and Jackson 1996).

Steelhead juveniles spend a minimum of 1 year, but typically 2 years, in fresh water before emigrating to the ocean as smolts. Smolt emigration generally occurs from November to May, although based on salvage data at the state and federal pumping plants in the Delta, the peak months for emigration in most years appear to be March and April. After spending 2 to 3 years in the ocean, steelhead return to their natal stream to spawn when they are 4 or 5 years old.



Source: CNADB 2018, adapted by AECOM in 2018

Exhibit 3.4-2. Location of CNADB Wildlife Occurrences within a 2-Mile Radius of the Project Site

**Table 3.4-1.
Special-Status Wildlife Species with Potential to Occur in the Natomas Basin**

Common Name	Scientific Name	Status	Habitat	Potential for Occurrence on or Near the Project Site
Invertebrates				
Vernal pool fairy shrimp	<i>Branchinecta lynchi</i>	Federal: threatened, NBHCP: covered	Vernal pools and other seasonal wetlands.	Unlikely to occur. No suitable habitat is present on project site.
Midvalley fairy shrimp	<i>Branchinecta mesovallensis</i>	NBHCP: covered	Vernal pools.	Unlikely to occur. No suitable habitat is present on project site.
Valley elderberry longhorn beetle	<i>Desmocerus californicus dimorphus</i>	Federal: threatened, NBHCP: covered	Elderberry shrubs, typically in riparian habitats.	Unlikely to occur. No suitable habitat is present on project site.
Vernal pool tadpole shrimp	<i>Lepidurus packardii</i>	Federal: endangered, NBHCP: covered	Vernal pools and swales.	Unlikely to occur. No suitable habitat is present on project site.
California linderiella	<i>Linderiella occidentalis</i>	NBHCP: covered	Vernal pools and other seasonal wetlands.	Unlikely to occur. No suitable habitat is present on project site.
Amphibians				
California tiger salamander	<i>Ambystoma californiense</i>	Federal: threatened, State: species of special concern, NBHCP: covered	Vernal pools and seasonal wetlands and surrounding uplands with burrows and other belowground refuge.	Unlikely to occur. No suitable habitat is present on or near the project site and this species has not been documented in the Natomas Basin.
California red-legged frog	<i>Rana aurora draytonii</i>	Federal: threatened, State: species of special concern	Aquatic habitats, such as creeks, streams, and ponds.	Unlikely to occur. No longer occurs on the floor of the Central Valley and no suitable habitat is present on the project site.
Western spadefoot	<i>Spea hammondi</i>	State: species of special concern, NBHCP: covered	Vernal pools and other seasonal ponds with a minimum 3-week inundation period in valley and foothill grasslands.	Unlikely to occur. No suitable habitat is present on project site.
Reptiles				
Western pond turtle	<i>Emys marmorata</i>	State: species of special concern, NBHCP: covered	Ponds, marshes, rivers, streams, sloughs; nest in nearby uplands with suitable soils.	Could occur. The West Drainage Canal provides suitable habitat, and areas adjacent to the canal provide potentially suitable upland habitat. This species was observed within the West Drainage Canal approximately 800 feet southwest from the project site on September 25, 2018.

**Table 3.4-1.
Special-Status Wildlife Species with Potential to Occur in the Natomas Basin**

Common Name	Scientific Name	Status	Habitat	Potential for Occurrence on or Near the Project Site
Giant garter snake	<i>Thamnophis gigas</i>	Federal: threatened, State: threatened, NBHCP: covered	Streams, sloughs, ponds, inundated floodplains, rice fields, and irrigation/ drainage ditches; also require upland refugia not subject to flooding during the snake's inactive season.	Could occur. The Natomas Basin supports a large percentage of the American Basin population of GGS, the West Drainage Canal provides suitable habitat, and areas adjacent to the canal provide potentially suitable upland habitat.
Fish				
Sacramento Perch	<i>Archoplites interruptus</i>	State: species of special concern	Aquatic, flowing and standing water in the Sacramento and San Joaquin Rivers.	Unlikely to occur. Reported to be extirpated from historic range, including the Sacramento River in the vicinity of the project site (Moyle 2002).
Delta Smelt	<i>Hypomesus transpacificus</i>	Federal: threatened; State: endangered	Freshwater and low-salinity portions of the Sacramento and San Joaquin Rivers and Suisun Bay.	Unlikely to occur. The proposed action is beyond the reported range for this species.
Steelhead – Central Valley DPS	<i>Oncorhynchus mykiss irideus</i>	Federal: threatened	Aquatic, flowing water in the Sacramento and San Joaquin River watersheds.	Could occur. Known to occur in the watershed upstream of the project site. Could inadvertently enter the West Drainage Canal during migration to and from spawning sites in upstream tributaries.
Chinook Salmon- Central Valley fall-run and late fall-run	<i>Oncorhynchus tshawytscha</i>	State: species of special concern	Aquatic, flowing water in the Sacramento and San Joaquin River watersheds	Could occur. Known to occur in the watershed upstream of the project site. Could inadvertently enter the West Drainage Canal during migration to and from spawning sites in upstream tributaries.
Chinook Salmon – Central Valley spring-run ESU	<i>Oncorhynchus tshawytscha</i>	Federal: threatened; State: threatened	Aquatic, flowing water in the Sacramento and San Joaquin River watersheds.	Unlikely to occur. No spawning populations of this ESU are reported in the lower Sacramento River or tributaries downstream of the Feather River. The West Drainage Canal is not considered a regular migratory corridor for this ESU.

**Table 3.4-1.
Special-Status Wildlife Species with Potential to Occur in the Natomas Basin**

Common Name	Scientific Name	Status	Habitat	Potential for Occurrence on or Near the Project Site
Chinook Salmon – Sacramento River winter-run ESU	<i>Oncorhynchus tshawytscha</i>	Federal: endangered; State: endangered	Aquatic, flowing water in the Sacramento and San Joaquin River watersheds.	Unlikely to occur. No spawning populations of this ESU are reported in the lower Sacramento River or tributaries downstream of Battle Creek. The West Drainage Canal is not considered a regular migratory corridor for this ESU.
Sacramento Splittail	<i>Pogonichthys macrolepidotus</i>	Federal: threatened; State: species of special concern	Slow moving rivers, sloughs, and alkaline lakes.	Unlikely to occur. Sacramento Splittail have not been observed in the Natomas Cross Canal and no spawning habitat exists on the project site.
Green Sturgeon southern DPS	<i>Acipenser medirostris</i>	Federal: threatened, State: threatened	Large main stem rivers with cool water and cobble, clean sand, or bedrock for spawning.	Unlikely to occur. No spawning habitat exists in the project site. Green Sturgeon spawning is only reported to occur in the Sacramento and Feather rivers. The West Drainage Canal is not considered a regular migratory corridor for Green Sturgeon.
Birds*				
Tricolored blackbird	<i>Agelaius tricolor</i>	State: species of special concern and State candidate for listing; NBHCP: covered	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 (Shuford and Gardali 2008: 439).	Unlikely to occur. No suitable nesting habitat present on project site. The nearest suitable nesting habitat is at Fisherman’s Lake approximately 0.25 mile away.
Burrowing owl	<i>Athene cunicularia</i>	State: species of special concern; NBHCP: covered	Grasslands, agricultural fields, 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 (Shuford and Gardali 2008: 221).	Could occur. Agricultural fields and levees on and adjacent to the project site provide potential burrow habitat.

**Table 3.4-1.
Special-Status Wildlife Species with Potential to Occur in the Natomas Basin**

Common Name	Scientific Name	Status	Habitat	Potential for Occurrence on or Near the Project Site
Aleutian Canada goose	<i>Branta canadensis leucopareia</i>	Federal: delisted NBHCP: covered	Forage in agricultural fields and roost in aquatic habitats.	Unlikely to occur. Suitable foraging habitat is present on project site; could be a winter visitor, but not recorded in Natomas Basin since monitoring began in 2004.
Swainson's hawk	<i>Buteo swainsoni</i>	State: threatened; NBHCP: covered	Forage in grasslands and agricultural fields; nest in open woodland or scattered trees.	Could occur. No suitable nesting habitat present on project site, but trees located within 0.5 mile and suitable foraging habitat present on-site. A juvenile of this species was observed west of the project site, soaring above the TNBC's Rosa East tract on September 25, 2018.
Western snowy plover	<i>Charadrius alexandrinus nivosus</i>	Federal: threatened; State: species of special concern	Nests and forages on sandy and gravelly beaches along the coast and the shores of inland alkali lakes.	Unlikely to occur. No suitable habitat is present on project site.
Mountain plover	<i>Charadrius montanus</i>	State: species of special concern	Winter visitor; forages in short grasslands, plowed agricultural fields, bare ground; and where vegetation is sparse and trees are absent; prefers grazed areas and areas with burrowing mammals.	Could occur. Suitable winter foraging habitat is present.
Northern harrier	<i>Circus cyaneus</i>	State: species of special concern	Forage and nest in grassland, agricultural fields, and marshes; nests on the ground in dense, tall vegetation in undisturbed areas.	Could occur. No suitable nesting habitat is present on project site due to disturbance, but suitable foraging habitat is present and this species could nest on the adjacent fallow parcel to the north and possibly along the adjacent drainage canals/ditches.
Western yellow-billed cuckoo	<i>Coccyzus americanus occidentalis</i>	Federal: threatened; State: endangered	Nests in riparian forest with densely foliated deciduous trees and shrubs, especially willows.	Unlikely to occur. No suitable habitat is present on the project site.
White-tailed kite	<i>Elanus leucurus</i>	State: fully protected	Forage in grasslands and agricultural fields; nest in isolated trees or small woodland patches.	Could occur. No suitable nesting habitat present on project site, but this species could nest in trees adjacent to the project site.

**Table 3.4-1.
Special-Status Wildlife Species with Potential to Occur in the Natomas Basin**

Common Name	Scientific Name	Status	Habitat	Potential for Occurrence on or Near the Project Site
American peregrine falcon	<i>Falco peregrinus anatum</i>	Federal: delisted State: endangered and fully protected; NBHCP: covered	Typically nests in scrapes on cliff ledges in woodland, forest, and coastal habitats; however, this species has become adapted to urban environments where it may nest on protected ledges of tall buildings or bridges.	Unlikely to occur. No suitable nesting habitat present on project site.
Bald eagle	<i>Haliaeetus leucocephalus</i>	Federal: delisted State: endangered and fully protected	Inland waters with adjacent large, old-growth trees or snags.	Unlikely to occur. No suitable habitat is present on the project site.
Loggerhead shrike	<i>Lanius ludovicianus</i>	State: species of special concern; NBHCP: covered	Nests in trees and shrubs in grasslands, shrublands, and open woodlands	Could occur. No suitable nesting habitat present on project site, but this species could nest in nearby trees or shrubs.
Song sparrow (Modesto population)	<i>Melospizamelodia</i>	State: species of special concern	Nests and forages primarily in emergent marsh and early successional riparian habitat, infrequently in sparsely vegetated ditches and levees.	Unlikely to occur. No suitable nesting habitat present on project site
White-faced ibis	<i>Plegadis chihi</i>	NBHCP: covered	Forage and roost in shallow water and flooded fields; nest in freshwater marshes.	Unlikely to occur. No suitable habitat present on project site.
Purple martin	<i>Progne subis</i>	State: species of special concern	Nests in cavities of trees, bridges, poles, and buildings; forages in foothill and low montane oak and riparian woodlands.	Unlikely to occur. No suitable nesting habitat present on project site.
Bank swallow	<i>Riparia riparia</i>	State: threatened, NBHCP: covered	Forage in various habitats; nest in banks or bluffs, typically adjacent to water.	Unlikely to occur. No suitable nesting habitat present on project site.
Least Bell's vireo	<i>Vireo bellii pusillus</i>	Federal: endangered, State: endangered	Nests in riparian thickets of willows and shrubs, usually near water.	Unlikely to occur. No suitable nesting habitat present on project site.
Mammals				
Pallid bat	<i>Antrozous pallidus</i>	State: species of special concern	Roosts in rock crevices, tree hollows, bridges, and buildings that protect bats from high temperatures and have access to open, dry areas for foraging.	Unlikely to occur. No suitable roosting habitat present on project site.
Western red bat	<i>Lasiurus blossevillii</i>	State: species of special concern	Roosts primarily in tree foliage, less often in shrubs; in small family groups rather than large colonies; with open areas for foraging.	Unlikely to occur. No suitable nesting habitat present on project site.

**Table 3.4-1.
Special-Status Wildlife Species with Potential to Occur in the Natomas Basin**

Common Name	Scientific Name	Status	Habitat	Potential for Occurrence on or Near the Project Site
American badger	<i>Taxidea taxus</i>	State: species of special concern	Drier open habitats with friable soils and abundant prey, with large contiguous home range with suitable denning habitat.	Unlikely to occur. No suitable nesting habitat present on project site.
<p>Notes: CA = California; DPS = Distinct Population Segments; ESU = Evolutionarily Significant Unit; GGS = Giant Garter Snake; NBHCP = Natomas Basin Habitat Conservation Plan</p> <p>* Because the distribution and abundance of individual bird species varies seasonally, the season, or life phase, during which the species is of conservation concern in California is provided in parentheses beneath the bird species scientific name. There is potential for any of these bird species to fly over or pass through the project site, however, these species would not necessarily be nesting on or otherwise residing on the project site during the season or life phase when the species is of conservation concern in California.</p> <p>Legal Status Definitions and Listing Categories:</p> <p>Federal: Endangered (legally protected) Threatened (legally protected) Delisted (no longer protected under the ESA)</p> <p>State: Endangered (legally protected) Threatened (legally protected) Fully Protected (legally protected) Species of Special Concern (no formal protection)</p> <p>NBHCP: Covered (addressed in NBHCP)</p> <p>Sources: CNDDB 2018; City of Sacramento, Sutter County, and Natomas Basin Conservancy 2003:I-14 through I-15 ; TNBC 2007: 1-7</p>				

Central Valley fall-run and late fall-run Chinook Salmon

The Central Valley fall- and late fall-run Chinook Salmon evolutionary significant unit (ESU) includes all naturally spawned populations of fall- and late fall-run Chinook Salmon in the Sacramento and San Joaquin River basins and their tributaries east of Carquinez Strait, California (64 Federal Register [FR] 50394). On September 16, 1999, after reviewing the best available scientific and commercial information, the National Marine Fisheries Service (NMFS) determined that listing Central Valley fall- and late fall-run Chinook Salmon under the federal ESA was not warranted.

Central Valley fall-run Chinook Salmon historically spawned in all major tributaries, as well as the mainstems of the Sacramento and San Joaquin rivers. The historical geographic distribution of Central Valley late fall-run Chinook Salmon is not well understood, but is thought to be less extensive than that of Fall-Run Chinook Salmon. The late fall-run fish most likely spawned in the upper Sacramento and McCloud Rivers in reaches now blocked by Shasta Dam, as well as in sections of major tributaries where there was adequate cold water in summer.

Chinook Salmon spawning sites include those stream reaches with instream flows, water quality, and substrate conditions suitable to support spawning, egg incubation, and larval development. Central Valley fall-run Chinook Salmon currently spawn downstream of dams on every major tributary in the Sacramento River and San Joaquin River systems. Late fall-run Chinook Salmon spawning is limited to the mainstem and tributaries of the Sacramento River. No Chinook Salmon spawning habitat is present on the project site.

Central Valley fall-run Chinook Salmon exhibit an ocean-type life history. Adult fall-run Chinook Salmon generally migrate through the Delta and into Central Valley rivers from June through December and spawn from September through December. Peak spawning activity usually occurs in October and November. The life history characteristics of late fall-run Chinook Salmon are not as well understood; however, they are thought to exhibit a stream-type life history. Adult late fall-run Chinook Salmon generally migrate through the Delta and into the Sacramento River from October through April and may wait 1 to 3 months before spawning from December through April. Peak spawning activity occurs in February and March.

Fall- and late fall-run Chinook Salmon rear in streams and rivers with sufficient water flow and floodplain connectivity. The channeled, leveed, and riprapped river reaches and sloughs common in the Sacramento and San Joaquin rivers and throughout the Delta typically have low habitat diversity and complexity, have low abundance of food organisms, and offer little protection from predation by fish and birds. As such, the channelized lower reaches of the Sacramento and San Joaquin rivers are not considered high quality rearing habitat. Similarly, the West Drainage Canal near the project site is channelized, does not contain high quality flowing water that supports a diverse food base, and also is considered poor quality rearing habitat for Chinook Salmon.

Giant Garter Snake

Giant garter snake is federally listed and State listed as threatened and is a primary covered species under the NBHCP. This species formerly ranged throughout the wetlands of California's Central Valley, from Buena Vista Lake near Bakersfield in Kern County to the vicinity of Chico in Glenn and Butte counties (Hansen and Brode 1980:3). This species appears to have been extirpated from the San Joaquin Valley south of Mendota in Fresno County (Hansen and Brode 1980:13) and has suffered serious declines in other parts of its former range. The primary cause of decline, loss of aquatic habitat or degradation caused by agricultural development, has been compounded by the loss of upland refugia and bankside vegetation cover (Thelander 1994:283–287). Habitat loss has resulted in the fragmentation of giant garter snake populations and the isolation of remnant habitats, making the species vulnerable to genetic loss (USFWS 2012:18-19).

This aquatic snake inhabits agricultural wetlands and other waterways, such as irrigation and drainage canals, rice fields, marshes, sloughs, ponds, small lakes, low-gradient streams, and adjacent uplands in the Central Valley. Rice fields and their adjacent irrigation and drainage canals serve an important role as aquatic habitat for giant garter snake. Managed marsh can also provide important habitat for giant garter snake. In contrast to rice, managed marsh provides habitat year round, including such habitat elements as dense cover, basking sites, and refugia, which meet all of the giant garter snake's daily and seasonal needs. Specific habitat requirements consist of (USFWS 2012:1):

- (1) adequate water during the snake's active season (early-spring through mid-fall);
- (2) emergent, herbaceous wetland vegetation, such as cattails and bulrushes, for escape cover and foraging habitat during the active season;
- (3) grassy banks and openings in waterside vegetation for basking; and
- (4) higher elevation uplands for cover and refuge from flood waters during the snake's dormant season in the winter.

Many summer basking and refuge areas are immediately adjacent to canals and other aquatic habitats, and they have been observed using burrows for refuge in the summer as far as 164 feet from aquatic habitat (USFWS 2015:I-3). During the winter, giant garter snakes take refuge in mammal burrows, riprap, holes, cracks, or crevices adjacent to their aquatic habitat, but above flood elevations (USFWS 2015:I-3, Wylie et al. 1997:4). Overwintering snakes have been observed using burrows as far as 820 feet from their summer aquatic habitat in response to high flood waters, but this is atypical and occurs only when refugia are not available closer to their summer aquatic habitat (USFWS 2015:I-3, Wylie et al. 1997:4). Recent improvements to the flood protection system in the Sacramento area have reduced the flood risk in the Natomas Basin. Flood risk is discussed in detail in Section 3.9, “Hydrology and Water Quality.”

This species is present in the Natomas Basin and inhabits waterways, including Fisherman’s Lake, and irrigation canals in the area, and has been documented in the West Drainage Canal northwest of the project site as recently as 2009 (Exhibit 3.4-2) (CNDDDB 2018). TNBC conducts an annual assessment of giant garter snake populations in the Natomas Basin, as required by the NBHCP and its Implementing Agreement (City of Sacramento et al. 2003). TNBC’s most recent evaluation (TNBC 2018) cited recent improvements in habitat connectivity between Fisherman’s Lake and habitats north of Interstate 5 (I-5) with completion of a canal connecting the North Drainage Canal and the West Drainage Canal. The new canal was constructed as mitigation for the Natomas Levee Improvement Program (NLIP) (TNBC 2018). However, TNBC described the habitat in the West Drainage Canal as marginal (TNBC 2018:3-14). The West Drainage Canal adjacent to the project site provides marginal quality habitat for giant garter snake because it lacks some requisite habitat components, such as emergent vegetation that provides cover from predators. Nonetheless, this portion of the West Drainage Canal could be used by giant garter snakes for dispersal between more suitable habitat patches. Fragmentation by I-5 interferes with dispersal via the West Drainage Canal from Fisherman’s Lake to suitable breeding habitat to the north (TNBC 2018: 3-14). Wetlands recently constructed by SAFCA at Fisherman’s Lake may provide better connectivity within the Fisherman’s Lake area; however, the small population in the Fisherman’s Lake Reserve may be isolated and vulnerable to inbreeding effects (TNBC 2018:3-14 and 3-15).

TNBC’s efforts in creating managed marsh habitats and encouraging rice agriculture in the Natomas Basin have provided persistent habitat with adequate water. Other TNBC management actions include preserving mammal burrows in areas adjacent to canals, accumulated tule thatch, and maintaining water levels.

There have been 12 giant garter snake occurrence records documented in the CNDDDB within 2 miles of the project site, and 68 occurrence records have been documented in the Natomas Basin (CNDDDB 2018). TNBC monitoring results and abundance modeling suggest that giant garter snake abundance has decreased on Basin reserves from 2011 to 2015 (TNBC 2016:3-14); since then, total number of individuals and captures per year increased on Basin reserves (TNBC 2018: 3-16).

Swainson’s Hawk

Swainson’s hawk is State listed as threatened and is a primary covered species under the NBHCP. Historically, as many as 17,000 Swainson’s hawk pairs may have nested throughout lowland California (Bloom 1980). As of 2007, there were estimated to be approximately 2,081 breeding pairs in California, the vast majority of which (approximately 1,950 pairs) are in the Central Valley, with the largest concentrations in the counties of Sacramento, San Joaquin, Solano, and Yolo (Estep 2009a:2-1, 2-2, and 4-3, CDFW 2015:15 through 17). The California population of breeding Swainson’s hawks declined by approximately 90% from the 1940s to 1980,

presumably because of habitat loss; however, other factors, such as mortality in wintering areas in Central America, may have also played a role (Bloom 1980). Based on the results of statewide surveys, it is possible to speculate that population numbers are increasing modestly in the Central Valley, but the population estimate is still far below historical numbers, and there is little evidence to indicate that this hawk has reoccupied much of its former range in the central and south coast valley and Southern California (CDFW 2015:21).

Swainson's hawks typically inhabit California only during the breeding season (March through September) and winter primarily in Central and South America. Eggs are generally laid by April, with incubation and rearing of young occurring through mid-July (Estep 2009a:8). Swainson's hawk is most commonly found in grasslands, low shrublands, and agricultural habitats that include large trees for nesting. Swainson's hawks build nests in riparian woodlands, roadside trees, trees along field borders, and isolated trees. Stringers of remnant riparian forest along drainages contain most of the known nests in the Central Valley (TNBC 2007:4-3).

Prey accessibility is based largely on vegetative structure (cover and height) of the foraging habitat with lower vegetative cover providing greater access to prey (Estep 2009b). Swainson's hawks feed primarily on small rodents, but also consume insects and birds. Although the most important foraging habitat for Swainson's hawks lies within a one-mile radius of each nest (City of Sacramento et. al 2003: Appendix H, page 5-29), Swainson's hawks have been recorded foraging up to 18.6 miles from nest sites (Estep 1989:23). Any habitat within the foraging distance may provide food at some time in the breeding season that is necessary for reproductive success. However, reproductive success decreases for Swainson's hawks as distance from foraging habitat increases (England et al. 1995, England et al. 1997).

In a dynamic agricultural environment such as the Natomas Basin, the area required for Swainson's hawk foraging habitat depends on time of season, crop cycle, crop type, and disking/harvesting schedule, as these factors affect the abundance and availability of prey (City of Sacramento, Sutter County, and Natomas Basin Conservancy 2003:II-19).

According to TNBC (2015), the Swainson's hawk population in the Natomas Basin is stable. The number of Swainson's hawk pairs in the Basin increased in 2015, and all measures of reproductive success and the number of occupied territories has increased over the monitoring period (i.e., 2001–2015). There were 44 successful nesting attempts in the NBHCP area in 2015 (TNBC 2016: Table 4-2).

The CNDDDB contains seven nesting records within 1 mile and 12 nesting records within 2 miles of the project site (CNDDDB 2018). The project site provides potential foraging habitat for Swainson's hawk; the approximately 34 acres of fallow agricultural land where hay has grown and has been periodically cut on the project site are considered moderate-quality foraging habitat. There are no trees present on the project site for Swainson's hawks to nest, but there are suitable nest trees nearby, including along the West Drainage Canal.

Burrowing Owl

Burrowing owl is a CDFW species of special concern and is covered under the NBHCP. Burrowing owls and their nests are protected under Section 3503.5 of the California Fish and Game Code. Burrowing owls typically inhabit grasslands and other open habitats with low-lying vegetation. Burrowing owls are also known to nest and forage in idle agricultural fields, ruderal fields, and the edges of cultivated fields; however, these areas provide lower quality habitat than native grasslands. Burrow availability is an essential component of suitable habitat and required year round for nesting and roosting. The burrowing owl is capable of digging its own burrow in areas

with soft soil, but generally prefers to adopt those excavated by other animals, typically ground squirrels. In areas where burrows are scarce, burrowing owl can use pipes, culverts, debris piles, and other artificial features as burrows.

Burrowing owl sightings within the Natomas Basin are generally in the eastern half of the basin, with the highest concentration in the southeastern portion (TNBC 2007:5-10 through 5-12). The three largest breeding colonies are documented in the parking lot of the Sleep Train Arena, near the east edge of the basin north of Del Paso Road, and near the east edge of the basin north of Elkhorn Boulevard (TNBC 2016: 5-8 through 5-10). Although no occurrences of burrowing owl have been documented on or adjacent to the project site, burrows suitable for burrowing owls were observed along the ditch that extends along the eastern edge of the project site in 2016. Protocol-level burrowing owl surveys (CDFW 2012) were conducted on September 25, 2018 within the project site and within a 1,500 foot buffer where site access was granted. During protocol surveys, no active burrows or burrows with sign of use were observed; only one ground squirrel burrow, marginally suitable for burrowing owl and showing no sign of use, was observed adjacent to the West Drainage Canal north of the project site. Overall, the project site and adjacent areas were characterized by hard pack, non-friable soils; small mammal burrowing activity was almost entirely lacking.

Western Pond Turtle

Western pond turtle is a CDFW species of special concern and is covered under the NBHCP. They are generally associated with permanent or near-permanent aquatic habitats, such as lakes, ponds, streams, freshwater marshes, and agricultural ditches. Western pond turtle requires still or slow-moving water with instream emergent woody debris, rocks, or open mud banks for basking sites. Pond turtles are highly aquatic but can venture up to 1,300 feet from water to lay eggs. Nests are typically located on unshaded upland slopes in dry substrates with clay or silt soils (Jennings and Hayes 1994:101). Pond turtles can overwinter in upland sites.

Ditches, ponds, and marshes throughout the Natomas Basin provide potential habitat for western pond turtle. Potential breeding habitat is very limited by the predominance of agriculture and development, but could occur along ditches and margins of other aquatic habitat.

Limited information is available on the status and distribution of western pond turtle in the Natomas Basin. Surveys conducted in 2004–2006 documented only 15 occurrences of western pond turtle in the Natomas Basin (TNBC 2007: Figure 5-14). Although few occurrences have been documented in the basin, several of them have been near the project area, particularly in Fisherman’s Lake, southwest of the project site.

Other Special-Status Birds

White-tailed kite, which is a fully protected species under the California Fish and Game Code, has the potential to nest in trees that occur in riparian habitat adjacent to the project site. Northern harrier, a species listed by CDFW as a species of special concern, could forage on the project site and could possibly nest on the ground in the fallowed agricultural parcel to the north of the project site, along the West Drainage Canal to the west, or along the abandoned agricultural ditch to the east. Northern harrier has been detected at the Fisherman’s Lake Reserve during TNBC monitoring, and throughout the Basin reserve lands (TNBC 2018: 5-3, C.2-2). Loggerhead shrike, which is also listed as a species of special concern, is known to nest at several TNBC reserves and elsewhere in the Natomas Basin (TNBC 2008:5-8) and could nest in small trees and shrubs adjacent to the project site. Another California species of special concern, mountain plover, could potentially winter in the agricultural habitats in and

surrounding the project site; however, wintering colonies of this species in the Sacramento Valley occur mainly in Colusa, Yolo, and Solano counties (Shuford and Gardali 2008:182) and wintering colonies have not been documented in the Natomas Basin. Mountain plover does not breed in California, but is a winter visitor from September to mid-March.

COMMON NESTING BIRDS PROTECTED UNDER STATE AND/OR FEDERAL LAW

Most native bird species and all raptors are provided protection under the Migratory Bird Treaty Act (MBTA) and/or California Fish and Game Code, as described later in the *Regulatory Context* section. These statutes include provisions for the protection of active bird nests and eggs. Numerous common bird species could nest in the project area. Raptors that are protected under California Fish and Game Code Section 3503 and that may nest close to the project site include red-shouldered hawk (*Buteo lineatus*), red-tailed hawk, great horned owl (*Bubo virginianus*), and American kestrel (*Falco sparverius*). Numerous migratory bird species may nest near the project site, such as tree swallow (*Tachycineta bicolor*) and western kingbird (*Tyrannus verticalis*).

SENSITIVE HABITATS

Sensitive habitats include those that are of special concern to the resource agencies or that are specifically evaluated under CEQA, Section 1602 of the California Fish and Game Code, Section 404 of the Clean Water Act, or the State's Porter-Cologne Water Quality Control Act. Sensitive habitats may be of special concern because of their locally or regionally declining status, or because they provide important habitat to common and special-status species.

The project site does not have wetland features or sensitive natural communities. West Lakeside LLC commissioned a wetland delineation (Foothill Associates 2007) for a 133-acre parcel north of Del Paso Road, which included the proposed project site, as well as additional lands adjacent to the proposed project site. The field survey was conducted over 2.5 years and covered the farmed area and adjacent ditches. The abandoned agricultural ditches to the east and northeast of the project boundary were excavated to convey agricultural irrigation and to provide drainage. These ditches are connected to each other and to the West Drainage Canal via culvert. However, the ditches are at a higher elevation than the West Drainage Canal and therefore, water had to be pumped from the canal into the ditches for use in irrigation. The survey determined that the ditches are no longer used for irrigation and are not functionally connected to the West Drainage Canal. However, aerial imagery from 2013 shows agricultural return water from an alfalfa field north of the project site on the south side of I-5 being discharged from the north ditch into West Drainage Canal. There were no features that met the criteria for jurisdictional wetlands found on or adjacent to the project site. Foothill Associates prepared an updated wetland delineation of the project site (the current ~34-acre project site). The results of this delineation were consistent with the previous findings of no jurisdictional features within the project site (Foothill Associates 2016).

The West Drainage Canal is connected to Fisherman's Lake, which is tributary to the Sacramento River, and this ultimate connection to a Traditional Navigable Water makes the West Drainage Canal a jurisdictional water of the United States. The project includes construction of a storm water drain pipe that connects to an existing outfall to the West Drainage Canal. No construction would occur within the West Drainage Canal, however, construction would occur in adjacent areas and stormwater runoff from the project site would be permanently diverted into the West Drainage Canal.

3.4.2 REGULATORY CONTEXT

FEDERAL PLANS, POLICIES, REGULATIONS, AND LAWS

Federal Endangered Species Act

USFWS and the National Marine Fisheries Service implement the federal Endangered Species Act (FESA) of 1973 (16 U.S. Code [USC] 1531 et seq.). Section 9 of the FESA, prohibits the “take” of federally listed endangered species of fish or wildlife. The FESA defines *take* as to “harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or attempt to engage in any such conduct.” Under federal regulation, take is further defined to include habitat modification or degradation where it would be expected to result in death or injury to listed wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering.

Section 7(a)(2) requires that actions authorized, funded, or carried out by federal agencies (i.e., issuing a permit pursuant to the Clean Water Act) do not “jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of lands determined by the USFWS to be “critical habitat” for such species. If a federal agency determines that a proposed federal action “may affect” a listed species and/or designated critical habitat, the agency must consult with USFWS and/or the National Marine Fisheries Service in accordance with Section 7 of the FESA.

For projects where federal action is not involved and take of a listed fish or wildlife species may occur, the project proponent may seek to obtain an incidental take permit (ITP) under ESA Section 10(a). Section 10(a) allows USFWS to permit the incidental take of listed species if such take is accompanied by a habitat conservation plan that includes components to minimize and mitigate impacts associated with the take. (The Natomas Basin Habitat Conservation Plan (NBHCP) is described below under regional and local permits.) If take of a federally listed species may occur, the action may require an incidental take permit from USFWS. This permit allows take of federally listed species if the take is “incidental to and not the purpose of, the carrying out of an otherwise lawful activity” (16 USC 1539[a][1][B]).

Clean Water Act

Section 404 of the federal Clean Water Act (CWA) requires a project applicant to obtain a permit from USACE before engaging in any activity that involves any discharge of dredged or fill material into waters of the United States, including wetlands. Fill material is material placed in waters of the United States where the material has the effect of replacing any portion of a water of the United States with dry land, or changing the bottom elevation of any portion of a water of the United States. Waters of the United States include navigable waters of the United States; interstate waters; 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 adjacent to these waters.

As part of the review of a project, USACE must ensure compliance with applicable federal laws, including EPA’s Section 404(b)(1) Guidelines. USACE regulations require that impacts to waters of the United States are avoided and minimized to the maximum extent practicable, and that unavoidable impacts are compensated (33 Code of Federal Regulations [CFR] 320.4[r]).

Under Section 401 of the CWA, an applicant for a Section 404 permit must obtain a certificate from the appropriate state agency stating that the intended dredging or filling activity is consistent with the state’s water

quality standards and criteria. In California, the authority to grant water quality certification is delegated by the State Water Resources Control Board to the nine Regional Water Quality Control Boards (RWQCBs).

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) authorizes the Secretary of the Interior to regulate the taking of migratory birds; the act 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...” (Title 16, United States Code, Section 703). This prohibition includes both direct and indirect acts, although harassment and habitat modification are not included unless they result in direct loss of birds, nests, or eggs. The current list of species protected by the MBTA essentially includes all native birds. USFWS is responsible for overseeing compliance with the MBTA.

Essential Fish Habitat

The Magnuson-Stevens Fishery Conservation and Management Act, as amended (16 United States Code (USC) 1801), often referred to as the Magnuson-Stevens Act, requires that federal fishery management plans identify and describe Essential Fish Habitat. Federal action agencies must consult with NMFS on any activity that they fund, permit, or carry out that may adversely affect EFH. They also must provide NMFS with a written assessment of the effects of their actions on EFH (50 CFR 600.920). NMFS is required to provide recommendations for EFH conservation and enhancement to the federal action agencies. An agency that receives such EFH conservation recommendations from NMFS must provide a detailed written response to NMFS within 30 days upon receipt, detailing how the agency intends to avoid, mitigate, or offset the impact of the activity on EFH (Section 305[b][4][B]).

EFH includes those waters and substrate necessary for fish spawning, breeding, feeding, or growth to maturity. NMFS has defined waters to include aquatic areas and their associated physical, chemical, and biological properties that are used by fish and may include aquatic areas historically used by fish. Substrate includes sediment, hard bottom, structures underlying the waters, and associated biological communities. Necessary means the habitat required to support a sustainable fishery and the managed species contribution to a healthy ecosystem. Spawning, breeding, feeding, or growth to maturity covers a species’ full life cycle (NMFS 2004).

The Pacific Fisheries Management Council (PFMC) manages the relevant commercial fisheries that may be affected by the proposed project. Freshwater EFH for Chinook Salmon in the Central Valley includes waters currently or historically accessible to salmon within the Central Valley ecosystem as described by Myers et al. (1998). These waters include the tributaries to the Sacramento River, including the Natomas Cross Canal. Therefore, project activities have the potential to affect Chinook Salmon EFH.

STATE PLANS, POLICIES, REGULATIONS, AND LAWS

California Fish and Game Code

The following paragraphs describe sections of the California Fish and Game Code, administered by CDFW.

California Endangered Species Act

Under the California Endangered Species Act (CESA), CDFW is responsible for maintaining a list of endangered and threatened species (California Fish and Game Code Section 2070). Sections 2050–2098 of the California Fish and Game Code outline the protections provided to California’s rare, endangered, and threatened species. Section

2080 prohibits the taking of plants and animals listed under CESA. Section 2081 establishes an incidental take permit program for State-listed species. CDFW maintains a list of “candidate species,” which are species that CDFW formally notices as being under review for addition to the list of endangered or threatened species.

Pursuant to CESA requirements, an agency reviewing a proposed project within its jurisdiction must determine whether any State-listed endangered or threatened species may be present in the project study area and whether the proposed project would have a potentially significant impact on such species. In addition, CDFW encourages informal consultation on any proposed project that may affect a candidate species.

Project-related impacts on species on the CESA endangered or threatened list would be considered significant. State-listed species are protected under the mandates of CESA. “Take” of protected species incidental to otherwise lawful management activities may be authorized under California Fish and Game Code Section 206.591. Authorization from CDFW would be in the form of an incidental take permit.

Fully Protected Species

Certain species are considered *fully protected*, meaning that the California Fish and Game Code explicitly prohibits all take of individuals of these species except take permitted for scientific research. Section 5050 lists fully protected amphibians and reptiles, Section 5515 lists fully protected fish, Section 3511 lists fully protected birds, and Section 4700 lists fully protected mammals. Fully protected species that may occur at the project site include white-tailed kite.

Protection of Birds and Their Nests

Section 3503 of the California 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 prohibits take, possession, or destruction of any birds in the orders Falconiformes (hawks) or Strigiformes (owls), or of their nests and eggs. Migratory nongame birds are protected under Section 3800, while other specified birds are protected under Section 3505. Typical violations include destruction of active nests as a result of tree removal and failure of nesting attempts, resulting in loss of eggs and/or young. These violations can be caused by human activity and disturbance of nesting pairs. Projects that could result in impacts on bird nests and raptors are subject to the California Fish and Game Code.

Native Plant Protection Act

CDFW administers Sections 1900–1913 of the California Fish and Game Code, the Native Plant Protection Act. This act allows the California Fish and Game Commission to designate rare and endangered plant species, and to notify landowners of the presence of such species. Section 1907 also allows the commission to regulate the “taking, possession, propagation, transportation, exportation, importation, or sale of any endangered or rare native plants.”

Lake and Streambed Alteration

All diversions, obstructions, or changes to the natural flow or bed, channel, or bank of any river, stream, or lake in California that supports wildlife resources are subject to regulation by CDFW under Section 1602 of the California Fish and Game Code. Under Section 1602, it is unlawful for any person to substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake designated

by CDFW, or use any material from the streambeds, without first notifying CDFW of such activity and obtaining a final agreement authorizing such activity.

“Stream” is defined as a body of water that flows at least periodically or intermittently through a bed or channel having banks and that supports fish or other aquatic life. CDFW’s jurisdiction within altered or artificial waterways is based on the value of those waterways to fish and wildlife. A CDFW streambed alteration agreement must be obtained for any project that would result in an impact on a river, stream, or lake.

CEQA Guidelines Section 15380

Several federal and State statutes protect rare, threatened, and endangered species. Section 15380 of the CEQA Guidelines provides that a species not included on either the federal or state list of protected species may be considered rare, threatened, or endangered if the species can be shown to meet certain specified criteria. These criteria have been modeled after the FESA and CESA definitions of endangered, rare, or threatened. This section of the CEQA Guidelines enables public agencies to protect a species from any potential impacts of proposed projects until the respective government agency has the opportunity to designate (list) that species as protected if warranted. Plant species that meet the criteria for listing and are considered “rare, threatened or endangered in California” by CDFW are categorized by their “California rare plant ranks” (CRPRs). Plants ranked as CRPR 1A, 1B, 2A, or 2B may qualify as endangered, rare, or threatened species within the definition presented by Section 15380 of the CEQA Guidelines. CDFW recommends, and local governments may require, that CEQA projects address CRPR 1A, 1B, and 2A, and 2B species. In general, CRPR 3 and 4 species do not meet the definition of endangered, rare, or threatened pursuant to CEQA Guidelines Section 15380; however, the lead agency may evaluate these species on a case-by-case basis to determine significance criteria under CEQA.

REGIONAL AND LOCAL PLANS, POLICIES, REGULATIONS, AND ORDINANCES

Sacramento County General Plan

The Conservation Element in the Sacramento County General Plan (Sacramento County 2011) contains three sections with goals, objectives, and policies that address the preservation of biological resources. The following list contains the objectives and/or policies that pertain to biological resources on or adjacent to the project site.

Section V – Vegetation and Wildlife

Habitat Protection and Project Review (Objective): Review development plans and projects to ensure a balance between essential growth needs and the protection and preservation of natural habitats and special status species.

- ▶ **Policy CO-70.** Community Plans, Specific Plans, Master Plans and development projects shall:
 - include the location, extent, proximity and diversity of existing natural habitats and special-status species in order to determine potential impacts, necessary mitigation, and opportunities for preservation and restoration.
 - be reviewed for the potential to identify nondevelopment areas and establish preserves, mitigation banks, and restore natural habitats, including those for special-status species, considering effects on vernal pools, groundwater, flooding, and proposed fill or removal of wetland habitat.
- ▶ **Policy CO-71.** Development design shall help protect natural resources by:

- Minimizing total built development in the floodplain, while designing areas of less frequent use that can support inundation to be permitted in the floodplain.
- **Policy CO-72.** If land within river and stream watersheds in existing agricultural areas is developed for non-agricultural purposes, the County should actively pursue easement dedication for recreation trails within such development as a condition of approval.

Protection of Special-Status Species Habitat (Objective): Protect and maintain habitat for special-status species.

- **Policy CO-78.** Plans for urban development and flood control shall incorporate habitat corridors linking habitat sites for special status species.

Sacramento County Code

Chapter 16.130 of Title 16 of the Sacramento County Code addresses the reduction in Swainson’s hawk foraging habitat within the unincorporated Sacramento County. Proponents of projects determined to affect less than 40 acres of habitat have the option to mitigate adverse impacts on Swainson’s hawk foraging habitat through the payment of an impact mitigation fee, which provides funds to acquire available land with suitable Swainson’s hawk foraging habitat values.

Natomas Basin Habitat Conservation Plan, Implementing Agreement, and Incidental Take Permits

The NBHCP was submitted to the USFWS and CDFW in support of an application for a federal permit under Section 10(a)(1)(B) of FESA and a state permit under Section 2081 of the California Fish and Game Code. USFWS and CDFW subsequently approved the NBHCP, developed implementing agreements, and issued ITPs to the City of Sacramento, Sutter County, and TNBC.

The NBHCP is a regional conservation plan for mitigating impacts on covered species from covered activities carried out by the permittees over the 50-year term of the ITPs. The primary goal of the NBHCP is to create a system of habitat reserves that would support giant garter snake, Swainson’s hawk, and the other 20 species covered under the plan. TNBC manages these reserves, which serve as mitigation lands for covered activities carried out in the Permit Areas. The NBHCP provides coverage for TNBC activities in Sacramento County related to management of these conservation lands. Sacramento County is not a permittee under the NBHCP, and the NBHCP does not provide incidental take permit coverage for development in the unincorporated portions of Sacramento County within the Natomas Basin.

The project site is within the Plan Area of the NBHCP, which is the entire 53,537-acre Natomas Basin; however, the provisions of the NBHCP do not apply to development projects outside the permit areas in the city of Sacramento or Sutter County. Neither NUSD nor Sacramento County are permittees under the NBHCP and do not have incidental take coverage under the Plan. However, the NBHCP assumes that existing agricultural lands in the basin, outside of the Permit Areas, would remain in agricultural uses that would continue to provide habitat values to covered species. Therefore, any development outside of the Permit Areas is not accounted for in the Plan and is subject to separate environmental review and permitting processes.

3.4.3 ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

ANALYSIS METHODOLOGY

The assessment of potential impacts on biological resources was conducted by identifying areas in which construction, including grading and excavation, could directly or indirectly affect special-status species or their habitat. Because the project site is within the NBHCP Plan Area, this section contains a detailed evaluation of whether the project conflicts with the provisions of the NBHCP or could inhibit achievement of its conservation strategy.

THRESHOLDS OF SIGNIFICANCE

According to Appendix G of the CEQA Guidelines, the proposed project would have a significant impact on terrestrial biological resources if implementation of the proposed project would:

- ▶ have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by CDFW or USFWS;
- ▶ have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in any local or regional plans, policies, or 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 Clean Water Act (e.g., marshes, vernal pools, rivers) 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; or
- ▶ conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or State habitat conservation plan.

ISSUES NOT EVALUATED FURTHER

Substantial adverse effects on special-status plant species—The project site does not provide habitat for special-status plant species. Because the project would not affect special-status plants, this issue is not discussed further.

Substantial adverse effects on riparian habitat, or other sensitive natural community—The project site, the access road, the bicycle and pedestrian paths, locations where water and sewer infrastructure will be installed, and the location where the buried drain pipe would be constructed, do not contain any riparian habitat or other sensitive natural communities identified in local or regional plans. Because the project would not affect sensitive habitats, this issue is not discussed further.

Substantially interfere with wildlife movement or nursery sites—project buildout would not create barriers that could interfere with movement of resident or migratory wildlife or alter the character of existing habitat available to migrating birds within the Pacific Flyway such that it would no longer function as a migratory corridor. The site is an agricultural field that does not currently provide an important connection between any areas of natural habitat that would otherwise be isolated and contains no nursery sites (e.g., fish spawning, rookeries, bat maternity roosts). According to the California Essential Habitat Connectivity Project, the project site is not located within a Natural Landscape Block or Essential Habitat Connectivity area (Spencer et al. 2010). The riparian corridors along the Sacramento and American rivers play a critical role in wildlife movement in the region and the project would not affect these areas. Drainage canals, such as the West Drainage Canal, provide important connections between remaining habitat patches for giant garter snake. The proposed buried drain pipe would be constructed entirely in uplands adjacent to the West Drainage Canal and would not alter the canal in any way. Therefore, this issue is not discussed further.

IMPACT ANALYSIS

IMPACT 3.4-1 **Impacts on Special-Status Species.** *The project could adversely affect species identified as special-status species by CDFW, USFWS, and NMFS. This impact is **potentially significant**.*

Project construction would disturb approximately 18 acres of the NUSD-owned parcel for school buildings, parking, and recreational areas, as well as areas needed for construction staging. In addition, the project would use an existing RD 1000 outfall structure to convey stormwater runoff from the school site to the canal. A drain pipe would be buried within a 20-foot-wide private drain easement across the 200-foot-wide portion of the adjacent parcel between the school site and the West Drainage Canal, and would connect the on-site drain system to the outfall structure in the canal. At this time, RD 1000 and NUSD do not anticipate the need for any improvements to the outfall structure and there would be no need for any construction work within the ordinary high water mark of the West Drainage Canal. The project would also require an access road from Del Paso Road that would cross a property south of the project site. Water and sewer utilities would be extended from Del Paso Road along the access road.

Based on review of the CNDDDB, IPaC, and the species covered by the NBHCP, the following special-status species were identified as having potential to occur in the project area:

- ▶ giant garter snake
- ▶ Swainson's hawk
- ▶ burrowing owl
- ▶ western pond turtle
- ▶ Central Valley Steelhead
- ▶ Central Valley fall-run and late fall-run Chinook Salmon
- ▶ other special-status birds and raptors and nesting birds

The following sections address potential impacts on these species and propose a combination of avoidance, minimization, and mitigation measures.

Giant Garter Snake

This aquatic snake is present in the Natomas Basin and inhabits waterways, including Fisherman’s Lake and irrigation canals in the area, and could be present in the West Drainage Canal. This species uses the areas adjacent to waterways for summer basking and refuge, and they use the burrows of other species for refuge in these areas. Generally, upland habitat located within 200 feet of aquatic habitat is considered suitable upland habitat for this species. However, the area within 200 feet of the West Drainage Canal on the project site consists primarily of weedy vegetation and a gravel access road, and is part of an adjacent parcel that would not be affected by the school, except for installation of a buried drain pipe. The project site is considered low quality upland habitat, characterized by a regularly mowed fallow agricultural field with hard packed soil lacking burrowing activity for all but the areas along the levee closest to the West Drainage Canal. The NBHCP notes that giant garter snakes are usually not found in agricultural areas where rice is not the predominant crop (Brode and Hansen 1992 – cited in NBHCP Section 4). Nevertheless, the West Drainage Canal provides potential giant garter snake aquatic habitat and individual snakes may be present in suitable upland areas within 200 feet of the canal.

Project construction would be concentrated primarily on approximately 18 acres of the project site and set back more than 200 feet from the West Drainage Canal. However, installation of a drain pipe would occur within the 200-foot-wide area between the school site and the West Drainage Canal. Trenching of the drain pipe would occur in areas of marginal upland habitat for giant garter snake. While unlikely to result from project implementation, take of giant garter snake would be a **potentially significant** impact.

Discharge of stormwater runoff from the school site into the West Drainage Canal could affect water quality and hydrology within the canal and downstream waters, resulting in indirect impacts on giant garter snake habitat. However, indirect effects from changes in water quality and hydrology would be reduced to less than significant through implementation of best management practices, consistent with the SWPPP and other permits, and creation of a stormwater drainage plan and erosion and sediment control plans, which would include creation of on-site stormwater detention as described in Chapter 2 of this EIR, “Project Description” and evaluated in Section 3.9, “Hydrology and Water Quality.” The project would be required to incorporate permanent stormwater measures to conform to applicable County of Sacramento ordinances and State and federal law and would involve using measures described in the *Sacramento Region Stormwater Quality Design Manual* (Sacramento Stormwater Quality Partnership 2017). Permanent BMPs would be installed by the construction contractor and maintained by NUSD. Compliance with applicable County of Sacramento ordinances and State and federal law and implementation of permanent BMPs would reduce indirect impacts to less than significant.

During school operations, noise could affect basking habitat adjacent to the canal; however, the school site would be fenced and school activities would be confined to fenced areas at least 200 feet from the canal. Furthermore, the noise analysis presented in Section 3.11, “Noise and Vibration,” shows that school noise would only marginally exceed existing ambient conditions that include the adjacent roadways and planes arriving at and departing from the Sacramento International Airport.

The school site, as well as construction staging areas, would be located within the NUSD-owned parcel and at least 200 feet from the West Drainage Canal. Thus, the school’s location would avoid areas that are considered potential giant garter snake upland habitat. However, drainage for this site will require improvements within 200 feet of the canal, therefore NUSD will implement the following mitigation.

Mitigation Measure 3.4-1a: Implement Avoidance and Minimization Measures to Protect Giant Garter Snake.

NUSD will implement the following applicable standard avoidance and minimization measures contained in the Programmatic Consultation with the U.S. Army Corps of Engineers¹ and adapted for this project, listed below.

Programmatic Avoidance and Minimization Measures

- Confine movement of heavy equipment to existing roadways to minimize habitat disturbance.
- Construction activity within habitat should be conducted between May 1 and October 1. This is the active period for giant garter snakes and direct mortality is lessened, because snakes are expected to actively move and avoid danger.
- 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 area as Environmentally Sensitive Areas. These areas shall be avoided by all construction personnel.
- Construction personnel will receive worker environmental awareness training that will instruct workers to recognize giant garter snakes and their habitat, and procedures to follow if a snake is observed on or near the site.
- 24-hours prior to construction activities, the project biologist will survey areas of suitable habitat within the project site for giant garter snakes. Survey of the project area will be repeated if there is a lapse in construction activity of two weeks or greater. If a snake is encountered during construction, construction will cease until appropriate corrective measures have been completed or it has been determined that the snake will not be harmed. Any sightings will be reported to the USFWS immediately at (916) 414-6600.
- After completion of construction activities within suitable habitat, remove any temporary fill and construction debris that could be used as over-wintering sites and, wherever feasible, restore disturbed areas to pre-project conditions. If temporary fill or construction debris is to be removed between October 1 and April 30, it shall be inspected by a qualified biologist prior to removal to assure that giant garter snake are not using it as hibernaculae.

Project-Specific Avoidance and Minimization Measures

NUSD will also implement the following additional avoidance and minimization measures:

- Once the biologist determines there are no giant garter snakes present in the construction area, NUSD will install temporary exclusion fencing around work areas that are within 200 feet of aquatic habitat where suitable upland habitat is present, to prevent giant garter snakes from entering the work area during construction. The fencing will be maintained for the duration of the construction activities. If

¹ Programmatic Consultation with the U.S Army Corps of Engineers. 404 Permitted Projects with Relatively Small Effects on the Giant Garter Snake within Butte, Colusa, Glenn, Fresno, Merced, Sacramento, San Joaquin, Solano, Stanislaus, Sutter and Yolo Counties, California. Appendix C Standard Avoidance and Minimization Measures During Construction Activities in Giant Garter Snake (*Thamnophis gigas*) Habitat.

exclusion fencing is not installed, a qualified biological monitor will be present during all activities in suitable habitat within 200 feet of giant garter snake aquatic habitat.

Consistency with the NBHCP

The project's avoidance and minimization measures are consistent with the measures outlined in the NBHCP for work in areas adjacent to suitable giant garter snake habitat. In addition, NUSD will implement the following avoidance and minimization measure from the NBHCP:

- No plastic, monofilament, jute, or similar erosion control matting that could entangle snakes will be placed when working within 200 feet of snake aquatic habitat. Acceptable erosion control materials include coconut coir matting, tackified hydro-seeding compounds, or other material approved by CDFW and USFWS.

Significance after Mitigation

Implementation of Mitigation Measure 3.4-1a would reduce potentially significant impacts on giant garter snake to **less than significant** because it would minimize the risk of incidental take of individuals and avoid permanent loss or degradation of upland habitats.

Swainson's Hawk

Swainson's hawk is state listed as threatened and could nest in trees in the area, including along the West Drainage Canal, and use area agricultural fields as foraging habitat. According to the NBHCP, Swainson's hawks feed in the following cover types in the following order of suitability:

- ▶ native grassland,
- ▶ agriculture soon after discing,
- ▶ alfalfa and other hay crops,
- ▶ fallow fields,
- ▶ lightly grazed pasture,
- ▶ combinations of hay, grain, and row crops,
- ▶ rice fields prior to flooding and after draining,
- ▶ heavily grazed pasture.

The project site is a grass hayfield that provides moderate-quality foraging habitat value for Swainson's hawk. There is no suitable nesting habitat on the project site (i.e., there are no trees on the project site). However, there are several large trees within ½ mile of the site, including along the West Drainage Canal, that provide suitable nesting habitat and the TNBC Rosa East tract, which is managed for Swainson's hawk foraging, is present immediately west of the canal. Thus, construction could disturb nesting pairs in the trees adjacent to the West Drainage Canal, potentially resulting in nest abandonment and mortality of chicks and eggs.

Because the project would result in permanent loss of 18 acres of Swainson's hawk foraging habitat, and because school construction could result in increased noise that would marginally exceed ambient noise, including from roadways and the airport, the project's impacts on Swainson's hawk would be **potentially significant** and NUSD will implement the following mitigation measure, which requires providing compensatory foraging habitat in coordination with CDFW.

Mitigation Measure 3.4-1b: Provide Compensatory Swainson's Hawk Foraging Habitat and Conduct Biological Surveys to Avoid Active Nests during Construction.

NUSD will implement the following Swainson's hawk mitigation measures.

Nesting Habitat: NUSD will not initiate intensive construction activity, such as heavy equipment operation, within ¼ mile of an active Swainson's hawk nest between March 1 and September 15 (the nesting season). The project biologist will conduct nesting surveys of known nests or appropriate nesting habitat adjacent to the project site. If surveys show there are no active nests within the distances specified above, then no additional mitigation will be required.

If active nests are found and disturbances such as construction will occur during the nesting season, a no-disturbance buffer will be established around the active nest. No project activity will commence within the buffer areas until a qualified biologist has determined, in coordination with CDFW, the young have fledged, the nest is no longer active, or reducing the buffer would not result in nest abandonment. Per the NBHCP and CDFW guidelines, the recommended no-disturbance buffer for Swainson's hawk nests is ¼-mile in situations where the nest is within ¼ mile of existing urban development, and ½ mile if the nest is over ¼-mile from existing urban development, but the size of the buffer may be decreased if a qualified biologist, in consultation with CDFW, determines that such an adjustment would not be likely to adversely affect the nest.

Active Swainson's hawk nests within ¼ mile will be monitored by a qualified biologist during construction activities if the activity has potential to cause nest abandonment of fledging. 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 no-disturbance buffer will be increased until the agitated behavior ceases. The exclusionary buffer will remain in place until the chicks have fledged or as otherwise determined appropriate by a qualified biologist.

Foraging Habitat: Under CDFW guidelines, the following ratios apply for projects within 1 mile of an active nest tree:

- one acre of habitat management land on agricultural lands or other suitable habitats for each acre of development (1:1 ratio) with at least 10 percent met by fee title acquisition or a conservation easement allowing for the active management of the habitat, with the remaining 90 percent protected by a conservation easement.

Because of the high value of foraging habitat within the Natomas Basin to the recovery and survival of the Central Valley population of Swainson's hawk, the likely presence of active nests within 1 mile of the project site, and the County ordinance requirement to mitigate loss of AG-80 lands at a minimum 1:1 ratio, NUSD will replace each acre of foraging habitat lost (18 acres) as a result of implementing the project by creating 1 acre of higher quality alfalfa foraging habitat on lands that are currently used for lower foraging quality crops such as oat, wheat, corn, cotton, safflower, and sunflower, or unsuitable crops such as orchards and vineyards. Rice fields will not be used for conversion to alfalfa because that would potentially result in an adverse effect on giant garter snake. The mitigation habitat will be located within 1 mile of suitable nesting habitat and within 2 miles of an active nest. This mitigation would result in greater compensation than under the NBHCP, which only requires mitigation at a ratio of 0.5:1.

NUSD's proposed mitigation also goes beyond what is required under the County ordinance and CDFW guidelines, which require only that applicants replace lost foraging habitat with similar habitat and not that they provide higher quality foraging habitat. The replacement habitat will be managed for Swainson's hawk foraging values in perpetuity. NUSD will provide for the long-term management of the habitat management lands by funding a management endowment (the interest on which will be used for managing the lands) at the applicable rate. The funds will be provided to CDFW in a manner consistent with CDFW policy for land acquisition.

Alternatively, NUSD may participate in a fee program, such as that operated by TNBC, that is demonstrated to meet applicable minimum requirements for foraging habitat mitigation, as outlined above.

Alternatively, NUSD can participate in the County's program, which requires mitigation of Swainson's hawk foraging habitat by: (1) providing replacement land or paying a fee if the impact is less than 40 acres; or (2) only by providing replacement land if impacts are 40 acres or more. The first option would apply to the proposed project since it would disturb less than 40 acres of land area. The applicable impact fee and administrative fee would apply.

Significance after Mitigation

Compensatory Swainson's hawk foraging habitat would be higher quality than the existing habitat and would be compensated at the higher 1:1 ratio required by the County instead of the 0.5:1 ratio required by the NBHCP. By providing the same acreage as existing habitat and higher quality habitat for Swainson's hawk foraging and complying with Sacramento County and CDFW standard measures, impacts on Swainson's hawk would be reduced to a **less-than-significant** level because no active nests would be lost and the project would not result in decreased reproductive success of Swainson's hawks in the Natomas Basin.

Burrowing Owl

Burrowing owl is a CDFW species of special concern and is protected under Section 3503.5 of the California Fish and Game Code. Burrowing owls typically inhabit grasslands and other open habitats with low-lying vegetation. Burrowing owls are also known to nest and forage in idle agricultural fields, ruderal fields, and the edges of cultivated fields; however, these areas provide relatively lower quality habitat than native grasslands. Burrow availability is an essential component of suitable habitat. The burrowing owl is capable of digging its own burrow in areas with soft soil, but generally prefers to adopt those excavated by other animals, typically ground squirrels. In areas where burrows are scarce, burrowing owl can use pipes, culverts, debris piles, and other artificial features as burrows.

Although no recent occurrences of burrowing owl have been documented on or adjacent to the project site, burrows suitable for burrowing owls have been observed along a ditch along the eastern edge of the project site. No active burrows or burrows with sign of use were observed during protocol level surveys conducted on September 25, 2018. With the exception of one marginally suitable ground squirrel burrow located north of the project site along the West Drainage Canal, the remainder of the project site and surrounding areas surveyed contained hard-packed soil and lacked mammal burrowing activity. However, should an active burrow become established on or adjacent to the project site, the proposed project could result in the removal or disturbance of an active owl burrow or active nest site and take of individuals. This represents a **potentially significant** impact.

Mitigation Measure 3.4-1c: Provide Burrowing Owl Mitigation per CDFW Protocol

NUSD will implement the following steps as required by the CDFW protocol (CDFW 2012):

- To avoid minimize, and mitigate potential impacts on burrowing owl, NUSD will retain a qualified biologist to conduct focused breeding and nonbreeding season surveys for burrowing owls in areas of suitable habitat on and within 500 feet of the project site. Surveys will be conducted in accordance with Appendix D of CDFW's Staff Report on Burrowing Owl Mitigation (2012).
- If no occupied burrows are found, a letter report documenting the survey methods and results will be submitted to NUSD and CDFW and no further mitigation will be required.
- If an active burrow is found during the nonbreeding season (September 1 through January 31) and cannot be avoided, owls will be relocated to suitable habitat outside of the project area using passive or active methodologies developed in consultation with CDFW. This may include active relocation to TNBC habitat reserve areas if approved by CDFW and the TNBC reserve managers. No burrowing owls will be excluded from occupied burrows until a burrowing owl exclusion and relocation plan is developed by NUSD and approved by CDFW.
- If an active burrow is found during the breeding season (February 1 through August 31), occupied burrows will not be disturbed and will be provided with a 150- to 500-foot protective buffer unless a qualified biologist verifies through noninvasive means that either: (1) the birds have not begun egg laying, or (2) juveniles from the occupied burrows are foraging independently and are capable of independent survival. The size of the buffer will depend on the time of year and level of disturbance, as outlined in the CDFW Staff Report (2012, pg 9). Once the fledglings are capable of independent survival, the owls will be relocated to suitable habitat outside the project area in accordance with a burrowing owl exclusion and relocation plan developed in consultation with CDFW and the burrow will be destroyed to prevent owls from reoccupying it. No burrowing owls will be excluded from occupied burrows until a burrowing owl exclusion and relocation plan is approved by CDFW. Following owl exclusion and burrow demolition, the site will be monitored by a qualified biologist to ensure burrowing owls do not recolonize the site prior to construction.
- If active burrowing owl nests are found on the project site and these nest sites are lost as a result of implementing the project, NUSD will mitigate the loss through preservation of other known nest sites in Sacramento County, at a minimum ratio of 1:1. NUSD will develop a mitigation and monitoring plan for the compensatory mitigation areas.
- The mitigation and monitoring plan will include detailed information on the habitats present within the preservation areas, the long-term management and monitoring of these habitats, legal protection for the preservation areas (e.g., conservation easement, declaration of restrictions), and funding mechanism information (e.g., endowment). All burrowing owl mitigation lands will be preserved in perpetuity and incompatible land uses will be prohibited in habitat conservation areas.
- NUSD will transfer said burrowing owl mitigation land, through either conservation easement or fee title, to a third-party, nonprofit conservation organization (Conservation Operator) with CDFW named as a third-party beneficiary.

Significance after Mitigation

These measures are consistent with the burrowing owl measures in the NBHCP, which include pre-construction surveys, burrow avoidance, establishing buffer zones, relocation, and habitat compensation. Implementation of Mitigation Measure 3.4-1c would reduce potential impacts on burrowing owl to a **less-than-significant** level because it would ensure that burrowing owls are not disturbed during nesting so that project construction would not result in nest abandonment and loss of eggs or young. This measure would also ensure that burrowing owl habitat would be preserved at a 1:1 ratio of habitat loss.

Other Raptors and Nesting Birds

In addition to Swainson's hawk and burrowing owl, other special-status bird species and various raptors, including white-tailed kite, loggerhead shrike, red-shouldered hawk, red-tailed hawk, great horned owl, and American kestrel, could nest near the project site and use the site for foraging. All raptors are protected under California Fish and Game Code Section 3503.5, and white-tailed kite is a fully protected species.

Vegetation removal and ground disturbances associated with project implementation could result in direct destruction of active nests of common birds protected under the MBTA or California Fish and Game Code Section 3503. Project construction could also result in indirect disturbance of breeding birds causing nest abandonment by the adults and mortality of chicks and eggs. Loss of nests of common bird species (those not meeting the definition of special-status as provided above) would not be a significant impact under CEQA because it would not result in a substantial effect on their populations locally or regionally; however, destruction of bird nests is a violation of the MBTA and Section 3503 of the California Fish and Game Code and mitigation to avoid the loss of active nests of these species is required for compliance with these regulations.

Riparian vegetation along the West Drainage Canal could provide nesting habitat for various raptor species, loggerhead shrike, and nesting birds protected under California Fish and Game Code. Although no white-tailed kite or loggerhead shrike nest sites have been documented along the West Drainage Canal near the project site, surveys conducted in 2007 on TNBC reserve lands reported seven detections of loggerhead shrikes and nine detections of white-tailed kites on Fisherman's Lake preserve lands near the project site (TNBC 2008:Appendix C-2). Loggerhead shrike nests are not likely to be affected by construction activities on the project site because there is no nesting habitat within 200 feet of the site. White-tailed kite and other raptors, however, may be sensitive to disturbances within a greater distance from their nests. The loss or disturbance of white-tailed kite or other raptor nests would be a **potentially significant** impact.

Mitigation Measure 3.4-1d: Provide Mitigation for Other Special-Status and Nesting Birds

NUSD will implement the following measures to protect other special-status and nesting birds during project construction:

- NUSD's project biologist will conduct a preconstruction survey to identify active raptor nests on and within one-half mile of proposed construction activity no more than 14 days and no less than 7 days before any construction activity begins during the breeding season - between February 15 and August 31. The biologist will also conduct a preconstruction survey for active nests on and within one-quarter mile of the project site. If no active nests are found, then no further mitigation will be required.

- If active nests are found, impacts will be avoided by establishing appropriate buffers. No project activity will commence within the buffer area until the biologist confirms that the nest is no longer active. If the biologist determines that construction activities threaten to destroy an occupied nest or significantly disrupt breeding or rearing of young, a no-construction buffer zone (e.g., 50-foot diameter for passerines and 300-foot diameter for raptors) would be designated by the biologist; construction may only resume within this zone after it has been determined that breeding has ceased and any young birds have fledged.

Significance after Mitigation

Implementing Mitigation Measure 3.4-1d will reduce impacts on other special-status and nesting birds to a **less-than-significant** level because the surveys would determine the presence of nests and measures would be taken to protect active nests from construction activity.

Western Pond Turtle

The West Drainage Canal provides suitable aquatic habitat for western pond turtle. Western pond turtles are known to occur in Fisherman’s Lake and in the portion of the West Drainage Canal west of the project site. The area adjacent to the canal could provide upland habitat for western pond turtles. Pond turtles use unshaded upland slopes in dry substrates with clay or silt soils for nesting and can venture far from water to lay eggs. Construction could result in injury or death of turtles should they be present. Based on the agricultural disturbances, hard-packed soils present throughout the project site, and the distance from aquatic habitat, it is unlikely that the project site provides important upland habitat for western pond turtle; nonetheless, it is possible that individual turtles could venture onto the project site from time to time and they are known to occur in the adjacent canal. Therefore, project construction could result in injury or mortality of individual turtles and destruction of nests with eggs or hatchlings if construction occurs during the breeding season. Therefore, impacts on western pond turtle are considered **potentially significant**.

Mitigation Measure 3.4-1e: Avoid Take of Western Pond Turtles

NUSD will implement the following measures to avoid the potential loss of western pond turtles:

- A qualified biologist will conduct a preconstruction survey for western pond turtle no more than 48 hours prior to work within 200 feet of suitable aquatic habitat.
- If pond turtles are observed, a qualified biologist, with approval from CDFW, will relocate pond turtles to the nearest area with suitable aquatic habitat that will not be disturbed by project-related construction activities. If nesting activity is observed, an appropriate exclusion buffer will be determined in consultation with CDFW.
- A qualified biological monitor will be present during ground disturbance activities within 200 feet of aquatic western pond turtle habitat.

Significance after Mitigation

Implementing Mitigation Measure 3.4-1e would reduce potentially significant impacts on western pond turtle to a **less-than-significant** level because it would ensure that western pond turtles are removed from the site, and that

active nests are avoided, so that project construction would not result in mortality of individuals or destruction of eggs.

Central Valley Steelhead and Central Valley Fall run/ late fall-run Chinook Salmon

The West Drainage Canal provides potentially suitable habitat for Chinook Salmon and steelhead because both of these species are known to occur upstream of the project site in the Natomas Cross Canal and its tributary streams. Because the project site does not drain directly into the Natomas Cross Canal, no attraction flow exists to draw immigrating adults into the site. Additionally, because outmigrating juvenile Chinook Salmon and steelhead would be required to swim from the Natomas Cross Canal downstream in the North Drainage Canal to the East Drainage Canal, and then swim upstream into the West Drainage Canal (see Exhibit 3.9-1 in Section 3.9 Hydrology and Water Quality), it is unlikely that Chinook Salmon and steelhead juveniles would be present in the West Drainage Canal. Nonetheless, it is possible for immigrating adults and outmigrating juveniles to enter the West Drainage Canal.

Discharge of stormwater runoff from the school site into the West Drainage Canal could affect water quality and hydrology within the canal and downstream waters, resulting in indirect impacts on aquatic habitat. However, indirect effects resulting from changes in water quality and hydrology would be reduced to less than significant levels through implementation of best management practices, consistent with the project SWPPP and other permits. Additionally, a stormwater drainage plan, and erosion and sediment control plans will be implemented, which will include creation of on-site stormwater detention, as described in Chapter 2 of this EIR, “Project Description” and evaluated in Section 3.9, “Hydrology and Water Quality.” The project would be required to incorporate permanent stormwater measures to conform to applicable County of Sacramento ordinances and State and federal law and would involve using measures described in the *Sacramento Region Stormwater Quality Design Manual* (SSQP 2014). Permanent BMPs would be installed by the construction contractor and maintained by NUSD. Compliance with applicable County of Sacramento ordinances and State and federal law and implementation of permanent BMPs would ensure impacts are **less than significant**.

IMPACT 3.4-2 **Impacts on Essential Fish Habitat.** *The project would involve discharge of stormwater into West Drainage Canal, which is considered Essential Fish Habitat. This impact is less than significant.*

The West Drainage Canal falls within designated Pacific Coast Salmon EFH for Chinook Salmon. Although habitat is very low quality and individual Chinook Salmon are not likely to utilize areas adjacent to the project site, potential adverse effects to EFH could impact early migration life stages of Chinook Salmon. Impacts include changes to local water quality and habitat quality during construction through substrate disturbance, sediment mobilization and resulting increases in turbidity. Accidental release of fuels and lubricants from construction vehicles could also have negative impacts. Construction-related impacts would be temporary.

Temporary impacts to water and habitat quality resulting from construction activities are not expected to result in any significant losses or degradation of Pacific Salmon EFH considering the short term nature. Additionally, the implementation of appropriate avoidance and minimization measures, including implementation of best management practices consistent with the project SWPPP and other permits, as well as, a stormwater drainage plan, and erosion and sediment control plans would avoid and minimize potential impacts. Potential adverse effects are expected to be localized and relatively short lived such that any temporary losses of habitat functions or values would be **less than significant**.

Mitigation Measures

No mitigation measure is required.

IMPACT 3.4-3 **Impacts on Federally Protected Waters of the United States.** *The project would involve stormwater runoff into West Drainage Canal, a water of the United States. This impact is less than significant.*

The West Drainage Canal is a federally protected Water of the U.S. Indirect impacts on the West Drainage Canal could result from the creation of impervious surfaces and discharge of stormwater runoff into the West Drainage Canal. Potential indirect effects on the West Drainage Canal and downstream waters include reduction in water quality caused by urban runoff, erosion, and siltation, and increased flow volumes/altered hydrology. Section 3.9, “Hydrology and Water Quality” describes these potential indirect effects in more detail. However, indirect effects would be reduced to less than significant through implementation of best management practices, consistent with the SWPPP and other permits, and creation of a stormwater drainage plan and erosion and sediment control plans, which include creation of on-site stormwater retention. Compliance with applicable County of Sacramento ordinances and State and federal law and implementation of permanent BMPs, which could include roof and pavement drainage and containment, catch basins and/or infiltration trenches/pits, water/oil separators, vegetated/rock lined swales, waterbreaks, and revegetation would reduce indirect impacts to **less than significant**.

Mitigation Measures

No mitigation measure is required.

IMPACT 3.4-4 **Conflict with Sacramento County Code for Mitigating Impacts on Swainson’s hawk Foraging Habitat.** *The proposed project would be implemented in compliance with County General Plan policies and the County’s Swainson’s hawk ordinance. There would be no impact.*

The proposed project would result in loss of approximately 18 acres of Swainson’s hawk foraging habitat on the project site, as described under Impact 3.4-1. However, NUSD would provide compensatory mitigation consistent with the County’s Swainson’s hawk ordinance (County Code Chapter 16.130), which allows applicants the option of participating in the County’s Swainson’s hawk Mitigation Program. Participation in the County mitigation program is voluntary. Alternatively, NUSD would provide compensatory foraging habitat mitigation consistent with CDFW management guidelines, which is also permissible under the County ordinance. Also, because the project footprint would be setback 200 feet from the West Drainage Canal, the project would not conflict with General Plan policies regarding protection of stream corridors and riparian habitat. Therefore, the project would not conflict with Sacramento County Code or General Plan policies related to biological resources and there would be **no impact**.

Mitigation Measures

No mitigation measure is required.

IMPACT 3.4-5 **Conflict with the Natomas Basin Habitat Conservation Plan.** *The proposed project would not hinder the attainment of NBHCP goals and objectives. This impact is less than significant.*

The NBHCP is a regional conservation plan for minimizing and mitigating development impacts on covered species in the Permit Areas. Covered species include giant garter snake, burrowing owl, western pond turtle, Swainson's hawk, and 18 other special-status wildlife and plant species. USFWS approved the NBHCP and issued ITPs to the City of Sacramento, Sutter County, and TNBC in 2003 for incidental take of federally listed and state-listed species related to urban development. The NBHCP does not provide incidental take permit coverage for development in the unincorporated portions of Sacramento County within the Natomas Basin. However, the NBHCP provides coverage for TNBC activities in Sacramento County related to management of conservation lands acquired using development fees paid to purchase conservation land from willing sellers.

The project site is within the Plan Area of the NBHCP. However, the provisions of the NBHCP do not apply to projects outside the permit areas in the City of Sacramento or Sutter County. Neither NUSD nor Sacramento County is a permittee under the NBHCP and do not hold incidental take permits. The project would have the potential to conflict with the provisions of the NBHCP if it would:

- ▶ Remove high-quality habitat
- ▶ Reduce habitat availability
- ▶ Affect habitat connectivity
- ▶ Reduce the habitat value of existing TNBC reserves

The proposed school project would not have a substantial impact on habitat quality in the Natomas Basin. The 18-acre project site is cultivated with oat and rye hay and is rated as moderate-quality foraging habitat according to the Biological Technical Addendum prepared in support of the NBHCP (City of Sacramento et al. 2003:Appendix K). This crop type provides valuable Swainson's hawk foraging habitat while the vegetation remains low, but becomes less suitable through spring as the grass cover grows taller and denser. Therefore, prey accessibility is low during much of the breeding season. Foraging suitability of this crop type is highest during harvest when prey populations are high and readily accessible. While the project site is currently bordered on three sides by other agricultural crops and adjoins high-quality foraging habitat (alfalfa) on TNBC reserve lands to the west, it is directly adjacent to existing urban development to the east. Because foraging habitat of similar or higher quality is available, removal of these 18 acres (and replacement with compensatory habitat of higher quality) would be unlikely to reduce Swainson's hawk reproductive success. Furthermore, because CDFW mitigation guidelines (replacement ratio of 1:1) would provide more compensatory habitat than the NBHCP (replacement ratio of 0.5:1), and because NUSD would replace habitat lost from the project site with higher quality foraging habitat for Swainson's hawk, the project would not result in a net loss of high-quality habitat.

The project would not substantially reduce habitat availability in the basin or diminish opportunities to establish additional TNBC reserves. The NBHCP goal is to provide 0.5 acre of habitat reserve land for every acre of land that is developed within the Plan Area. At ultimate buildout projected under the NBHCP, 17,500 acres of land could be developed in the permit areas, requiring a total of 8,750 acres of habitat reserves, of which 25 percent is to be marsh habitat, 25 percent is to be upland habitat, and 50 percent is to be rice. The loss of approximately 18 acres of Swainson's hawk foraging habitat from the project site would not interfere with the ability of the NBHCP to attain its goal of 8,750 acres total of habitat reserves, or 2,187.5 acres of upland habitat suitable for Swainson's hawk foraging within the Natomas Basin.

TNBC has established 4,104 acres of reserves, as of December 31, 2016, toward its requirement to preserve 8,750 acres of land as habitat reserves for covered species. Of the total reserve lands acquired, 1,746 acres are in

Sacramento County and 2,386 acres are in Sutter County (TNBC 2017b). The largest contiguous patch of existing habitat reserve lands is located in the north basin in Sutter County. No new lands have been added to the habitat reserve system since 2012, but TNBC manages another 409 acres of habitat reserves in the basin that they do not own. In 2011, approximately 71 acres of TNBC reserve lands were sold to the Sacramento Area Flood Control Agency for the Natomas Levee Improvement Program, but these lands continue to be managed for habitat values to covered species. TNBC would need to acquire another 4,646 acres of habitat reserves to meet the permit goals of the NBHCP. As of April 2016, TNBC estimated there are 11,781 acres of land within the Natomas Basin committed to agriculture (TNBC 2017c, Table 2). If the proposed Natomas North Precinct Specific Plan were fully developed, there would be 6,576 acres of uncommitted land remaining in the Sacramento County portion of the basin. Development of 18 acres of this habitat would not appreciably reduce the amount of upland habitat available in the basin for TNBC to meet its goal and permit requirement and additional upland habitat remains available in the Sutter County portion of the Basin.

The NBHCP requires that by the end of the 50-year permit period, one habitat block must be at least 2,500 acres, and the balance of reserve lands must be in blocks of at least 400 acres in land area. This requirement is intended to minimize the “perimeter effect” to promote biodiversity and genetic diversity. The NBHCP provides that acquisition of reserve lands should consider setback zones and if possible, should be located at least 800 feet from existing or planned urban development. While the project site is adjacent to an existing TNBC habitat reserve (i.e., Rosa East), it would not be an ideal acquisition for the reserve system because it is adjacent to residential development. In addition, TNBC plans to focus future upland habitat acquisition efforts on lands in the Swainson’s hawk zone, within one mile of the Sacramento River where the majority of nesting pairs occur (TNBC 2016). The NBHCP does not, however, assume or depend on permanent protection of the 800-foot setbacks for successful management of the reserves and the setback standard is not meant to impose any management obligations on landowners within the 800-foot setback areas (City of Sacramento et al. 2003).

The project would not degrade habitat connectivity or connections between existing TNBC reserves. The West Drainage Canal is an important corridor for connecting habitat and TNBC land in the southern and northern portions of the basin. The school would be set back considerably from the West Drainage Canal since there is a separate 200-foot-wide parcel between the school and the canal. Thus the school would not substantially affect the viability and functionality of this corridor.

The proposed school project would not reduce the habitat value of existing reserves. The project would be set back from TNBC’s Rosa East reserve through the presence of the West Drainage Canal and the 200-foot-wide adjacent parcel. The Rosa East Reserve is managed for Swainson’s hawk foraging values. Construction of the school would not interfere with Swainson’s hawk foraging on the Rosa East Reserve because of the 275-foot buffer (200-foot-wide parcel plus 75+ foot West Drainage Canal) and because construction within proximity of active nests would be limited according to the avoidance and minimization measures presented in Mitigation Measure 3.4-2, including not initiating intensive construction within ¼ mile of an active nest. School operation also would not be expected to hinder Swainson’s hawk foraging at the Rosa East Reserve because of the 200-foot buffer plus the West Drainage Canal separating the school site from the reserve and because activity and noise levels at the school would not substantially change noise levels under current conditions. As described in Section 3.11, “Noise and Vibration,” noise levels would only marginally exceed existing ambient conditions that include the adjacent roadways and planes arriving at and departing from SMF. Furthermore, the school would not adversely affect management of existing TNBC reserves. Buffers are incorporated into TNBC reserves to

minimize the effects of incompatible adjoining land uses, including strips of native or ruderal vegetation along the edge of the reserve.

The NBHCP assumed that development within the Basin would be limited to a maximum of 17,500 acres. This maximum development acreage was based on the adopted land use plans at the time the NBHCP was drafted (i.e., at the 2001 baseline year) and consists of 8,050 acres within the City of Sacramento, 7,467 acres within Sutter County, and the 1,983-acre Metro Air Park. The project site is in an area that was and still is designated in the Sacramento County General Plan as agriculture (AG-80) and, therefore, was not accounted for in the total development acreage identified in the NBHCP. However, the County's Zoning Code implements the General Plan, and was updated after the County's General Plan Update in 2011. As described in Title III of the Sacramento County Zoning Code, K through 12 public schools is a permitted land use within the AG-80 zoning district (see Table 3.1 in Title III of the Sacramento County Zoning Code, Section 3.2.5, "Allowed Uses in All Zoning Districts"). The NBHCP acknowledges that there is uncertainty regarding the levels of development that would actually occur in the basin and states that if over the long term, development occurs and reduces the amount of Swainson's hawk foraging habitat in the region, the City, Sutter County, and TNBC would consider a number of measures, including changes to how the NBHCP is implemented. However, these changes would not affect agencies that are not permittees under the NBHCP, such as NUSD.

The project is not in direct conflict with the NBHCP and would not reduce the viability of the plan. The NBHCP provides incidental take coverage for plan participants (permittees) provided they comply with the conditions of the plan, including payment of mitigation fees to fund acquisition of habitat reserve lands at a ratio of 0.5 to 1. For development activities carried out outside of the permit areas by entities that are not covered under the NBHCP (non-plan participants), the NBHCP states that those projects would require CEQA compliance and would have to consider the effects of the action on federal and State-listed species and the effects of the actions on the effectiveness of the NBHCP. Therefore, as long as the project complies with State and federal laws regarding covered species and provides adequate measures to avoid and minimize take of covered species and offset the loss of habitat for covered species, the project is consistent with the NBHCP.

Although NUSD is not a permittee under the NBHCP, the project would include avoidance, minimization, and other measures consistent with those described in the NBHCP. With implementation of these measures, the project would avoid take of species covered in the NBHCP, including federally listed giant garter snake, state-listed Swainson's hawk, and species of special concern. Mitigation for loss of Swainson's hawk foraging habitat would go beyond what is required in the NBHCP, and the project will be set back from the West Drainage Canal to avoid impacts on giant garter snake. NUSD will also implement rigorous mitigation measures to minimize potential impacts on burrowing owl, western pond turtle, and nesting birds. Consistent with the NBHCP, NUSD will focus its protection and mitigation measures on giant garter snake and Swainson's hawk: the NBHCP states that the habitat needs of other special-status species overlap significantly with these two species.

The biological opinion for the NBHCP concluded that issuance of the ITP would not jeopardize the survival of the Central Valley population of the Swainson's hawk, or the species as a whole because:

- (1) the reserves created will provide foraging opportunities at the right time of year, during nesting;
- (2) approximately 13,000 acres of foraging habitat will not be affected;
- (3) the acquired foraging habitat will be closer to nesting trees;
- (4) more high-quality foraging habitat will be created; and

(5) significant foraging habitat exists to the west in Yolo County.

The proposed school project would not change any of the reasons for supporting the no jeopardy conclusion and therefore would not appreciably reduce the likelihood of the survival and recovery of Swainson's hawk in the wild. The project would likewise not appreciably reduce the likelihood of survival and recovery of any other covered species because it would apply measures to avoid take, would not result in any permanent loss of habitat for giant garter snake, and would compensate for the loss of habitat for other upland species simultaneously with compensation for loss of Swainson's hawk foraging habitat.

Finally, the United States District Court of the District of Columbia upheld, in its decision on National Wildlife Federation (NWF) et al. v Norton, the Secretary's finding that failure of other jurisdictions to participate in the NBHCP does not undermine its effectiveness. The court found that the plan does not assume or require participation of third parties to be effective and that the Plaintiff's claim that the plan depends on voluntary actions by non-participants in the plan is without merit because, as the plan explains, development or action by non-permittees would require additional state and federal approvals and environmental review. NUSD is conducting thorough environmental review as required under CEQA and would comply with all State and federal laws protecting species covered under the NBHCP. To that end, NUSD will implement Mitigation Measures 3.4-1, 3.4-2, 3.4-3, 3.4-4, and 3.4-5 to avoid, minimize, and compensate for impacts on species covered under the NBHCP. Therefore, the proposed project is consistent with the NBHCP, biological opinion, findings, NBHCP EIR, and Federal District Court findings and would not reduce the effectiveness of the NBHCP. The impact is **less than significant**.

Mitigation Measures

No mitigation measure is required.

3.5 CULTURAL RESOURCES

3.5.1 INTRODUCTION

This section evaluates the potential impacts the proposed school project on cultural and Tribal resources. Cultural resources are defined as buildings, sites, districts, structures, burials, or objects having historical, architectural, archaeological, or cultural importance. They can be generally split into three categories: prehistoric or historic archaeological sites; built environment resources, which includes buildings, structures, objects, districts, and landscapes; and tribal cultural resources, or places or artifacts with a special cultural significance to Native Americans. The section begins by describing the natural and cultural environmental setting identified through background research, Native American consultation, and field investigations, followed by an overview of pertinent regulations and the impact analysis. (Potential impacts on paleontological resources and unique geological features are addressed in Section 3.6 of this EIR).

3.5.2 ENVIRONMENTAL SETTING

The project site is located immediately west of the city of Sacramento boundary within the North Natomas area of Sacramento County, California. Specifically, the project site is located in Section 4 of Township 9 North, Range 4 East of the Taylor Monument California United States Geologic Survey (USGS) 7.5-minute quadrangle map. This area is part of the Sacramento Valley, which comprises the northern third of California's Central Valley. The project area landform consists of basin floor that was formed by Pliocene to Holocene alluvium deposits. The soils consist predominantly of Clear Lake and Jacktone clays with 0 to 2 percent slopes (USDA 2016).

3.5.2.1 NATURAL SETTING

The project site is underlain by Quaternary alluvium and marine deposits, from the Pliocene to Holocene era (Jennings et al. 1977). Historically, the Sacramento River flooded almost every winter, creating a shallow lake over 100 miles long and up to 50 miles wide, which covered the project site. During floods, natural levees were created along the riverbank, and the river bottom gradually built up creating natural basins, lower than the river. Floodwaters filled these basins, which took many months to gradually dry from seepage or runoff. The natural levees were the only high and dry ground during floods. When the annual seasonal lake finally dried up, usually by midsummer, the land that remained was nearly as impenetrable as the lake had been and was useless for habitation, agriculture, or grazing (Peak & Associates 1997). Since the land was essentially uninhabitable, it is unlikely that archaeological deposits would be discovered.

PREHISTORIC SETTING

Although human occupation of the northern Sacramento Valley may extend back 10,000 years or more, reliable evidence of the presence of such an early human presence is lacking and may be deeply buried (Moratto 1984). The following discussion of the prehistoric background is adapted from Rosenthal, et al. (2007). The prehistoric background can be categorized as:

- ▶ **The Paleo-Indian Period:** The Paleo-Indian Period (12,000 to 10,500 Before Present [B.P.]) saw the first demonstrated entry and spread of humans into California. Characteristic artifacts recovered from archaeological sites of this time period include fluted projectile points (constructed from chipped stones that have a long groove down the center called a "flute") and large, roughly fashioned cobble and bifacially-flaked

stone tools that were used in hunting megafauna such as mastodon, bison, and mammoth that inhabited the area during this period.

- ▶ **The Lower Archaic Period:** The beginning of the Lower Archaic Period (10,500 to 7500 B.P.) coincides with that of the Middle Holocene climatic change, which resulted in widespread floodplain deposition. This episode resulted in most of the early archaeological deposits being buried. Most tools were manufactured of local materials, and distinctive artifact types include large dart points and the milling slab and handstone (i.e., mano).
- ▶ **The Middle Archaic Period:** The Middle Archaic Period (7500 to 2500 B.P.) is characterized by warm, dry conditions that dried up pluvial (landlocked) lakes. Economies were more diversified and may have included the introduction of acorn processing technology, although hunting remained an important source of food. Artifacts characteristic of this period include milling stones and pestles and a continued use of a variety of implements interpreted as large dart points.
- ▶ **The Upper Archaic Period:** The Upper Archaic Period (2500 to 850 B.P.) corresponds with a sudden turn to a cooler, wetter and more stable climate. The development of status distinctions based upon wealth is well documented in the archaeological record. The development of specialized tools, such as bone implements and stone plummets as well as manufactured shell goods (e.g., Olivella saucer and saddle beads, Haliotis ornaments) were prolific during this time. The regional variance of economies was largely due to the seasonality of resources that were harvested and processed in large quantities.
- ▶ **The Emergent Period:** Several technological and social changes distinguish the Emergent Period (850 B.P. to Historic) from earlier cultural manifestations. The bow and arrow were introduced, ultimately replacing the dart and throwing spear, and territorial boundaries between groups became well established. In the latter portion of this period (450 to 1800 B.P.), exchange relations became highly regularized and sophisticated. The clam disk bead developed as a monetary unit of exchange, and increasing quantities of goods moved greater distances. It was at the end of this period that contact with Euroamericans became commonplace, eventually leading to intense pressures on Native American populations.

Ethnographic Setting

The project site is situated within the traditional territory of the Nisenan. The western boundary of Nisenan territory was the western bank of the Sacramento River; the eastern boundary was the crest of the Sierra Nevada; the southern boundary was likely a few miles south of the American River. The northern boundary has not been clearly established due to similarities in language with neighboring tribes (Wilson and Towne 1978:387–389).

Nisenan settlement locations depended primarily on elevation, exposure, and proximity to water and other resources. Permanent villages were usually located on low rises along major watercourses. Houses were domed structures measuring 10 to 15 feet in diameter and covered with earth and grass. Brush shelters were used in the summer and at temporary camps during food-gathering rounds. Larger villages often had semi-subterranean dance houses that were covered in earth, grass or brush, had a central hole at the top to allow the escape of smoke, and an east-facing entrance. Another common village structure was the granary, which was used for storing acorns.

The rich valley environment the Nisenan occupied provided abundant year-round food resources. Hunting, gathering, and fishing went on throughout the year, though what was procured depended on seasonal availability.

Due to this seasonal variability, the Nisenan did not rely on a single crop, but on many different staples such as acorns, seeds, nuts, grasses, herbs, roots, tubers, berries, and wild fruits. Deer, rabbit, and salmon were the chief sources of animal protein in the aboriginal diet, but many insect and other animal species were taken when available (Wilson and Towne 1978:389). Today, Nisenan descendants are reinvesting in their traditions, and represent a growing and thriving community.

HISTORIC SETTING

Although numerous activities have left their mark on the project area since the early 19th century, the following endeavors have resulted in the most notable and enduring traces on the present-day landscape.

Early Settlement

Although Russian trappers and traders associated with the Hudson's Bay Company likely traveled through Sacramento, Sutter, and Yuba counties during earlier years, the first well-documented European exploration of the general region occurred in 1808, when Spanish explorer Gabriel Moraga led an expedition from Mission San Jose to the northern Sacramento Valley (Hoover, Rensch, and Rensch 1966). The earliest Euro-American settlement coincided with the establishment of land grants by the Mexican government in the 1840s. John A. Sutter obtained the first such grant in the region in 1841. Sutter's New Helvetia Rancho encompassed lands on the east bank of the Feather and Sacramento rivers and included the project area (Beck and Haase 1974).

Construction of a railroad was a natural outgrowth of Sacramento's expansion and the need to deliver supplies to the California foothills. The railroad was completed by February 1856. The first rail line ran to the town of Folsom, where at least 21 different wagon trains then carted goods from the train to outlying areas as far away as Carson City, Nevada. The Central Pacific and its successor, the Southern Pacific Railroad, became the major industry in Sacramento after 1863 (Historic Environment Consultants 1998).

Agriculture

Agriculture and ranching were the primary industries in the present-day Sacramento region during the historic period. Regional ranching originated on the New Helvetia Rancho in the early 1840s. The Gold Rush precipitated growth in agriculture and ranching, as ranchers and farmers realized handsome returns from supplying food and other goods to miners. Wheat, fruit orchards, row crops, and cattle were all successful regional enterprises. Frequent floods plagued the residents of the region, however, and posed a significant threat to the viability of agricultural interests and further settlement.

Flood Control

Initial efforts at flood control were usually uncoordinated and consisted of small levees and drains constructed by individual landowners. These features proved insufficient to protect cultivated land, and much of the project area and vicinity flooded regularly (Dames & Moore 1994a:8-12).

In the early part of the 20th century, the state legislature established the Reclamation Board (now called the Central Valley Flood Protection Board) to take flood control and levee planning responsibility for agricultural, residential, commercial, or industrial lands threatened by permanent or temporary flooding. In 1911, the State approved and began implementation of the Sacramento River Flood Control Project (SRFCP), which included the construction of levees, weirs, and bypasses along the river to channel floodwaters away from population centers.

Under the SRFCP, new reclamation districts were created, including Reclamation District (RD) 1000, which is responsible for flood control on approximately 55,000 acres in the Natomas area, including the project area. The infrastructure of RD 1000 was completed in the 1920s. It includes levees, drainage canals, pumps, irrigation systems, agricultural fields, and roads, as well as remnant natural features. The originally constructed features included levees and exterior drainage canals, an interior drainage canal system, nine pumping plants, and a series of levee and interior roads and unpaved rights-of-way between the farm fields.

3.5.3 BACKGROUND RESEARCH METHODS

RECORDS SEARCH

Background research included a records search conducted on April 18, 2016, at the North Central Information Center (NCIC) of the California Historic Resources Information System (CHRIS), located at California State University, Sacramento. Confidential Appendix C provides a description of the sites identified in the area, previous cultural resources studies, and copies of the records and reports reviewed.

The records search included the project site and a ¼-mile radius to identify any recorded cultural resources at or adjacent to the project site and to assess the sensitivity of the area. Other resources reviewed included the National Register of Historic Places (NRHP), California Register of Historical Resources (CRHR), the *California Inventory of Historic Resources* (1976), *California Historical Landmarks* (1996), *California Points of Historical Interest* (1992 and updates), the Historic Property Data File, and historic General Land Office (GLO) and USGS maps.

The records search found two investigations that included the project area and one investigation conducted within ¼-mile of the project site. The records search also identified one significant cultural resource directly adjacent to the proposed project site. This resource is the West Drainage Canal feature of the RD 1000 Rural Historic Landscape District. The RD 1000 District has been previously evaluated and found eligible for NRHP and CRHR listing as a Rural Historic Landscape District at the state level of significance for the period from 1911 to 1939 because it is "...associated with events that have made a significant contribution to the broad patterns of our history" (NRHR Criterion A). The State Historic Preservation Office (SHPO) concurred with this determination (Derr 1997). The West Drainage Canal is considered to be a contributing element of RD 1000. The location, materials, and design (i.e., its function within the drainage system) remain unchanged from the period of interest. Despite being located outside of the proposed footprint of construction for the school building, NUSD proposes to discharge stormwater into the West Drainage Canal via an existing RD 1000 outfall.

Mitigation measures were recommended and implemented for the entire RD 1000 Rural Historic Landscape District during the U.S. Army Corps of Engineers (USACE) American River Watershed Project after a "determination of effects" statement concluded that project activities would adversely affect both contributing and non-contributing elements (Dames & Moore 1994b). The American River Watershed Project proposed to upgrade flood control protection along the lower American River in the vicinity of Sacramento to provide 200-year level of flood protection. The upgrades to the flood control system would alter various contributing elements of the RD 1000 Rural Historic Landscape District, but it was determined that the adverse effects must be accepting in the interest of public safety (Dames & Moore 1994b:53-55). The mitigation measures undertaken to resolve the adverse effects to this property consisted of Historic American Engineering Record documentation (prepared by Peak & Associates 1997), videotapes of the historic properties, and a list of repositories where copies of the information would be available for public review. The mitigation measures were negotiated between the

California Office of Historic Preservation, and the lead federal agency (USACE), and the lead state agency, the Sacramento Area Flood Control Agency (Peak and Associates 1997). Contributing elements of the historic district have been extensively documented as mitigation for potential impacts of future development. However, impacts associated with discharge via the outfall into the West Drainage Canal would not impact the location, materials or design of this contributing element, The potential for encountering buried archaeological deposits at this location ranges from low to very low.

The project site is located within the vicinity of the historic location of Fisherman's Lake. South of the project site, and within Fisherman's Lake a combination of surface inventory, shovel test units, and geotechnical backhoe test excavations conducted at the Natomas Urban Development Borrow Area indicated that, with minor deviations in depth of the stratigraphic levels, the sediments consisted of sandy clay that extended to at least 200 cm below the existing ground surface. These sediments are most likely associated with historic mining debris (USACE and SAFCA 2010).

Further south within the historic Fisherman's Lake, Holocene-age soils were identified. Radiocarbon dating indicates that these basins remained consistent features on the landscape throughout the Middle and Late Holocene. While these buried soils are former surfaces that were available for human occupation, they were likely topographically lower areas of the landscape that may not have been attractive for human use or sustained occupation. As such, it was concluded that these basin areas are considered to have a generally low potential for buried archaeological sites (USACE and SAFCA 2010).

FIELD INVESTIGATIONS

Two field surveys have been conducted for this project. An initial pedestrian survey was conducted in January 2008, before the project was delayed by Federal Emergency Management Agency changes to the area's flood risk classification (EDAW 2009). No significant cultural resources were identified. A second pedestrian survey of the project site, including off-site improvement areas, was conducted in May 2016. Within the exception of the previously documented West Drainage Canal no significant cultural resources were identified during this survey, as described in Confidential Appendix C. On August 16, 2018, AECOM archaeologist, Diana Ewing M.A., conducted a field survey of the NUSD the off-site project areas that extend to the east and south of side of the project site. The utility rights-of-way had been freshly mowed and no cultural resources were observed. Based on these field investigations, the potential for encountering buried archaeological deposits at this location ranges from low to very low.

NATIVE AMERICAN COORDINATION

The Native American Heritage Commission (NAHC) was contacted on April 22, 2016 to request a Sacred Lands File (SLF) search and a contact list of traditionally and culturally geographically affiliated Native American individuals or groups who may have an interest in the project or information regarding Tribal Cultural Resources/Traditional Cultural Properties (TCR/TCP) in the area. In their response email dated April 27, 2016, the NAHC stated that a search of the SLF database produced no results. The NAHC provided a list of seven Native American organizations and individuals who may have knowledge of the area. On June 1st, 2018, NUSD sent letters and email messages to all of the Native American Tribal representatives identified by the NAHC. This message provided information about the proposed project and invited input. Based on responses, NUSD identified alternative meeting dates, times, and locations, and have met with Tribal representatives at the proposed site to

invite further input. NUSD will continue to offer opportunities for input throughout the environmental review process.

3.5.4 REGULATORY CONTEXT

FEDERAL PLANS, POLICIES, REGULATIONS, AND LAWS

National Historic Preservation Act

Section 106 of the National Historic Preservation Act (NHPA) of 1966 and its implementing regulations (36 Code of Federal Regulations [CFR] Part 800, as amended 1999) requires federal agencies to consider the effects of their actions, or those they fund or permit, on properties that may be eligible for listing or are listed in the NRHP. The 36 CFR Part 800 regulations, implementing Section 106, call for consultation with the State Historic Preservation Officer (SHPO), Native American tribes, and interested members of the public throughout the Section 106 compliance process. The four principal steps are:

1. Initiate the Section 106 process (36 CFR Part 800.3).
2. Identify historic properties, cultural resources that are eligible for inclusion in the NRHP (36 CFR Part 800.4).
3. Assess the effects of the undertaking to historic properties within the area of potential effect (36 CFR Part 800.5).
4. Resolve adverse effects (36 CFR Part 800.6).

Adverse effects on historic properties are often resolved through preparation of a memorandum of agreement (MOA) developed in consultation between the lead federal agency, the SHPO, Native American tribes, the Advisory Council on Historic Preservation (ACHP), and interested members of the public. The MOA stipulates procedures that treat historic properties to mitigate adverse effects (36 CFR Part 800.14[b]).

The NRHP is a register of districts, sites, buildings, structures, and objects of significance in American history, architecture, archaeology, engineering, and culture. The regulations provided in 36 CFR Part 60.4 describe the criteria to evaluate cultural resources for inclusion in the NRHP. Cultural resources can be significant on the national, State, or local level. Properties may be listed in the NRHP if they possess integrity of location, design, setting, materials, workmanship, feeling, and association, and:

- a) are associated with events that have made a significant contribution to the broad patterns of our history;
- b) are associated with the lives of persons significant in our past;
- c) embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess a artistic value, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
- d) have yielded, or may be likely to yield, information important in prehistory or history.

Most prehistoric archaeological sites are evaluated with regard to Criterion d of the NRHP, which refers to site data potential. Such sites typically lack historical documentation that might otherwise adequately describe their

important characteristics. Archaeological methods and techniques are applied to gain an understanding of the types of information that may be recovered from the deposits. Data sought are those recognized to be applicable to scientific research questions or to other cultural values.

Site integrity is also a consideration for the NRHP eligibility of an archaeological locale. The aspects of integrity include location, setting, design, workmanship, feeling, and association. These may be compromised to some extent by cultural and post-depositional factors (e.g., highway construction, erosion, bioturbation, etc.), yet the resource may still retain its integrity for satisfying Criterion d if the important information residing in the site survives.

STATE PLANS, POLICIES, REGULATIONS, AND LAWS

California Environmental Quality Act

The California Environmental Quality Act (CEQA) provides a broad definition of what constitutes a cultural resource. Cultural resources can include traces of prehistoric habitation and activities, historic-era sites and materials, and places used for traditional Native American observances or places with special cultural significance including TCRs. In general, any trace of human activity more than 50 years in age is to be treated as a potential cultural resource.

However, only significant cultural resources need to be addressed. The CEQA Guidelines define a significant resource as a resource listed or eligible for listing in the California Register of Historical Resources (CRHR) (Public Resources Code Section 5024.1). A resource may be eligible for inclusion in the CRHR if it:

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

In addition to meeting one or more of the above criteria, resources eligible for listing in the CRHR must retain enough of their historic character or appearance to be recognizable as cultural resources and convey the reasons for their significance. Integrity is evaluated with regard to the retention of location, design, setting, materials, workmanship, feeling, and association (OHP 1999:71).

The CEQA Guidelines also require consideration of unique archaeological resources (Section 15064.5). As used in the Public Resources Code (Section 21083.2), the term "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, a high probability exists 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, or

3. Is directly associated with a scientifically recognized important prehistoric or historic event or person.

Assembly Bill 52

AB 52, passed in 2014, amends sections of CEQA relating to Native Americans. AB 52 establishes a new category of cultural resources, named TCRs and states that a project that may cause a substantial adverse change in the significance of a tribal cultural resource may have a significant effect on the environment.

Section 21074 was added to the Public Resources Code to define TCRs, as follows:

- (a) “TCRs” 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 TCR 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 “non-unique 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).

Per AB 52, the lead agency must begin consultation with any tribe that is traditionally or culturally affiliated with the geographic area. In addition, AB 52 includes time limits for certain responses regarding consultation, as follows:

- ▶ within 14 days of determining that an application for a project is complete or a decision by a public agency to undertake a project, the lead agency shall provide formal notification to the designated contact of, or a tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice;
- ▶ after provision of the formal notification by the public agency, the California Native American tribe has 30 days to request consultation; and
- ▶ the lead agency must begin consultation process within 30 days of receiving a California Native American tribe’s request for consultation.

California Health and Safety Code

Human remains are protected under California Health and Safety Code Section 7050.5 and Section 7052. If human remains are uncovered in a location other than a dedicated cemetery, no excavation or disturbance is permitted until the County Coroner has determined that:

1. the remains are not subject to any investigation as to the circumstances, manner, and cause of any death and
2. recommendations for the treatment and disposition of the human remains have been made to the person responsible.

If the coroner has reason to believe that the remains are those of a Native American, he or she must contact the Native American Heritage Commission (NAHC) within 24 hours.

California Public Resources Code

Per California Public Resources Code Section 5097.9, if the NAHC receives notification of a discovery of Native American human remains from a county coroner, it shall immediately notify those persons it believes to be most likely descended from the deceased Native American (Most Likely Descendant). The Most Likely Descendant will have 48 hours to complete a site inspection and make recommendations after being granted access to the site. Public Resources Code 5097.9 suggests that the concerned parties may extend discussions beyond the initial 48 hours to allow for the discovery of additional remains.

The landowner, upon any discovery of Native American remains, must ensure that the immediate vicinity is not damaged or disturbed by further development activity until consultation with the Most Likely Descendant has taken place, as prescribed by the California Public Resources Code. A range of possible treatments for the remains, including nondestructive removal and analysis, preservation in place, relinquishment of the remains and associated items to the descendants, or other culturally appropriate treatment may be discussed.

State Senate Bill 18, Chapter 905, Statutes of 2004

California State Senate Bill 18 (SB 18), signed into law in September 2004 and implemented March 1, 2005, requires cities and counties to notify and consult with California Native American Tribes about proposed local land use planning decisions for the purpose of protecting Traditional Tribal Cultural Places (also referred to as Traditional Cultural Properties). This law directed an amendment to the General Plan Guidelines to require consultation with, and advice from California Native American Tribes. According to the Tribal Consultation Guidelines, SB 18 “requires local governments to involve California Native Americans in early stages of land use planning, extends to both public and private lands, and includes both federally recognized and non-federally recognized tribes.”

REGIONAL AND LOCAL PLANS, POLICIES, REGULATIONS, AND ORDINANCES

Sacramento County General Plan

Sacramento County recognizes the importance of significant cultural resources. The *2011 County of Sacramento General Plan* (County General Plan) (Sacramento County 2011), seeks to protect these resources through the implementation of objectives, goals, and policies that “Promote the inventory, protection and interpretation of the

cultural heritage of Sacramento County, including historical and archaeological settings, sites, buildings, features, artifacts and/or areas of ethnic historical, religious or socio-economical importance.” Pertinent cultural resource policies identified in the County General Plan are outlined below:

- ▶ **Policy CO-150.** Utilize local, state, and national resources, such as the North Central Information Center (NCIC), to assist in determining the need for a cultural resources survey during project review.
- ▶ **Policy CO-152.** Consultations with Native American tribes shall be handled with confidentiality and respect regarding sensitive cultural resources on traditional tribal lands.
- ▶ **Policy CO-155.** Native American burial sites encountered during preapproved survey or during construction shall, whenever possible, remain in situ. Excavation and reburial shall occur when in situ preservation is not possible or when the archeological significance of the site merits excavation and recording procedure. On-site reinterment shall have priority. The project developer shall provide the burden of proof that off-site reinterment is the only feasible alternative. Reinterment shall be the responsibility of local tribal representatives.
- ▶ **Policy CO-158.** As a condition of approval of discretionary permits, a procedure shall be included to cover the potential discovery of archaeological resources during development or construction.

3.5.5 ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

ANALYSIS METHODOLOGY

Potential impacts on cultural resources were assessed by identifying the activities that could affect those resources. These activities include excavation and grading for construction of access roads, staging areas, playing surfaces, buildings and foundations, parking lots, and utilities. This analysis considers direct and indirect impacts that would cause substantial adverse changes to both known cultural resources and those that may be present. As described in Section 3.5.4., “Regulatory Context,” substantial adverse changes include physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of the resource would be materially impaired.

Based on Appendix G of the CEQA Guidelines a project is considered to have a significant impact on Cultural Resources if it would:

- ▶ Cause a substantial adverse change in the significance of a historical resource as defined in 15064.5(b)(1);
- ▶ Cause a substantial adverse change in the significance of an archaeological resource pursuant to 15064.5(c)(2);
- ▶ Disturb any human remains, including those interred outside of formal cemeteries pursuant to 15064.5(d)(1);
or
- ▶ Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined

in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

IMPACT ANALYSIS

IMPACT **Possible Discovery of Prehistoric or Historic Cultural Resources, Including TCRs.** *Project construction*
3.5-1 *could affect previously undiscovered cultural resources. This impact would be **potentially significant**.*

One contributing element of the RD 1000 Rural Historic Landscape District, the West Drainage Canal (Dames & Moore 1994b:53), is located at the western end of an existing RD 1000 outfall that will be used for project drainage. Although this feature has been completely documented as mitigation for the unavoidable adverse effects associated with the USACE American River Watershed Project and other development within the Natomas Basin (Peak and Associates 1997), discharge from the outfall would not result in impacts to the locations, design, or materials of the West Drainage Canal no further mitigation is required. Subsequent field investigations conducted in 2008 and 2016 did not identify additional cultural resources within the project site. Consequently, the proposed project would not cause a substantial adverse change in the significance of a known cultural resource as defined in Section 15064.5 of the CEQA Guidelines.

NUSD consulted with the NAHC and local Native American groups and individuals. The consultation included contacting the local Native American individuals identified by the NAHC via letters and meeting with Tribal representatives. NUSD will continue to invite input throughout the environmental review process.

Based on historical flooding of the area, it is unlikely that the site contains TCR, as defined in Public Resources Code Section 21074. Nevertheless, NUSD completed requested consultations and field visits to evaluate the potential for TCRs and the results of further consultation will be included in the Final EIR. During a field visit conducted on August 13, 2018 Tribal representatives with the stated that, although the potential is limited, the project site could contain TCRs, including human remains. Because this potential remains, this impact would be **potentially significant** and NUSD will implement Mitigation Measures 3.5-1a through 3.5-1g and 3.5-2, described below.

Although no prehistoric cultural resources were identified at the project site, the potential for encountering buried cultural resources exists. The area likely fluctuated between marshland and a shallow lake during prehistory and before reclamation occurred in the early 20th century. However, the general area may have served as a resource procurement area for prehistoric peoples and cultural resources may be present at or below the ground surface. There is a **potentially significant** impact. NUSD will implement the following mitigation measures.

Mitigation Measure 3.5-1a: Provide Construction Crews with Information Regarding the Potential to Encounter Previously Unrecorded Archaeological Resources.

Before the start of any earthmoving activities, NUSD will retain a qualified archaeologist to inform construction personnel involved with earthmoving activities regarding the types of cultural resources or features that could be encountered during construction. These include, but are not limited to flaked stone tools or ground stone milling tools. Historic-era artifacts may include, but are not limited to ceramic, glass, or metal objects, nails, and miscellaneous hardware. The archaeologist will provide information regarding the regulatory protections afforded to archaeological resources and procedures to follow if archaeological resources are exposed during excavation, including notifying NUSD representatives.

Mitigation Measure 3.5-1b: Conduct Archaeological Monitoring During Initial Excavation.

During the initial excavation for the proposed wastewater infrastructure in the primary access roadway, a qualified geoarchaeologist will assess the potential for the presence of buried archaeological sites, including TCRs and human remains. Native American Tribal representatives will be provided with a schedule for the excavations for the wastewater infrastructure and NUSD will extend an invitation for tribal monitors to observe the work.

Mitigation Measure 3.5-1c: Stop Work if Prehistoric or Historic Subsurface Cultural Resources are Discovered, Consult a Qualified Archaeologist to Assess the Significance of the Find, and Conduct Resource Documentation and Data Recovery as Needed.

If unrecorded cultural resources (e.g., midden, unusual amounts of shell, animal bone, bottle glass, ceramics, structure/building remains, etc.) are encountered during construction, all ground-disturbing activities will be restricted within a 100-foot radius of the find or a distance determined by a qualified professional archaeologist to be appropriate based on the potential for disturbance of additional cultural resource materials. A qualified archaeologist will identify the materials, determine their potential to meet the definition of a significant cultural resource in Section 15064.5 or a TCR under AB 52, and formulate appropriate measures for their treatment. Potential treatment methods for significant and potentially significant resources may include, but would not be limited to, no action (i.e., resources determined not to be significant), avoidance of the resource through changes in construction methods or project design, or testing and data recovery, in accordance with applicable State requirements and/or in consultation with affiliated Native American Tribal representative/s.

Mitigation Measure 3.5-1d: Prepare and Submit an Archaeological Testing Plan.

If cultural resources are discovered, the qualified archaeologist will prepare and submit to NUSD an archaeological testing plan. The testing plan will identify the types of archaeological resources that could be affected by the development, the testing method to be used, and the locations recommended for testing. The purpose of the testing plan will be to determine the potential for the presence or absence of archaeological resources in subsurface contexts; identify any archaeological resources found; and evaluate their significance. The archaeologist will submit a report outlining any additional required measures, including additional archaeological testing and/or data recovery.

Mitigation Measure 3.5-1e: Implement Data Recovery Measures, Where Necessary, for Important Archaeological Resources.

Data recovery will be implemented if an adverse impact on a unique or significant archaeological resource cannot be avoided. NUSD will prepare an archaeological data recovery plan that identifies what scientific/historical research questions are applicable to the resource, what data classes the resource is expected to possess, and how the data would address the applicable research questions. Data recovery may include cataloging, artifact analysis, development of interpretive material, and curation. Data recovery will be limited to areas that could be adversely affected by construction. If the archaeological resource is associated with the Native American inhabitation, NUSD will consult with the relevant tribes and invite a Native American who is traditionally and culturally affiliated with the geographic area to observe the removal of native material.

Mitigation Measure 3.5-1f: Conduct Construction Monitoring.

If cultural resources are discovered, NUSD will determine the need for archaeological monitoring. If monitoring is needed, NUSD will provide a cultural resource monitor. The monitor will log construction activities, observations, types of equipment used, and any new archeological discovery (including the cultural material observed and its location). Photographs will be taken, as necessary, to supplement the documentation. The logs, including photographs, will be signed and dated and submitted to NUSD in a monitoring report. NUSD will determine which activities should be monitored and when monitoring will cease.

If an intact archaeological deposit is encountered, the monitor will temporarily halt or redirect ground-disturbing activities and equipment until the resource is evaluated. The archaeologist will immediately notify NUSD, assess the significance of the encountered archaeological deposit, and present the findings to NUSD with recommendations regarding resource avoidance and/or mitigation.

Mitigation Measure 3.5-1g: Prepare and Submit an Archaeological Resources Report.

The archaeological consultant will submit an archaeological resources report to NUSD that evaluates the historical significance of any discovered archaeological resource and describes the archaeological and historical research methods employed in the archaeological testing/monitoring/data recovery program(s) undertaken.

Significance after Mitigation

Implementation of the above described would reduce potentially significant impacts on previously undiscovered cultural resources to a **less-than-significant** level because compliance with the above-listed procedures would address concerns about loss of, or substantial adverse changes to, significant cultural resources. The likelihood of encountering undiscovered cultural resources at the project site is low, since the project area has been surveyed for cultural resources multiple times and no cultural resources have been identified. The Natomas Basin has been intensively and extensively inventoried for cultural resources and the project area does not have a high probability for buried resources based on location and historic land use patterns. Implementing these mitigation measures would ensure that any cultural resources would be treated in an appropriate manner under CEQA and other applicable laws and regulations. These mitigation measures would reduce the potential for a significant impact

resulting from inadvertent damage or destruction of presently undocumented cultural resources because it requires pre-construction training for identification of cultural resources – and, if an inadvertent discovery of cultural materials is made during project-related construction activities, disturbances in the area of the find must be halted and appropriate treatment and protection measures must be implemented, all in consultation with a professional archaeologist.

IMPACT 3.5-2 Potential Disturbance of Previously Undiscovered Human Remains during Construction. *Project construction could disturb previously undiscovered human remains during project excavation. This impact would be **potentially significant**.*

Project construction would involve grading, trenching, excavation, soil stockpiling, and other earthmoving activities. There has been no indication that the area has been used for human burials in the recent or distant past. Human remains are unlikely to be encountered. However, in the unlikely event that human remains are discovered during subsurface activities, they could be inadvertently damaged. Therefore, this impact would be **potentially significant**. NUSD will implement the following mitigation measures in the event of discovery of human remains.

Mitigation Measure 3.5-2: Stop Work If Human Skeletal Remains Are Uncovered, and Follow the Procedures Set Forth in CEQA Guidelines Section 15064.5(e)(1).

In the event of the accidental discovery or recognition of any human remains, NUSD will take the following steps:

- (1) No further excavation or disturbance of the project site or any nearby area reasonably suspected to overlie adjacent human remains will occur until:
 - (A) the coroner of Sacramento County has been contacted to determine that no investigation of the cause of death is required, and
 - (B) if the coroner determines the remains to be Native American:
 - (1) the coroner shall contact the Native American Heritage Commission within 24 hours (Health and Safety Code Section 7050[c]);
 - (2) the NAHC shall identify the person or persons it believes to be the most likely descendant from the deceased Native American pursuant to the provisions of Public Resources Code Section 5097.98; and
 - (3) the most likely descendant may make recommendations to the NUSD/contractors, for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods, as provided in Public Resources Code Section 5097.98; or
- (2) Where the following conditions occur, NUSD/contractors shall rebury the Native American remains and associated grave goods with appropriate dignity on the property in a location not subject to further subsurface disturbance:
 - (A) the NAHC is unable to identify a most likely descendant or the most likely descendant fails to make a recommendation within 24 hours after being notified by the commission;

(B) the most likely descendant identified fails to make a recommendation; or

(C) NUSD rejects the recommendation of the most likely descendant, and mediation by the NAHC fails to provide measures acceptable to NUSD.

Significance after Mitigation

Implementation of Mitigation Measure 3.5-2 would reduce any impacts related to the disturbance or destruction of human remains to a **less-than-significant** level. Although not identified during the records search, field surveys, or other investigation of cultural resources, it is possible that human remains may be encountered. The likelihood of encountering human remains in the project site is low, since prior investigations did not identify human remains. If remains are encountered, the above described mitigation measure would require compliance with the procedures in the California Health and Safety Code and Public Resources Code. These procedures are specifically designed to reduce the adverse effect of project implementation related to human remains by requiring that the human remains are treated in an appropriate and respectful manner and in accordance with applicable laws and regulations.

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3.6 GEOLOGY, SOILS, MINERALS, AND PALEONTOLOGICAL RESOURCES

3.6.1 INTRODUCTION

This section describes existing geologic, seismic, and soil conditions; the potential presence of economically important mineral deposits; and the potential presence of important fossils. It then evaluates the potential for seismic effects, such as liquefaction, potential risks from construction on unstable soils, potential short-term construction-related erosion and loss of topsoil, potential loss of access to mineral deposits, and the potential for construction to damage fossils that could add to the fossil record. (The potential for long-term erosion and other water quality effects are addressed in Section 3.9, “Hydrology and Water Quality”).

3.6.2 ENVIRONMENTAL SETTING

GEOLOGY

Physiographic Setting

The project site is located in the Sacramento Valley, approximately 1-mile northeast of the Sacramento River, and lies centrally within the Great Valley geomorphic province of California. The Sacramento Valley forms the northern third of the Great Valley, which includes approximately 33,000 square miles and fills a northwest-trending structural depression bounded on the west by the Great Valley Fault Zone and the Coast Ranges, and on the east by the Sierra Nevada and the Foothills Fault Zone.

The Great Valley is composed of thousands of feet of sedimentary deposits that have undergone periods of subsidence and uplift over millions of years. During the Jurassic and Cretaceous Periods of the Mesozoic era (206–144 million years Before Present [B.P.]), the Great Valley existed in the form of an ancient ocean. By the end of the Mesozoic era (144 million years B.P.), the northern portion of the Great Valley began to fill with sediment as tectonic forces caused uplift of the basin. By the time of the Miocene epoch, approximately 24 million years B.P., sediments deposited in the Sacramento Valley were mostly of terrestrial origin.

Most of the surface of the Great Valley is covered with Holocene (11,700 years B.P. to present day) and Pleistocene (11,700–2.3 million years B.P.) alluvium. This alluvium is composed of sediments from the Sierra Nevada to the east and the Coast Ranges to the west that were carried by water and deposited on the valley floor. Siltstone, claystone, and sandstone are the primary types of sedimentary deposits. Older Tertiary deposits underlie the Quaternary alluvium.

The depositional history of the Sacramento Valley during the late Quaternary included alternating periods of deposition followed by periods of subsidence and erosion. Thus, during the Pleistocene, the Sacramento Valley experienced stages of wetlands and floodplain creation as tidewaters rose in the valley from the west, areas of erosion when tidewaters receded, and alluvial fan deposition from streams emanating from the adjacent mountain ranges. Regional geologic mapping shows that most of the site is located in Holocene-age Basin Deposits, while the northeastern corner is mapped as the middle unit of the Pleistocene-age Riverbank Formation (Gutierrez 2011). However, based on the results of site-specific soil borings obtained by Geocon Consultants, Inc. (Geocon) (Geocon 2018:3 and Appendix A), the project site is located entirely within the Holocene Basin Deposits. The

project site is within Sacramento County on the USGS Taylor Monument 7.5-Minute Quadrangle topographical map (1:24,000 scale), which shows that the topography of the site is generally flat.

REGIONAL SEISMICITY AND FAULT ZONES

Potential seismic hazards resulting from a nearby moderate to major earthquake can generally be classified into primary and secondary effects. The primary effect is surface rupture, also called surface faulting or fault ground rupture. Common secondary seismic hazards are ground shaking, liquefaction, and subsidence. Each of these potential primary and secondary hazards is discussed below.

Surface Rupture

Surface rupture is an actual cracking or breaking of the ground along a fault during an earthquake. Structures built over an active fault can be torn apart if the ground ruptures. Surface ground rupture along faults is generally limited to a linear zone a few yards wide. The Alquist-Priolo Act (see Section 3.6.2, “Regulatory Context,” below) was created to prohibit the location of structures designed for human occupancy across the traces of active faults, thereby reducing the loss of life and property from an earthquake. No known faults are located within or adjacent to the project site (Jennings and Bryant 2010) and the site is not located in an Alquist-Priolo Earthquake Fault Zone (CGS 2017).

Ground Shaking

Ground shaking, or motion that occurs as a result of energy released during faulting, could potentially result in the damage or collapse of buildings and other structures, depending on the magnitude of the earthquake, the location of the epicenter, and the character and duration of the ground motion. Other important factors to be considered are the characteristics of the underlying soil and rock, the building materials used, and the workmanship of the structure.

With the exception of the Cleveland Hills fault located near Lake Oroville, the Sacramento Valley has not been seismically active in the last 11,700 years (Holocene time) (Jennings and Bryant 2010). Faults with known or estimated activity during the Holocene are generally located in the Coast Ranges or the San Francisco Bay Area to the west. Table 3.6-1 lists the known active faults (i.e., evidence of movement during the last 11,700 years), approximate distance from the project site, projected maximum moment magnitude, and slip rate.

Ground motion from seismic activity can be estimated for specific hazard levels using probabilistic methods. The intensity of ground shaking depends on the distance from the earthquake epicenter to the site, the magnitude of the earthquake, and site soil conditions. Geocon (2018:9) calculated the peak horizontal ground acceleration (which correlates to the level of ground shaking) with a 10 percent probability of being exceeded in 50 years for project site alluvium (as a percentage of gravity [g]). These calculations showed a 1-in-10 probability that an earthquake within 50 years would result in a peak horizontal ground acceleration exceeding 0.239 g . Therefore, a moderate level of seismic ground shaking could occur at the project site.

**Table 3.6-1.
Regional Faults with Evidence of Activity during Holocene Time**

Fault Name	Approximate Distance from Project Site (miles)	Regional Location	Maximum Moment Magnitude	Slip Rate (mm/yr)
Dunnigan Hills	17	Western Sacramento Valley	6.5	N/A
East Branch Bear Mountains Fault Zone	25	Sierra Nevada Mountains	6.5	N/A
Great Valley Fault Zone Segment 4	25	Margin between Sacramento Valley and Coast Range	6.6	1.5
Great Valley Fault Zone Segment 5	35	Margin between Sacramento Valley and Coast Range	6.5	1.5
Green Valley	40	Coast Range	6.2	5.0
Hunting Creek-Berryessa	45	Coast Range	7.1	6.0
West Napa	47	Coast Range	6.7	1.0
Greenville Fault Zone (includes Clayton and Marsh Creek sections)	41	Coast Range	6.6	2.0
Concord	51	Coast Range	6.2	4.0
Cleveland Hills/Swain Ravine	53	Sierra Nevada Foothills	6.5	0.05

Notes: N/A = not available or not known; mm/yr = millimeters per year
Sources: Jennings and Bryant 2010, 2007; Working Group on California Earthquake Probabilities 2008

Ground Failure/Liquefaction

Soil liquefaction occurs when ground shaking from an earthquake causes a sediment layer saturated with groundwater to lose strength and take on the characteristics of a fluid, becoming similar to quicksand. Factors determining liquefaction potential are soil type, level and duration of ground motions, and depth to groundwater. Liquefaction is most likely to occur in low-lying areas where the substrate consists of poorly consolidated to unconsolidated water-saturated sediments, recent Holocene-age sediments, or deposits of artificial fill.

Liquefaction poses a hazard to engineered structures. The loss of soil strength can result in loss of bearing capacity or weakened ability to support the weight of buildings and withstand horizontal pressure on retaining or basement walls. Based on a review data from the U.S. Natural Resources Conservation Service (NRCS) (2017), near-surface soils at the project site consist primarily of clay that is saturated with water during the winter months. The average depth to groundwater varies from approximately 8 to 15 feet below ground surface (bgs) (Geocon 2018:3). Geocon performed a site-specific liquefaction analysis, and determined that there is a potential for liquefaction in the sandy soils that are present approximately 18–22 feet bgs.

SLOPE STABILITY

A landslide is the downhill movement of masses of earth under the force of gravity. The factors contributing to landslide potential are steep slopes, unstable terrain, and proximity to earthquake faults. Movement may be very rapid, or so slow that a change of position can be noted only over a period of weeks or years. The size of a landslide can range from several square feet to several square miles.

The project site has a generally flat topography that would not represent a slope stability hazard for any building or structure. Further, the site is not adjacent to any steep slopes where an off-site landslide could pose a hazard to on-site structures.

PALEONTOLOGICAL RESOURCES

As discussed above, regional geologic mapping (Gutierrez 2011) shows that most of the site is located in Holocene-age Basin Deposits; however, the northeast corner is mapped as the middle unit of the Pleistocene-age Riverbank Formation. Furthermore, the presence of the Riverbank Formation at the surface of a portion of the project site indicates that this formation could be present at shallow depths throughout the remainder of the project site, and therefore could be encountered during project-related excavation activities. Due to the large number of unique paleontological resources recovered from the Riverbank Formation throughout the Sacramento and San Joaquin Valleys, it is well known as a paleontologically sensitive rock formation.

Geocon obtained soil cores from 11 locations on the project site at depths ranging from 11 to 51.5 feet (Geocon 2018:Figure 2). Two soil cores were obtained from the northeast corner of the project site, where Gutierrez (2011) indicates that the Riverbank Formation is present. The results of a laboratory analysis indicated that soils in the northeastern corner of the project site are composed solely of sandy clay to a depth of 11 feet bgs, when the borings were terminated due to the presence of groundwater. Excavation for project-related facilities throughout the project site would not exceed this depth. Soils in the remaining 9 nine locations throughout the project site consist of stiff to hard clay and silt, interlayered with medium-dense sand to a depth of 51.5 feet bgs (Geocon 2018:Appendix A). Geocon also determined that an apparently continuous clay layer approximately 15 feet thick is present across the project site (Geocon 2018:6). Based on the laboratory test results, Geocon determined that the entirety of the project site is composed of Holocene-age Basin Deposits (Geocon 2018:3).

To be considered a unique paleontological resource, a fossil must be more than 11,700 years old. Holocene deposits contain only the remains of extant, modern taxa (if any resources are present), which are not considered “unique” paleontological resources. Therefore, the Basin Deposits at the project site are considered to be of low paleontological sensitivity.

SOILS

A review of the NRCS (2017) soil data indicates that near-surface soils on the property are as follows:

- ▶ Clear Lake Clay, hardpan substratum, drained, 0–1% slopes;
- ▶ Jacktone Clay, drained, 0–2% slopes; and
- ▶ San Joaquin–Galt Complex, leveled, 0–1% slopes.

Exhibit 3.6-1 shows the distribution of soil types at the project site, and the characteristics of these soils are summarized in Table 3.6-2. Based on the results of the soil borings obtained by Geocon (2018:3, 6, and Appendix A), project site soils are composed of stiff to hard clay and silt, interlayered with medium-dense sand to a depth of 51.5 feet bgs. The near-surface soils (to a depth of approximately 1.5 feet bgs), consist of clay and sandy clay. Furthermore, an apparently continuous clay layer approximately 15 feet thick is present across the project site.

Expansive Soils

Expansive soils are composed largely of clays, which greatly increase in volume when saturated with water and shrink when dried (referred to as “shrink-swell” potential). Because of this effect, building foundations may rise during the rainy season and fall during the dry season. If this expansive movement varies underneath different parts of a single building, foundations may crack, structural portions of the building may be distorted, and doors



Source: NRCS 2017

Exhibit 3.6-1 Soil Types on the Project Site

**Table 3.6-2.
Site Soil Characteristics**

Soil Map Unit Name	Shrink-Swell Potential ¹	Permeability ²	Drainage	Water Erosion Hazard ³	Wind Erodibility Group ⁴	NRCS Soil Limitations
Clear Lake Clay, hardpan substratum, drained, 0 to 1 percent slopes	High	Moderately Low	Somewhat poorly drained	Low	4	<i>Small Commercial buildings:</i> Very limited, shallow depth to water table (saturated soil), flooding, and high shrink-swell potential <i>Local Roads and Streets:</i> Very limited, low bearing strength, low depth to water table (saturated soil), flooding, and high shrink-swell potential
Jacktone Clay, drained, 0 to 2 percent slopes	High	Moderately Low	Somewhat poorly drained	Low	4	<i>Small Commercial buildings:</i> Very limited, shallow depth to water table (saturated soil), flooding, and high shrink-swell potential <i>Local Roads and Streets:</i> Very limited, low bearing strength, shallow depth to water table (saturated soil), flooding, and high shrink-swell potential
San Joaquin–Galt Complex, leveled, 0 to 1 percent slopes	Moderate	Moderately High	Moderately well drained	High	6	<i>Small Commercial buildings:</i> Somewhat limited, moderate shrink-swell potential <i>Local Roads and Streets:</i> Somewhat limited, low bearing strength, low depth to water table (saturated soil), and moderate shrink-swell potential
<p>Notes: NRCS = U.S. Natural Resources Conservation Service</p> <p>¹ Based on percentage of linear extensibility, shrink-swell potential ratings of “moderate” to “very high” can result in damage to buildings, roads, and other structures.</p> <p>² Based on standard NRCS saturated hydraulic conductivity (Ksat) class limits. Ksat refers to the ease with which pores in a saturated soil transmit water.</p> <p>³ Based on the erosion factor “Kw whole soil,” which is a measurement of relative soil susceptibility to sheet and rill erosion by water.</p> <p>⁴ Soils assigned to wind erodibility group 1 are the most susceptible to wind erosion, and those assigned to group 8 are the least susceptible.</p> <p>Source: Natural Resources Conservation Service 2017</p>						

and windows may become warped so that they no longer function properly. The potential for soil to undergo shrink and swell is greatly enhanced by the presence of a variable, shallow groundwater table. As stated above, the average depth to groundwater varies from approximately 8 to 15 feet bgs (Geocon 2018:3).

Based on a review of NRCS (2017) soil survey data and the results of site-specific soil borings obtained by Geocon (2018:10), soils on the project site have a high shrink-swell potential, meaning that they have a high clay content and therefore would be expected to undergo volume changes with increasing or decreasing soil moisture content.

Lateral Spreading, Subsidence, and Soil Bearing Capacity

Lateral spreading is the horizontal movement or spreading of soil toward an open face, such as a streambank, the open side of fill embankments, or the sides of levees. Subsidence, or the gradual caving in or sinking of an area of land, can be induced by both natural conditions and human actions. Natural conditions that can cause subsidence include: seismic activity, settling, the movement of water (especially into dry areas), or cavities below the surface. Subsidence can also result from groundwater pumping for agriculture and land development.

The potential for structural failure from subsidence and lateral spreading is highest in areas where the groundwater table is high, where relatively soft and recent alluvial deposits exist, and where creek banks are relatively high. Soil bearing capacity is the ability of soil to support structures: areas where soil bearing capacity is too low to support structures may experience subsidence and settlement.

Because the project site is flat and is not located adjacent to any steep slopes, the potential for lateral spreading is considered low (Geocon 2018:6). Furthermore, based on the results of site-specific soil borings, the site is underlain predominantly by hard clay and silty sand of a relatively dense consistency; therefore, the project site would not be subject to hazards from settlement or subsidence (Geocon 2018:7).

MINERALS

Sand and gravel mined in Sacramento County is used for construction. Construction aggregates are an important building material used in Portland cement concrete, asphalt concrete, plaster, and stucco, and as a road base material. In terms of volume and price, no economically feasible substitute for aggregate products is available in the construction industry. However, the County General Plan recognizes that aggregate mining is an interim land use rather than a final use, and recognizes the importance of balancing aggregate-mining needs with those of urban development.

In compliance with the Surface Mining and Reclamation Act (SMARA), California Geological Survey (CGS) established a classification system (Table 3.6-3) to indicate the location and significance of key extractive resources.

Under SMARA, the State Mining and Geology Board may designate certain mineral deposits as being regionally significant to satisfy future needs. The board's decision to designate an area is based on a classification report prepared by CGS and on input from agencies and the public. The project site lies within the designated Sacramento-Fairfield Production-Consumption Region for Portland cement concrete aggregate, which includes all designated lands within the marketing area of the active aggregate operations supplying the Sacramento-Fairfield

**Table 3.6-3.
California Geological Survey Mineral Land Classification System**

Classification	Description
MRZ-1	Areas where adequate information indicates that no significant mineral deposits are present or where it is judged that little likelihood exists for their presence
MRZ-2	Areas where adequate information indicates that significant mineral deposits are present or where it is judged that a high likelihood for their presence exists
MRZ-3	Areas containing mineral deposits, the significance of which cannot be evaluated from existing data
MRZ-4	Areas where available data are inadequate for placement in any other mineral resource zone

Note: MRZ = Mineral Resource Zone
Source: Dupras 1999

urban center. CGS has classified nearly the entire project site as MRZ-1; a small area of the northeastern corner of the project site has been classified as MRZ-3 (Dupras 1999). The project site is not located in a designated regionally important area of known mineral resources (i.e., MRZ-2), and is not located within a designated locally important area of known mineral resources under the Sacramento County General Plan (Sacramento County 2011: Conservation Element).

3.6.3 REGULATORY CONTEXT

FEDERAL PLANS, POLICIES, REGULATIONS, AND LAWS

Earthquake Hazards Reduction Act

In October 1977, the U.S. Congress passed the Earthquake Hazards Reduction Act to reduce the risks to life and property from future earthquakes in the U.S. through the establishment and maintenance of an effective earthquake hazards reduction program. To accomplish this goal, the act established the National Earthquake Hazards Reduction Program (NEHRP). This program was substantially amended in November 1990 by the National Earthquake Hazards Reduction Program Act (NEHRPA), which refined the description of agency responsibilities, program goals, and objectives.

The mission of NEHRP includes improved understanding, characterization, and prediction of hazards and vulnerabilities; improved building codes and land use practices; risk reduction through post-earthquake investigations and education; development and improvement of design and construction techniques; improved mitigation capacity; and accelerated application of research results. The NEHRPA designates the Federal Emergency Management Agency (FEMA) as the lead agency of the program and assigns several planning, coordinating, and reporting responsibilities. Other NEHRPA agencies include the National Institute of Standards and Technology, National Science Foundation, and U.S. Geological Survey (USGS).

STATE PLANS, POLICIES, REGULATIONS, AND LAWS

Alquist-Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Earthquake Fault Zoning Act (Alquist-Priolo Act) (California Public Resources Code Sections 2621–2630) was passed in 1972 to reduce the hazard of surface faulting to structures designed for human occupancy. The main purpose of the law is to prevent the construction of buildings used for human occupancy on the surface trace of active faults. The law addresses only the hazard of surface fault rupture and is not directed toward other earthquake hazards. The Alquist-Priolo Act requires the State Geologist to establish regulatory zones known as Earthquake Fault Zones around the surface traces of active faults and to issue appropriate maps. The maps are distributed to all affected cities, counties, and state agencies for their use in planning efforts. Before a project can be permitted in a designated Alquist-Priolo Earthquake Fault Zone, cities and counties must require a geologic investigation to demonstrate that proposed buildings would not be constructed across active faults.

Seismic Hazards Mapping Act

The Seismic Hazards Mapping Act of 1990 (Public Resources Code Sections 2690–2699.6) addresses earthquake hazards from non-surface fault rupture, including liquefaction and seismically induced landslides. The act established a mapping program for areas that have the potential for liquefaction, landslide, strong ground shaking, or other earthquake and geologic hazards. The act also specifies that the lead agency may withhold development permits until geologic or soils investigations are conducted for specific sites and mitigation measures are incorporated into plans to reduce hazards associated with seismicity and unstable soils.

California Building Standards Code

The California Building Standards Commission coordinates, manages, adopts, and approves building codes in California. The California Building Standards Code (CBC) (Title 24 of the California Code of Regulations) provides minimum standards for building design in California. The CBC applies to building design and construction in the state and is based on the federal Uniform Building Code (UBC) used widely throughout the country (generally adopted on a state-by-state or district-by-district basis). The CBC has been modified for California conditions with numerous more detailed or more stringent regulations. Where no other building codes apply, Chapter 29 of the CBC regulates excavation, foundations, and retaining walls.

The state earthquake protection law (California Health and Safety Code, Section 19100 et seq.) requires that structures be designed to resist stresses produced by lateral forces caused by wind and earthquakes. The CBC requires that any structure designed for a project site undergo a seismic-design evaluation that assigns the structure to one of six categories, A–F; Category F structures require the most earthquake-resistant design. The CBC philosophy focuses on “collapse prevention,” meaning that structures are to be designed to prevent collapse during the maximum level of ground shaking that could reasonably be expected to occur at a site. CBC Chapter 16 specifies exactly how each seismic-design category is to be determined on a site-specific basis, based on site-specific soil characteristics and proximity to potential seismic hazards.

Chapter 18 of the CBC regulates the excavation of foundations and retaining walls, as well as the preparation of a preliminary soil report, engineering geologic report, geotechnical report, and supplemental ground-response report. Chapter 18 also regulates the analysis of expansive soils and the determination of depth to the groundwater table. For structures in Seismic Design Category C, Chapter 18 requires analysis of slope instability, liquefaction,

and surface rupture attributable to faulting or lateral spreading. For structures in Seismic Design Categories D, E, and F, Chapter 18 requires these same analyses plus an evaluation of lateral pressures on basement and retaining walls, liquefaction and loss of soil strength, and lateral movement or reduction of the foundation's soil-bearing capacity.

Chapter 18 also requires that mitigation measures be considered in structural design. Mitigation measures may include stabilizing the ground, selecting appropriate foundation types and depths, selecting appropriate structural systems to accommodate anticipated displacements, or using any combination of these measures. The potential for liquefaction and soil strength loss must be evaluated for site-specific peak-ground-acceleration magnitudes and source characteristics consistent with the design earthquake ground motions. The peak ground acceleration must be determined in a site-specific study, the contents of which are specified in CBC Chapter 18.

Finally, Appendix J of the CBC regulates grading activities, including drainage and erosion control and construction on expansive soils, areas subject to liquefaction, and other unstable soils.

National Pollutant Discharge Elimination System and Storm Water Pollution Prevention Plans

As discussed in detail in Section 3.9, "Hydrology and Water Quality," the State Water Resources Control Board (SWRCB) and Central Valley Regional Water Quality Control Board (Central Valley RWQCB) have adopted specific National Pollutant Discharge Elimination System (NPDES) permits for a variety of activities that have the potential to discharge wastes (including sediment) to waters of the state. The SWRCB's statewide storm water general permit for construction activity (Order 2009-009-DWQ as amended by Order No. 2012-0006-DWQ) is applicable to all land-disturbing construction activities that would disturb 1 acre or more. Compliance with the NPDES permit requires submittal to the Central Valley RWQCB of notices of intent (NOI) to discharge, and implementation of stormwater pollution prevention plans (SWPPPs) that include best management practices (BMPs) to minimize water quality degradation during construction activities.

REGIONAL AND LOCAL PLANS, POLICIES, REGULATIONS, AND ORDINANCES

Sacramento County General Plan

While they do not apply directly to the project, the following policies from the *Sacramento County General Plan of 2005–2030* (County General Plan) (Sacramento County 2011), related to geology, soils, minerals, or paleontological resources provide some useful context for the project.

Safety Element

- ▶ **Policy SA-1:** The County shall require geotechnical reports and impose the appropriate mitigation measures for new development located in seismic and geologically sensitive areas.

Conservation Element

- ▶ **Policy CO-26:** Protect areas susceptible to erosion, natural water bodies, and natural drainage systems.
- ▶ **Policy CO-161:** As a condition of approval for discretionary projects, require appropriate mitigation to reduce potential impacts where development could adversely affect paleontological resources.

- ▶ **Policy CO-162:** Projects located within areas known to be sensitive for paleontological resources, should be monitored to ensure proper treatment of resources and to ensure crews follow proper reporting, safeguards and procedures.
- ▶ **Policy CO-163:** Require that a certified geologist or paleoresources consultant determine appropriate protection measures when resources are discovered during the course of development and land altering activities.

Sacramento County Grading and Erosion Control Ordinance

The County’s Grading and Erosion Control Ordinance (Chapter 16.44 of the existing County Code) was adopted to minimize damage to surrounding properties and public rights-of-way; limit degradation of the water quality of watercourses; and curb the disruption of drainage system flow caused by the activities of clearing, grubbing, grading, filling, and excavating land. The ordinance includes administrative procedures, minimum standards of review, and implementation and enforcement procedures for erosion and sedimentation control that are directly related to land-grading activities. The ordinance also requires submittal of Erosion and Sediment Control Plans that contain a list of measures that will be implemented to minimize erosion and the transport of sediments.

Paleontological Guidelines

In its standard guidelines for assessment and mitigation of adverse impacts on paleontological resources, the Society of Vertebrate Paleontology (1995) established three categories of sensitivity for paleontological resources: high, low, and undetermined. Areas where fossils have been previously found are considered to have a high sensitivity and a high potential to produce fossils. Areas that are not sedimentary in origin and that have not been known to produce fossils in the past typically are considered to have low sensitivity. Areas that have not had any previous paleontological resource surveys or fossil finds are considered to be of undetermined sensitivity until surveys and mapping are performed to determine their sensitivity. After reconnaissance surveys, observation of exposed cuts, and possibly subsurface testing, a qualified paleontologist can determine whether the area should be categorized as having high or low sensitivity. In keeping with the significance criteria of the Society of Vertebrate Paleontology (1995), all vertebrate fossils are generally categorized as being of potentially significant scientific value.

3.6.4 ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

ANALYSIS METHODOLOGY

Evaluation of potential impacts on geology and soils was based on a review of documents pertaining to the project site, including soils survey data (NRCS 2017), published geologic literature (including maps), and aerial photographs. Information relating to the project site was also obtained from the *Geologic Hazards Evaluation and Geotechnical Investigation, Paso Verde K-8, Sacramento, California* prepared by Geocon in 2018.

The information obtained from these sources was reviewed and summarized to document existing conditions and to identify the potential environmental effects of the proposed project.

THRESHOLDS OF SIGNIFICANCE

GEOLOGY, SOILS, AND MINERAL RESOURCES

Based on Appendix G of the CEQA Guidelines, implementation of the proposed project would result in a potentially significant impact on geology, soils, or minerals if it would:

- ▶ expose people, property, or structures to potential substantial adverse impacts, including the risk of loss, injury, or death involving:
 - 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;
 - strong seismic ground shaking;
 - seismic-related ground failure, including liquefaction; or
 - landslides;
- ▶ result in substantial soil erosion or the loss of topsoil;
- ▶ 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;
- ▶ be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property;
- ▶ have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water; or
- ▶ 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 or a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan.

The cultural resources section of Appendix G also requires evaluation of whether the project would:

- ▶ directly or indirectly destroy a unique geologic feature.

PALEONTOLOGICAL RESOURCES

Based on Appendix G of the CEQA Guidelines, implementation of the proposed project would result in a potentially significant impact on paleontological resources if it would directly or indirectly destroy a unique paleontological resource or site. A “unique paleontological resource or site” is one that is considered significant under the following professional paleontological standards:

An individual vertebrate fossil specimen may be considered unique or significant if it is identifiable and well preserved, and it meets one of the following criteria:

- ▶ a type specimen (i.e., the individual from which a species or subspecies has been described);
- ▶ a member of a rare species;
- ▶ a species that is part of a diverse assemblage (i.e., a site where more than one fossil has been discovered) wherein other species are also identifiable, and important information regarding life history of individuals can be drawn;
- ▶ a skeletal element different from, or a specimen more complete than, those now available for its species; or
- ▶ a complete specimen (i.e., all or substantially all of the entire skeleton is present).

The value or importance of different fossil groups varies, depending on the age and depositional environment of the rock unit that contains the fossils, their rarity, the extent to which they have already been identified and documented, and the ability to recover similar materials under more controlled conditions (such as for a research project). Marine invertebrates generally are common, the fossil record is well developed and well documented, and they would generally not be considered a unique paleontological resource. Identifiable vertebrate marine and terrestrial fossils generally are considered scientifically important because they are relatively rare.

ISSUES NOT EVALUATED FURTHER IN THIS EIR

Risks to People or Structures Caused by Surface Fault Rupture: The project site is located approximately 30 miles from the nearest Alquist-Priolo Earthquake Fault Study Zone and is not underlain by any known faults. Thus, the potential for surface fault rupture at the project site is remote and is not evaluated further.

Risks to People or Structures Caused by Landslides: Because the project site is located in a flat area, and is not adjacent to any steep slopes subject to potential landslides, no potential hazard from landslides exists and this risk is not evaluated further.

Risks to People or Structures Caused by Construction in Unstable Soils: Because the project site is flat and is not located adjacent to any steep slopes, the potential for lateral spreading is considered low. Furthermore, based on the results of site-specific soil borings, the site is composed predominantly by hard clay and silty sand of a relatively dense consistency; therefore, the project site would not be subject to hazards from settlement or subsidence. Thus, there would be no impact and this risk is not evaluated further.

Loss of Locally or Regionally Designated Important Mineral Resources: CGS has classified nearly the entire project site as MRZ-1, an area where no known mineral resources are present. A very small area of the northeastern corner of the project site has been classified as MRZ-3, an area where the importance of mineral resources cannot be evaluated from available data. However, the site is not located in a designated regionally important area with known mineral resources (i.e., MRZ-2), and is not designated as an area of known mineral resources in the County General Plan. Thus, there would be no impact on mineral resources and this issue is not evaluated further.

Destroy a Unique Geologic Feature: A unique geologic feature consists of a major natural element that stands out in the landscape, such as a large and scenic river, gorge, waterfall, volcanic cinder cone, lava field, or glacier.

There are no unique geologic features at the project site or within the project site viewshed. Thus, there would be no impact and this issue is not evaluated further.

Destruction of a Unique Paleontological Resource or Site: The proposed project is located within Holocene (11,700 years B.P. and younger) deposits, which contain only remains of modern taxa and would not be considered unique paleontological resources. Therefore, project construction would have no impact on unique paleontological resources and this issue is not evaluated further.

Suitability of Soils for Use with Septic Systems. Although NUSD could serve the project site with a septic system, the project site is within the existing service boundaries of the Sacramento Area Sewer District (SASD) and Sacramento Regional County Sanitation District (SRCSD), which have both indicated they will serve the property from an existing sewer line in Del Paso Road. Since sewer service is already available, and since there are environmental and financial advantages in municipal sewer service, the NUSD has elected at this time not to provide septic systems on-site. If on-site wastewater treatment were proposed, NUSD would need to design, install, and operate an on-site wastewater disposal system designed by a licensed civil or geotechnical engineer. The engineer need to conduct a percolation test to determine site constraints and the system will treat wastewater to meet the standards contained in Sacramento County Code Title 6, Chapter 6.32. Code Section 6.32.340 “Design Criteria.” However, since NUSD does not currently propose septic systems, this issue is not evaluated further.

IMPACT ANALYSIS

IMPACT 3.6-1 **Potential Risks to People and Structures Caused by Strong Seismic Ground Shaking and Liquefaction.**
The project site could be subject to seismic ground shaking and liquefaction in the event of an earthquake. However, NUSD would implement design recommendations contained in the site-specific geotechnical report to reduce those hazards. This impact would be less than significant.

The Dunnigan Hills Fault, approximately 25 miles northwest of the project site, shows evidence of displacement within the last 11,700 years (Jennings and Bryant 2010). The nearest fault zoned as “active” by CGS, Segment 4 of the Great Valley Fault Zone, is located approximately 30 miles west of the project site. Several other active faults that could produce a large-magnitude earthquake are listed in Table 3.6-1. The project site is composed of Holocene-age deposits and is underlain by a shallow groundwater table, at a depth of 8–15 feet bgs (Geocon 2018:3). Strong seismic ground shaking and liquefaction could damage buildings, roadways, utilities, and other structures.

NUSD retained the services of Geocon (2018) to prepare a site-specific geotechnical report, which included soil borings. The geotechnical report contains a seismic hazards analysis according to current CBC requirements, including calculations related to the site-specific seismic design response spectrum from strong seismic ground shaking, as well as a site-specific liquefaction hazard analysis. Considering the project site soil factors and the distances from known active faults, Geocon placed the site in CBC Design Class D, and determined that the maximum peak horizontal ground acceleration would be 0.239g. These calculations indicate that a moderate level of ground shaking could occur at the project site.

Geocon determined that liquefaction-induced settlement of approximately 0.7–0.9 inches could occur in the sandy soils that are present approximately 18–22 feet bgs. However, Geocon also found that the risk of lateral spreading

at the site was very low, and the risk of unsaturated seismic settlement was low. Therefore, Geocon determined that shallow building footings (at least 24 inches below the grade of the building pad) may be used at the project site, but Geocon recommends that the foundations consist of continuous perimeter strip footings with isolated interior spread footings, and slab tie reinforcing bars should be installed between the perimeter and interior footings to help reduce the liquefaction potential and the soil expansion potential. Furthermore, the top 18 inches of soil where foundations would be located must either be removed and replaced with appropriate fill material, or treated with lime.

The geotechnical report contains detailed recommendations for design and construction of proposed facilities at the project site, and would be used by the project engineer to design the school's buildings and foundations and other structural elements (e.g., roadways, utilities) in compliance with the CBC. The geotechnical report also provides supporting information for grading and other permit applications, including CDE's final site approval. Geotechnical requirements for grading and shoring of trenches and slopes would subsequently be noted on the grading plans. The on-site site engineer would oversee grading and excavation to ensure that the required earthwork is performed consistent with the project specifications.

By complying with CBC requirements, incorporating the geotechnical engineer's design recommendations, as contained in the site-specific geotechnical report (Geocon 2018), and coordinating with Sacramento County for grading plan review and CDE review of geotechnical hazards, impacts from strong seismic ground shaking and liquefaction are considered **less than significant**.

Mitigation Measures

No mitigation measure is required.

IMPACT **Potential Temporary and Short-term Localized Soil Erosion During Construction.** *Construction would*
3.6-2 *require grading and excavation that could result in short-term soil erosion during construction activities. This*
 *impact is considered **potentially significant**.*

Project implementation would include earthmoving activities over approximately 18 acres at the proposed school site, along with approximately 6.5 acres associated with the new access road, pedestrian/bicycle access, Del Paso Boulevard frontage improvements, and improvements to connect to an existing RD 1000 stormwater outfall in the West Drainage Canal. The earthwork would include soil removal, grading, trenching and pipe installation, fabrication of concrete channels, grading, and landscaping. Underground utilities infrastructure, including a drainage system, would be installed throughout the project site. Construction activities during the winter months would expose soils to rain events, which could mobilize loose soil and result soil erosion. Subsequent soil transport during storm events could result in sedimentation both within and downstream of the project site. Furthermore, earthmoving activities during the summer months could result in wind erosion. Because the proposed project could result in loss of topsoil, soil erosion, and downstream sedimentation during temporary, short-term construction activities, this impact is considered potentially **significant**.

Mitigation Measure 3.6-2: Implement Mitigation Measure 3.9-1a (Acquire Appropriate Regulatory Permits and Prepare and Implement a SWPPP and BMPs).

Significance after Mitigation

Implementation of Mitigation Measure 3.6-2 would reduce the significant temporary, short-term construction-related impact related to soil erosion to a **less-than-significant** level by requiring preparation and implementation of a SWPPP with appropriate erosion control BMPs to prevent soil erosion and maintain surface and groundwater quality conditions in adjacent receiving waters.

IMPACT 3.6-3 Potential Damage to Structures, Roads, Utilities, and Infrastructure from Construction on Expansive Soils. *The project site is underlain by soils that have a moderate to high potential for expansion, which could damage project structures. By complying with requirements in the site-specific geotechnical report, the project would be constructed to minimize potential impacts. This impact would be less than significant.*

Construction on soils that expand with changing moisture levels can result in damaged building foundations, utilities, and roads. Based on a review of the NRCS (2017) soil data and the results of soil borings obtained by Geocon (2018:Appendix A), site soils have a moderate to high shrink-swell potential. Geocon (2018:12, 15–18) indicated that the upper 18 inches of soil at the project site where building foundations would be located should either be excavated and replaced with low-moisture fill material, or treated with lime to reduce the expansion potential. Furthermore, to reduce the potential for moisture variations and associated expansion underneath proposed buildings, Geocon stated that foundations should consist of continuous perimeter strip footings with isolated interior spread footings at least 24 inches below the grade of the building pad. Reinforcement bars should be used to help resist soil expansion potential, and slab tie reinforcing bars should be installed between the perimeter and interior footings. Foundation slabs should be at least 5 inches thick to help resist the soil expansion potential. Finally, measures should be implemented to reduce the infiltration of irrigation water near buildings, flatwork, and pavement. With implementation of the design recommendations contained in the Geocon (2018) geotechnical report, potential impacts from expansive soils are considered **less than significant**.

Mitigation Measures

No mitigation measure is required.

3.7 GREENHOUSE GAS EMISSIONS

This section includes a summary of the existing science related to greenhouse gases (GHGs), an overview of State and local GHG emissions inventories; an overview of the existing GHG regulatory context; a summary of the methods used to estimate GHG emissions attributable to the project; and an analysis of potential GHG emissions impacts of the proposed project. The proposed project will not, by itself, contribute significantly to climate change; however, cumulative emissions from many projects and plans all contribute to global GHG concentrations and the climate system. This section considers the project's cumulative contribution to the significant cumulative impact of climate change.

3.7.1 ENVIRONMENTAL SETTING

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 through the atmosphere. However, infrared radiation is selectively absorbed by GHGs in the atmosphere. As a result, infrared radiation released from the earth 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. Anthropogenic (e.g., human caused) emissions of these GHGs lead to atmospheric levels in excess of natural ambient concentrations and have the potential to adversely affect the environment because such emissions contribute, on a cumulative basis, to global climate change.

The Intergovernmental Panel on Climate Change (IPCC) concluded that variations in natural phenomena, such as solar radiation and volcanoes, produced most of the warming of the earth from pre-industrial times to 1950. Some variations in natural phenomena also had a small cooling effect. From 1950 to the present, increasing GHG concentrations resulting from human activity, such as fossil fuel burning and deforestation, have been responsible for most of the observed temperature increase (IPCC 2013).

Global surface temperature has increased by approximately 1.53 degrees Fahrenheit (°F) over the last 140 years (IPCC 2013); however, the rate of increase in global average surface temperature has not been consistent. The last three decades have warmed at a much faster rate per decade (IPCC 2013).

During the same period when increased global warming has occurred, many other changes have occurred in other natural systems. Sea levels have risen; precipitation patterns throughout the world have shifted, with some areas becoming wetter and others drier; snowlines have increased elevation, resulting in changes to the snowpack, runoff, and water storage; and numerous other conditions have been observed. Although it is difficult to prove a definitive cause-and-effect relationship between global warming and other observed changes to natural systems, there is a high level of confidence in the scientific community that these changes are a direct result of increased global temperatures caused by the increased presence of GHGs in the atmosphere (IPCC 2013).

PRINCIPAL GHGS AND SOURCES

GHGs are present in the atmosphere naturally, are released by natural and anthropogenic (human-caused) sources, and are formed from secondary reactions taking place in the atmosphere. Natural sources of GHGs include the respiration of humans, animals, and plants; decomposition of organic matter; volcanic activity; and evaporation from the oceans. Anthropogenic sources include the combustion of fossil fuels by stationary and mobile sources,

waste treatment, and agricultural processes. The following are the principal GHG pollutants that contribute to climate change and their primary emission sources:

Carbon Dioxide: Natural sources of CO₂ include decomposition of dead organic matter; respiration of bacteria, plants, animals, and fungus; and evaporation from oceans. Anthropogenic (human) sources include burning of coal, oil, natural gas, and wood.

- ▶ Methane: CH₄ is emitted during the production and transport of coal, natural gas, and oil. Methane emissions also result from livestock and other agricultural practices and by the decay of organic waste in municipal solid waste landfills.
- ▶ Nitrous Oxide: N₂O is produced by both natural and human-related sources. Primary human-related sources of N₂O are agricultural soil management, sewage treatment, mobile and stationary combustion of fossil fuel, adipic acid production, and nitric acid production. N₂O is also produced naturally from a wide variety of biological sources in soil and water, particularly microbial action in wet tropical forests.
- ▶ Fluorinated gases: These gases are typically emitted in smaller quantities, but because they are potent greenhouse gases, they are sometimes called High Global Warming Potential (High GWP) gases. These High GWP gases include:
 - Chlorofluorocarbons (CFC)s: These GHGs are used for refrigeration, air conditioning, packaging, insulation, solvents, or aerosol propellants.
 - Perfluorinated Chemicals (PFCs): PFCs are emitted as by-products of industrial processes and are also used in manufacturing.
 - Sulfur hexafluoride (SF₆): This is a strong GHG used primarily as an insulator in electrical transmission and distribution systems.
 - Hydrochlorofluorocarbons (HCFCs): These have been introduced as temporary replacements for CFCs and are also GHGs.
 - Hydrofluorocarbons (HFCs): These were introduced as alternatives to ozone-depleting substances in serving many industrial, commercial, and personal needs. HFCs are GHGs emitted as by-products of industrial processes and are also used in manufacturing.

GHGs are not monitored at local air pollution monitoring stations and do not represent a direct impact to human health. Rather, GHGs generated locally contribute to global concentrations of GHGs, which result in changes to the climate and environment.

GLOBAL WARMING POTENTIAL

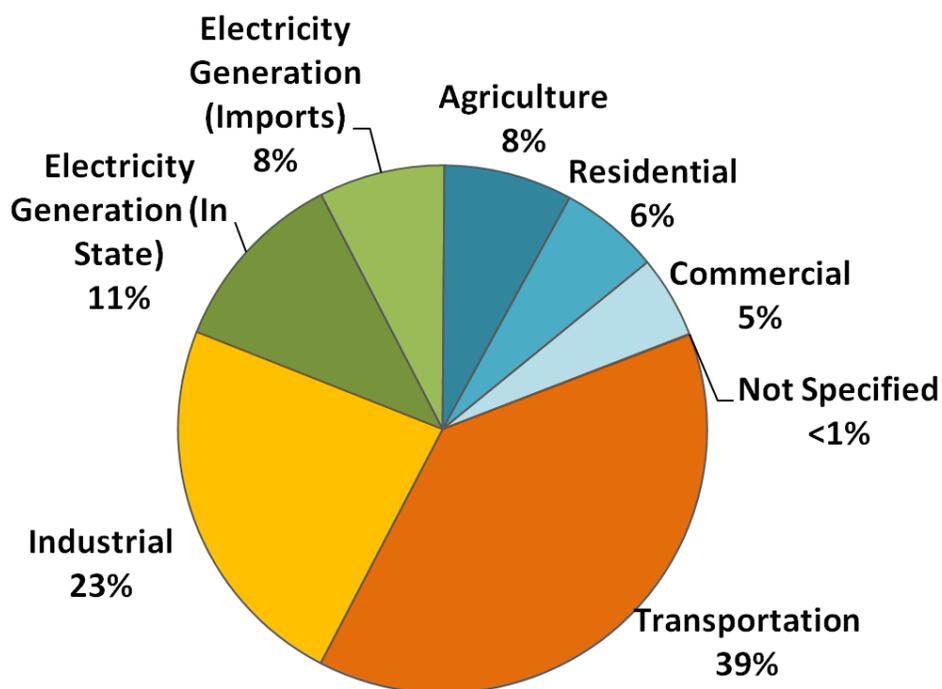
GWP is a concept developed to compare the ability of each GHG to trap heat in the atmosphere relative to another gas. GWP is based on several factors, including the relative effectiveness of a gas to absorb infrared radiation and the length of time the gas remains in the atmosphere (“atmospheric lifetime”). The GWP of each gas is measured relative to CO₂, therefore, CO₂ has a GWP of 1. The other main GHGs that have been attributed to human activity include CH₄, which has a GWP of 28, and N₂O, which has a GWP of 265 (IPCC 2013). For example, 1 ton of

CH₄ has the same contribution to the greenhouse effect as approximately 28 tons of CO₂. GHGs with lower emissions rates than CO₂ may still contribute to climate change, because they are more effective at absorbing outgoing infrared radiation than CO₂ (i.e., high GWP). The concept of CO₂ equivalence (CO₂e) is used to account for the different GWP potentials of GHGs to absorb infrared radiation. GHG emissions are typically measured in terms of pounds or tons of CO₂e, and are often expressed in metric tons of CO₂ equivalent emissions (MTCO₂e).

Climate change is a global issue because GHGs can have global effects, unlike criteria air pollutants and TACs, which are pollutants of regional and local concern (see Section 3.3, Air Quality). Whereas pollutants with localized air quality effects have relatively short atmospheric lifetimes (about one day), GHGs have long atmospheric lifetimes (one year to several thousand years), or long enough to be dispersed around the globe. Although the exact lifetime of any particular GHG molecule depends on multiple variables, more CO₂ is currently emitted into the atmosphere than is stored, or “sequestered.”

California GHG Emissions Inventory

The California Air Resources Board (ARB) prepares an annual, statewide GHG emissions inventory. GHGs are typically analyzed by “sector” or type of activity. As shown in Exhibit 3.7-1, California produced 440.4 million MTCO₂e in 2015. Combustion of fossil fuel in the transportation sector was the single largest source of California’s GHG emissions in 2015, accounting for 39 percent of total GHG emissions. Transportation was followed by industry, which accounted for 23 percent, and then the electric power category (including in-state and out-of-state sources) accounted for 11 percent of total GHG emissions (ARB 2017a).

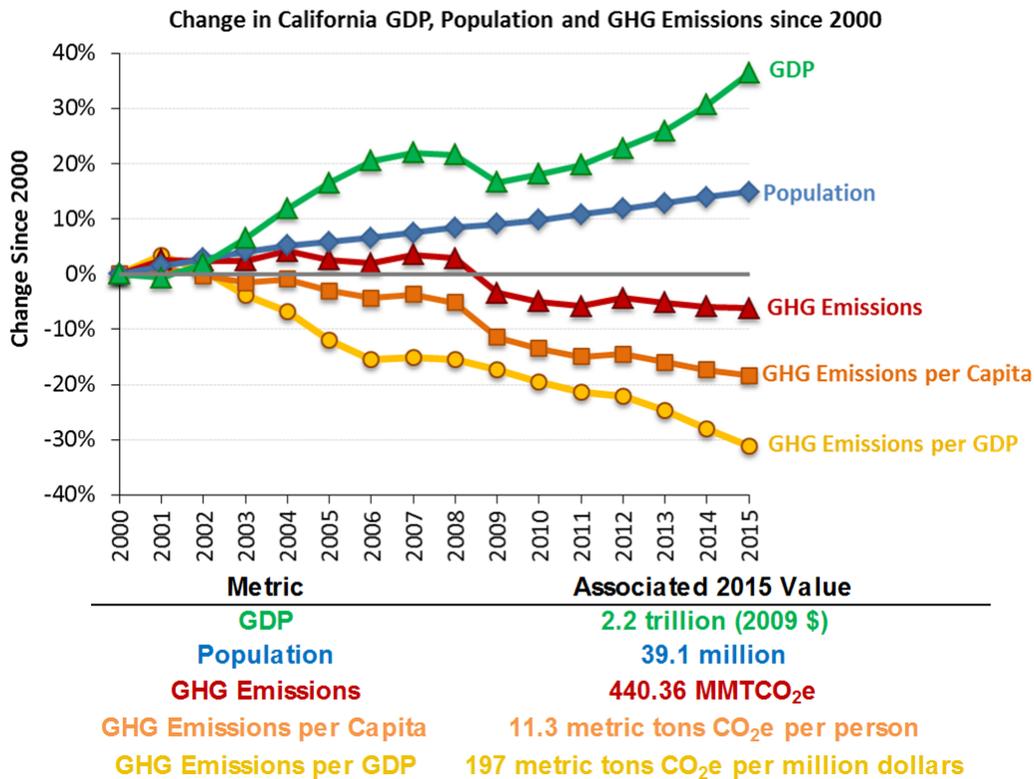


2015 Total CA Emissions: 440.4 MMTCO₂e

Source: ARB 2017a

Exhibit 3.7-1 2015 California GHG Emissions Inventory by Sector

As described below, California has implemented several programs and regulatory measures to reduce GHG emissions. Exhibit 3.7-2 demonstrates California’s progress in achieving statewide GHG emissions reduction targets. Since 2007, California’s GHG emissions have been declining; GHG emissions have continued to decline even as population and gross domestic product have increased. Per-capita GHG emissions in 2015 were 19 percent lower than the peak per-capita GHG emissions recorded in 2001. Similarly, GHG emissions per million dollars of gross domestic product have decreased by 33 percent since the peak in 2001.



Source: ARB 2017b

Exhibit 3.7-2. Trends in California GHG Emissions (Years 2000 to 2015)

Local GHG Emissions Inventories

In 2009, a GHG emissions inventory was conducted for the incorporated cities of Sacramento, Rancho Cordova, Citrus Heights, Elk Grove, Folsom, Isleton, and Galt and the unincorporated areas of Sacramento County. The inventory estimated emissions using the baseline year of 2005 using the ICLEI (Local Governments for Sustainability) Clean Air and Climate Protection Model. The inventory, as summarized in Table 3.7-1, identified GHG emissions from multiple sectors, including: on-road transportation; waste; water related (indirect emissions); agriculture; wastewater treatment (direct emissions); high GWP GHGs; off-road vehicles; Sacramento International Airport; residential, commercial, and industrial energy demand; and industrial processing. In 2005, Sacramento County produced nearly 14 million MTCO₂e. As with the state as a whole, on-road transportation is the largest source of GHG emissions, contributing more than 48 percent of the total.

**Table 3.7-1.
Sacramento County 2005 GHG Emissions Inventory (Countywide)**

Sector	Emissions MTCO _{2e} ¹	Percent of Inventory
Residential	2,439,527	17.5
Commercial and Industrial	2,231,168	16
Industrial Specific	41,369	0.3
On-Road Transportation	6,731,929	48.3
Off-road Vehicle Use	584,090	4.2
Waste	743,232	5.3
Wastewater Treatment	134,354	1
Water-Related	63,667	0.5
Agriculture	203,723	1.5
High GWP GHGs	565,076	4.1
Sacramento International Airport	200,404	1.4
Total Emissions in Sacramento County²	13,938,537	100.0
Notes:		
¹ MTCO _{2e} = metric tons of carbon dioxide equivalent.		
² A total may not be the exact sum of emissions due to rounding.		
Source: Sacramento County Department of Environmental Review and Assessment 2009		

3.7.2 REGULATORY CONTEXT

While federal, State, regional, and local GHG-related plans, policies, and regulations do not generally apply to the project, the information below is helpful for understanding the overall context for GHG emissions impacts and strategies to reduce GHG emissions.

Federal Plans, Policies, Regulations, and Laws

The U.S. Environmental Protection Agency (EPA) is the federal agency responsible for implementing the federal Clean Air Act (CAA). On April 2, 2007, the U.S. Supreme Court held that the EPA must consider regulation of motor vehicle GHG emissions. In *Massachusetts v. Environmental Protection Agency et al.*, 12 states and cities (including California) along with several environmental organizations sued to require EPA to regulate GHGs as pollutants under the CAA (127 S. Ct. 1438 [2007]). The Supreme Court ruled that GHGs fit within the CAA’s definition of a pollutant and that EPA had the authority to regulate GHGs.

U.S. Environmental Protection Agency “Endangerment” and “Cause or Contribute” Findings

On December 7, 2009, the EPA Administrator signed two distinct findings regarding GHGs under Section 202(a) of the CAA:

- ▶ **Endangerment Finding:** The current and projected concentrations of the six key GHGs—carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF₆)—in the atmosphere threaten the public health and welfare of current and future generations.

- ▶ *Cause or Contribute Finding:* The combined emissions of these GHGs from new motor vehicles and new motor vehicle engines contribute to the GHG pollution that threatens public health and welfare.

Mandatory Greenhouse Gas Reporting Rule

On September 22, 2009, EPA released its final Greenhouse Gas Reporting Rule (Reporting Rule). The Reporting Rule is a response to the fiscal year 2008 Consolidated Appropriations Act (House of Representatives Bill 2764; Public Law 110-161), which required EPA to develop "...mandatory reporting of GHGs above appropriate thresholds in all sectors of the economy...." The Reporting Rule applies to most entities that emit 25,000 metric tons (MT) of CO₂-equivalents (CO₂e) or more per year. Since 2010, facility owners have been required to submit an annual GHG emissions report with detailed calculations of the facility's GHG emissions. The Reporting Rule also mandates compliance with recordkeeping and administrative requirements to enable EPA to verify annual GHG emissions reports.

Council on Environmental Quality Guidance

On December 18, 2014, the Council on Environmental Quality (CEQ) released revised draft guidance that superseded the draft GHG and climate change guidance released by CEQ in February 2010. The revised draft guidance applied to all proposed federal agency actions, including land and resource management actions. This guidance explained that agencies should consider both the potential effects of a proposed action on climate change, as indicated by its estimated GHG emissions, and the implications of climate change for the environmental effects of a proposed action (CEQ 2014). The guidance encouraged agencies to draw from their experience and expertise to determine the appropriate level (broad, programmatic or project- or site-specific) and type (quantitative or qualitative) of analysis required to comply with the National Environmental Policy Act (NEPA). The guidance recommended that agencies consider 25,000 MTCO₂e on an annual basis as a reference point below which a quantitative analysis of GHG emissions is not recommended unless it is easily accomplished based on available tools and data (CEQ 2014).

On August 1, 2016, an updated version of the CEQ guidelines was published. In this document, no numeric threshold was established for GHG. Agencies were directed to consider the potential effects of a proposed action and alternatives on climate change as indicated by assessing GHG emissions (e.g., to include, where applicable, carbon sequestration) (CEQ 2016). However, this guidance was subsequently withdrawn on April 5, 2017 (CEQ 2017). The withdrawn guidance was not a regulation and the withdrawal does not change any law, regulation, or other legally binding requirement.

EPA and NHTSA Standards

The EPA and National Highway Traffic Safety Administration (NHTSA) implemented national GHG emission and fuel economy standards for light duty cars and trucks in model years 2012–2016. The second phase of the standards includes GHG and fuel economy standards for model years 2017–2025. The 2017-2025 standards are anticipated to save approximately 4 billion barrels of oil and 2 billion metric tons of GHG emissions. In 2025, if all standards are met through fuel efficiency improvements, the average industry fleetwide fuel efficiency for light duty cars and trucks would be approximately 54.5 miles per gallon (EPA 2012).

In addition to standards for light duty cars and trucks, EPA and NHTSA are also implementing Phase 1 of the Medium- and Heavy-Duty Vehicle GHG Emissions and Fuel Efficiency Standards, which apply to model years 2014–2018. It is anticipated that medium- and heavy-duty vehicles built to these standards from 2014–2018

would reduce CO₂ emissions by approximately 270 million metric tons over their lifetimes (EPA 2011). Phase 2 of these standards would apply to model years 2021–2027 and would reduce GHG emissions by 1 billion metric tons over its lifetime (EPA 2016). In addition to GHG reduction and fuel efficiency, the standards are anticipated to generate development and research jobs focused on advanced cost-effective technologies for cleaner and more efficient commercial vehicles.

State Plans, Policies, Regulations, and Laws

The legal framework for GHG emission reductions has come about through Executive Orders, legislation, and regulations. The major components of California’s climate change initiatives are outlined below.

Assembly Bill 1493

Assembly Bill (AB) 1493 required that ARB develop and adopt, by January 1, 2005, regulations that achieve “the maximum feasible reduction of greenhouse gases emitted by passenger vehicles and light-duty trucks and other vehicles determined by ARB to be vehicles whose primary use is noncommercial personal transportation in the state.” These stricter emissions standards were designed to apply to automobiles and light trucks beginning with model year 2009. In June 2009, the EPA Administrator granted a CAA waiver of preemption to California, allowing the State to implement its own GHG emissions standards for motor vehicles beginning with model year 2009. California agencies worked with federal agencies to conduct joint rulemaking to reduce GHG emissions for passenger car model years 2017 to 2025.

Executive Order S-3-05

Executive Order S-3-05, issued in recognition of California’s vulnerability to the effects of climate change, set forth the following target dates by which statewide GHG emissions would be progressively reduced: by 2010, reduce GHG emissions to 2000 levels; by 2020, reduce GHG emissions to 1990 levels; and by 2050, reduce GHG emissions to 80 percent below 1990 levels.

Assembly Bill 32

In 2006, California passed the California Global Warming Solutions Act of 2006 (AB 32; California Health and Safety Code Division 25.5, Sections 38500, et seq.). AB 32 further details and puts into law the mid-term GHG reduction target established in Executive Order S-3-05: reduce GHG emissions to 1990 levels by 2020. AB 32 also identifies ARB as the State agency responsible for the design and implementation of emissions limits, regulations, and other measures to meet the target.

In December 2008, ARB adopted the Climate Change Scoping Plan (Scoping Plan), which contains the main strategies California will implement to achieve the required GHG reductions required by AB 32 (ARB 2008). The Scoping Plan also includes ARB-recommended GHG reductions for each emissions sector of California’s GHG inventory. ARB acknowledges that land use planning decisions will have large impacts on the GHG emissions that will result from the transportation, housing, industry, forestry, water, agriculture, electricity, and natural gas emissions sectors.

ARB is required to update the Scoping Plan at least once every five years to evaluate progress and develop future inventories that may guide this process. ARB approved the first update to the Climate Change Scoping Plan: Building on the Framework in June 2014 (ARB 2014). The Scoping Plan Update includes a status of the 2008

Scoping Plan measures and other federal, State, and local efforts to reduce GHG emissions in California, and potential actions to further reduce GHG emissions by 2020. The Scoping Plan Update determined that the State is on schedule to achieve the 2020 target (i.e., 1990 levels by 2020). However, an accelerated reduction in GHG emissions is required to achieve the S-3-05 2050 reduction target of 80 percent below 1990 levels by 2050.

The statewide measures adopted under the direction of AB 32, and as outlined in the Scoping Plan, would reduce GHG emissions associated with existing development, as well as new development. ARB has released the 2030 Target Scoping Plan Update Concept Paper to initiate a discussion regarding how to most effectively achieve a 40 percent reduction in GHG emissions by 2030 as compared to 1990 statewide GHG emissions (consistent with Executive Order B-30-15, which is outlined below) (ARB 2016). This Concept Paper was followed by the release of a Proposed Scoping Plan Update, which establishes a proposed framework of action for California to reduce statewide emissions by 40 percent by 2030 compared to 1990 levels (ARB 2017c).

Executive Order B-30-15

In April 2015, Governor Edmund Brown issued an executive order establishing a statewide GHG reduction goal of 40 percent below 1990 levels by 2030. The emission reduction target acts as an interim goal between the AB 32 goal (i.e., achieve 1990 emission levels by 2020) and Governor Brown's Executive Order S-3-05 goal of reducing statewide emissions 80 percent below 1990 levels by 2050. In addition, the executive order aligns California's 2030 GHG reduction goal with the European Union's reduction target (i.e., 40 percent below 1990 levels by 2030) that was adopted in October 2014.

Senate Bill 32

Approval of Senate Bill 32 (SB 32) in September 2016 extends the provisions of AB 32 from 2020 to 2030 with a new target of 40 percent below 1990 levels by 2030. The companion bill, AB 197, adds two non-voting members to the ARB, creates the Joint Legislative Committee on Climate Change Policies consisting of at least three Senators and three Assembly members, requires additional annual reporting of emissions, and requires Scoping Plan updates to include alternative compliance mechanisms for each statewide reduction measure, along with market-based compliance mechanisms and potential incentives.

Executive Order S-1-07

Executive Order S-1-07 acknowledges that the transportation sector is the main source of GHG emissions in California. The order established a goal of reducing the carbon intensity of fuels for mobile, stationary, and portable emissions sources sold in California by a minimum of 10 percent by 2020. It also directed ARB to determine whether this Low Carbon Fuel Standard could be adopted as a discrete, early-action measure after meeting the mandates in AB 32. ARB adopted the Low Carbon Fuel Standard on April 23, 2009.

Senate Bill 97

Senate Bill (SB) 97, signed August 2007, acknowledges that climate change is a prominent environmental issue that requires analysis under CEQA. This bill directs the California Office of Planning and Research (OPR) to prepare, develop, and transmit to the California Natural Resources Agency guidelines for the feasible mitigation of GHG emissions or the effects of GHG emissions. The California Natural Resources Agency adopted those guidelines on December 30, 2009, and the guidelines became effective March 18, 2010.

Senate Bill 375

SB 375, signed in September 2008, aligns regional transportation planning efforts, regional GHG reduction targets, and land use and housing allocation. SB 375 requires Metropolitan Planning Organizations (MPOs) to adopt a Sustainable Communities Strategy (SCS), which will prescribe land use allocation in that MPO's Regional Transportation Plan (RTP). ARB adopted regional GHG targets for passenger vehicles and light trucks for 2020 and 2035 for the 18 MPOs in California. If the combination of measures in the SCS would not meet the regional targets, the MPO must prepare a separate "alternative planning strategy" to meet the targets.

ARB Advanced Clean Cars Program/Zero Emission Vehicle Program

Assembly Bill (AB) 1493 (Chapter 200, Statutes of 2002), also known as the Pavley regulations, required ARB to adopt regulations by January 1, 2005, that would result in the achievement of the "maximum feasible" reduction in GHG emissions from vehicles used in the state primarily for noncommercial, personal transportation.

In January 2012, ARB approved a new emissions-control program for model years 2017 through 2025. The program combines the control of smog, soot, and global warming gases and requirements for greater numbers of zero-emission vehicles into a single package of standards called Advanced Clean Cars (13 CCR 1962.1 and 1962.2). The Advanced Clean Cars requirements include new GHG standards for model year 2017 to 2025 vehicles. ARB anticipates that the new standards will reduce motor vehicle GHG emissions by 34 percent in 2025 (ARB 2011).

The Advanced Clean Cars Program also includes the LEV III amendments to the LEV regulations (13 CCR 1900 et seq.); Zero Emission Vehicle Program and the Clean Fuels Outlet Regulation. The Zero Emission Vehicle Program is designed to achieve California's long-term emission reduction goals by requiring manufacturers to offer for sale specific numbers of the very cleanest cars available. These zero-emission vehicles, which include battery electric, fuel cell, and plug-in hybrid electric vehicles, have now entered the marketplace. They are expected to be fully commercial by 2020. The Clean Fuels Outlet regulation ensures that fuels, such as electricity and hydrogen, are available to meet the needs of the new advanced technology vehicles as they come to market.

Executive Order B-16-12

Executive Order B-16-12 orders State entities under the direction of the Governor including ARB, the Energy Commission, and Public Utilities Commission to support the rapid commercialization of zero emission vehicles (ZEV). It directs these entities to achieve various benchmarks related to zero emission vehicles, including:

- ▶ Infrastructure to support up to one million zero emission vehicles by 2020;
- ▶ Widespread use of zero emission vehicles for public transportation and freight transport by 2020;
- ▶ Over 1.5 million zero emission vehicles on California roads by 2025;
- ▶ Annual displacement of at least 1.5 billion gallons of petroleum fuels by 2025; and
- ▶ A reduction of GHG emissions from the transportation sector equaling 80 percent below 1990 levels by 2050.

Executive Order S-01-07 (Low Carbon Fuel Standard)

Executive Order S-01-07 (17 CCR 95480 et seq.) requires the State to achieve a 10 percent or greater reduction by 2020 in the average fuel carbon intensity for transportation fuels in California regulated by ARB. ARB identified

the Low Carbon Fuel Standard (LCFS) as a discrete early action item under AB 32, and the final ARB resolution (No. 09-31) adopting the LCFS was issued on April 23, 2009. ARB re-adopted LCFS in 2015.

California Green Building Standards Code

In January 2010, the State of California adopted the California Green Building Standards Code (CALGreen Code), which establishes mandatory green building standards for all buildings in California. The code covers five categories: planning and design, energy efficiency, water efficiency and conservation, material conservation and resource efficiency, and indoor environmental quality. These standards include a mandatory set of minimum guidelines, as well as more rigorous voluntary measures, for new construction projects to achieve specific green building performance levels. This code went into effect as part of local jurisdictions' building codes on January 1, 2011. The 2013 update to the code has been adopted and became effective January 2014. Another update to the energy efficiency standards became effective January 1, 2017. The 2016 update to the Building Energy Efficiency Standards will improve the energy efficiency of newly constructed buildings and additions and alterations to existing buildings. The new standards address non-residential development, as well, and build on the energy efficiency progress made within previous iterations.

REGIONAL AND LOCAL PLANS, POLICIES, REGULATIONS, AND ORDINANCES

Sacramento Metropolitan Air Quality Management District

The Sacramento Metropolitan Air Quality Management District (SMAQMD) regulates local air quality and air quality sources in Sacramento County. In the CEQA Guide to Air Quality Assessment, SMAQMD includes a GHG chapter that discusses the recommended approach to evaluating GHG emissions. SMAQMD states that GHG emissions should first be evaluated and addressed on a program level, if possible. For project-level analyses, SMAQMD also includes a list of analysis expectations and methodologies for CEQA analyses. In addition, in November 2014, SMAQMD adopted GHG thresholds of significance that are discussed further in the "Thresholds of Significance" subsection below.

Sacramento County Climate Action Plan

Sacramento County Climate Action Plan (CAP) is a multi-phased project that has been in process since 2009. Phase one was a framework for reducing GHG emissions and an overall strategy for the County to address climate change. This CAP Strategy and Framework Document was adopted by the County Board of Supervisors on November 9, 2011 (Sacramento County 2011a). Within the CAP Strategy and Framework Document, several actions were identified that the County had already taken or could take to reduce GHG emissions. These actions were presented within five sectors: Transportation and Land Use; Energy; Water; Waste Management and Recycling; and Agriculture and Open Space.

Phase two began with the development and adoption of the Government Operations CAP, which identified GHG emissions specific to County operational emissions and measures to reduce such emissions (Sacramento County 2012). The GHG emissions inventory and forecasts in support of the Government Operations CAP was updated in late 2016 as a step in revising or proposing new emissions reductions measures, as needed.

The underway as of the writing of this document is the Communitywide CAP.¹ The Communitywide CAP is intended to update the unincorporated County's GHG emissions inventory and forecasts, determine required GHG emissions reduction targets, and identify and propose emissions reduction measures to achieve these emissions reduction targets. The overall strategy being developed through this project includes:

- ▶ Reducing GHG emissions associated with the County's own operations, as well as taking actions that facilitate GHG emissions reduction in the community
- ▶ Establishing priorities based on a number of factors, such as cost-effectiveness and co-benefits
- ▶ Addressing projected vulnerabilities associated with climate change where cost-effective or required
- ▶ Working collaboratively with other jurisdictions and leveraging existing programs and resources.

Sacramento County General Plan

The following policies and implementation measure from the *Sacramento County General Plan of 2005–2030* Land Use and Air Quality Elements regarding GHG emissions apply to the proposed project (Sacramento County 2011b).

- ▶ **Policy LU-115.** It is the goal of the County to reduce greenhouse gas emissions to 1990 levels by the year 2020. This shall be achieved through a mix of State and local action[s].
- ▶ **Policy AQ-1.** New development shall be designed to promote pedestrian/bicycle access and circulation to encourage community residents to use alternative modes of transportation to conserve air quality and minimize direct and indirect emission of air contaminants.
- ▶ **Policy AQ-11.** Encourage contractors operating in the county to procure and to operate low-emission vehicles, and to seek low emission fleet status for their off-road equipment.
- ▶ **Policy AQ-16.** Prohibit the idling of on- and off-road engines when the vehicle is not moving or when the off-road equipment is not performing work for a period of time greater than five minutes in any one-hour period.
- ▶ **Policy AQ-19.** Require all feasible reductions in emissions for the operation of construction vehicles and equipment on major land development and roadway construction projects.
- ▶ **Policy AQ-22.** Reduce greenhouse gas emissions from County operations as well as private development.

Implementation Measure A (in support of the goal to “improve air quality to promote the public health, safety, welfare, and environmental quality of the community”): Support and implement the Sacramento City/County Bikeways Master Plan and the American Disabilities Act (ADA) Transition & Pedestrian Master Plan to provide safe and convenient access throughout the County. Examine the feasibility of providing bikeway routes through employment centers that encourage bicycle commute trips. (PLANNING, MSA - DOT)

¹ For more information, please see: <http://www.per.saccounty.net/PlansandProjectsIn-Progress/Pages/CAP.aspx>.

Sacramento Area Council of Governments

The Sacramento Area Council of Governments (SACOG) is designated by the State and federal governments as the Metropolitan Planning Organization (MPO) and is responsible for developing a regional transportation plan (MTP) in coordination with Sacramento, Yolo, Yuba, Sutter, El Dorado, and Placer counties and the 22 cities within those counties (excluding the Tahoe Basin). This plan incorporates county wide transportation planning covering a 20-year planning horizon which must be updated every 4 years. As a requirement of SB 375, MPOs need to develop a Sustainable Communities Strategy (SCS) as part of the MTP to identify strategies and policies to reduce greenhouse gas emissions from passenger vehicles to meet state targets established by ARB.

SACOG's MTP/SCS for 2035 (the MTP/SCS) was adopted on April 19, 2012. SACOG's MTP/SCS calls for meeting and exceeding ARB's GHG reduction goals for passenger vehicles and light-duty trucks of 7 percent by 2020 and 16 percent by 2035, where 2005 is the baseline year for comparison (SACOG 2012). SACOG's 2016 MTP/SCS was adopted on February 18th, 2016 (SACOG 2016). The 2016 MTP/SCS demonstrates how the region can accommodate expected regional population growth and the increased demand for transportation in the region, while also showing that the region could achieve a reduction in per-capita passenger vehicle miles traveled (VMT). While the proposed project is outside of the area identified in the SACOG MTP/SCS for development during the planning horizon, it is immediately adjacent to the existing urban edge. The MTP/SCS includes 31 policies and multiple strategies to address the principles of smart land use; environmental quality and sustainability; financial stewardship; economic vitality; access and mobility; and equity and choice. Highlights of MTP/SCS policies include:

- ▶ SACOG encourages local governments to direct greenfield developments to areas immediately adjacent to the existing urban edge through data-supported information, incentives and pursuit of regulatory reform for cities and counties.
- ▶ Implement the Rural-Urban Connection Strategy (RUCS) which ensures good rural-urban connections and promotes the economic viability of rural lands while also protecting open space resources to expand and support the implementation of the Blueprint growth strategy and the MTP/SCS.
- ▶ Support and invest in strategies to reduce vehicle emissions that can be shown as cost effective to help achieve and maintain clean air and better public health.
- ▶ Use the best information available to implement strategies and projects that lead to reduced GHG emissions.
- ▶ Consider strategies to green the system, such as quieter pavements, cleaner vehicles, and lower energy equipment where cost effective, and consider regional funding contributions to help cover the incremental cost.
- ▶ SACOG encourages locally determined developments consistent with Blueprint principles and local circulation plans to be designed with walking, bicycling, and transit use as primary transportation consideration.

3.7.3 ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

ANALYSIS METHODOLOGY

Emissions of GHGs have the potential to adversely affect the environment because such emissions contribute cumulatively to global climate change. It is unlikely that a single project will contribute significantly to climate change, but cumulative emissions from many projects could affect global GHG concentrations and the climate system. Therefore, impacts are analyzed within the context of the potential contribution to the cumulatively significant impact of climate change.

The proposed project's GHG emissions were estimated using similar methods as those described in Section 3.3, "Air Quality." In addition to criteria air pollutants, CalEEMod Version 2016.3.1 can also estimate GHG emissions associated with construction and operational activities. Please see Appendix B of this EIR for model details, assumptions, inputs, and outputs.

For construction, GHG emissions were estimated for off-road construction equipment, material delivery trucks, haul trucks, and construction worker vehicles. For operational activities, CalEEMod estimates GHG emissions associated with mobile, area, and energy sources, similar to air quality emissions. However, CalEEMod also estimates indirect GHG emissions associated with solid waste disposal and water consumption.

THRESHOLDS OF SIGNIFICANCE

The thresholds for determining the significance of impacts for this analysis are based on the environmental checklist in Appendix G of the CEQA Guidelines, as amended. The proposed project would have a significant impact on GHGs if implementation of the proposed project would:

- ▶ generate greenhouse gas emissions, either directly, indirectly, that may have a significant impact on the environment, or
- ▶ conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

As stated in Appendix G, the significance criteria established by the applicable air quality management district may be relied on to make the above determinations. For the purposes of determining whether the proposed project's construction-related and operational GHG emissions may have a significant impact on the environment, For land development and construction projects, SMAQMD considers a project to exceed GHG emission thresholds if:

- ▶ the annual construction-related emissions exceed 1,100 MT CO₂e/year; or
- ▶ the annual operational emissions exceed 1,100 MT CO₂e/year.

For the purposes of determining whether the proposed project would conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases, consideration is given to all of the aforementioned regulations and plans.

IMPACT ANALYSIS

IMPACT 3.7-1 *Generation of Greenhouse Gas Emissions. Construction and operational activities associated with the proposed project would generate GHG emissions. Modeled GHG emission estimates for construction and operational activities are not anticipated to exceed the SMAQMD thresholds of significance when the short-term construction-related emissions are amortized over the (long-term) operational lifetime of the project. Therefore, construction and operation of the proposed project is considered to result in a **less than cumulatively considerable contribution to the significant cumulative impact** of climate change.*

Implementation of the proposed project would generate short-term construction and long-term operational GHG emissions. Construction-related GHG emissions would cease following construction of the proposed project. Operational emissions are considered long-term and assumed to occur for the lifetime the project. Construction emissions have been amortized over the lifetime of the project (i.e., 25 years) and added to the annual operational emissions to compare with the applicable threshold of significance.

Construction-related exhaust GHG emissions would be generated from a variety sources during construction of the proposed project including, but not limited to heavy-duty construction equipment, haul trucks, material delivery trucks, and construction worker vehicles. Similar to air quality emissions, daily GHG emissions would vary depending on the type of construction activities planned for each day. For example, during construction equipment-intensive phases, daily GHG emissions would be higher than daily emissions generated during less equipment-intensive phases.

Operational GHG emissions are distinguished by direct and indirect GHG emissions. Direct GHG emissions are those emissions that are generated at the location of consumption or use. For example, mobile-source emissions are direct emissions because GHG emissions are generated as a vehicle begins to move. Conversely, indirect emissions are those emissions that occur at a different time or location from the point of consumption or use. For example, electricity-related GHG emissions are indirect emission because as a consumer uses electricity at their home, the fuel combustion and emissions associated with creating that electricity likely occurred off-site or at a different time. Other indirect GHG emissions include emissions associated with solid waste disposal and water consumption. CalEEMod estimates direct emissions associated with the proposed project's mobile (e.g., staff and student-related vehicles), area (e.g., landscape maintenance equipment), and energy (e.g., natural gas) sources, and indirect emissions associated with energy (i.e., electricity), water (i.e., conveyance and distribution), and solid waste (i.e., decomposition) sources.

Table 3.7-2 presents a summary of the proposed project's maximum annual construction-related GHG emissions and annual operational emissions by emissions source. Annual operational GHG emissions are added with the amortized construction emissions to compare with the applicable threshold of significance.

As shown in Table 3.7-2, neither the proposed project's short-term maximum annual GHG emissions nor long-term total annual GHG emissions (i.e., operational emissions and amortized construction emissions) would exceed the SMAQMD threshold of significance of 1,100 MT CO₂e/year.

In addition, as GHGs are considered in the context of a cumulative impact due to their persistence in the environment and broad region in influence, it is also appropriate to consider the net regional impact the proposed project is having on GHG emissions. As described in greater detail in the traffic report prepared for this EIR (Appendix G), it is anticipated that the proposed project would reduce the travel that might otherwise occur if the

Paso Verde School was not constructed and students were required to travel to other NUSD schools. Travel to alternative school sites could result in 3,664 daily VMT, which would be 2,139 more VMT than anticipated as a result of the proposed project. This additional level of VMT results in approximately 152 MT CO₂e/year greater emissions than would result from implementation of the proposed project. With consideration of this reduction in GHG emissions from mobile sources, the proposed project’s total annual emissions, including amortized construction emissions and annual operational emissions, would be a net regional reduction in GHG emissions for school transport within the NUSD school district. Therefore, contribution of the GHG emissions that would be generated by the construction and operations of the proposed project to climate change would be **less than cumulatively considerable**.

Table 3.7-2. Modeled GHG Emissions for Construction and Operations of the Proposed Project	
Emissions Source	GHG Emissions (MTCO ₂ e / year)
Construction GHG Emissions	
Maximum Annual Construction Emissions	878
Total Potential Construction Emissions*	1,985
Amortized Construction-Related Emissions**	79
Operational GHG Emissions	
Area	0.005
Energy	256
Mobile	200
Waste	60
Water	20
Total Annual Operational Emissions	535
Total Annual Emissions, including Amortized Construction Emissions + Operational Emissions***	615
Notes:	
* Total construction emissions are for the potential emissions over the entirety of the proposed construction period, which would span more than a single year.	
** Total Potential Construction emissions are amortized over 25 years, which is the suggested operational lifetime for a new conventional commercial building, per the SMAQMD <i>Guide to Air Quality Assessment in Sacramento County</i> . The operational lifetime estimate is derived from the State of California Executive Order D-16-00 and US Green Building Council’s October 2003 report on The Costs and Financial Benefits of Green Buildings (SMAQMD 2017).	
*** Total project GHG emissions include annual operational emissions and amortized construction emissions.	
Totals do not add due to rounding.	
Source: Modeled by AECOM in 2018	

IMPACT 3.7-2 Consistency with Applicable Plans, Policies, and/or Regulations Adopted for the Purpose of Reducing GHG Emissions. *The proposed project would not result in cumulatively considerable impacts as a result of inconsistency with applicable strategies of the GHG reduction plans. The impact is less than cumulatively considerable.*

As is shown above in Table 3.7-2, mobile and energy sources are the two primary sources of GHG emissions that would be generated by the proposed project. The primary plans concerning reduction of GHG emission that is applicable to this unincorporated area of Sacramento County are the Sacramento County General Plan and the SACOG MTP/SCS.

The proposed project is in alignment Sacramento County General Plan Policy AQ-1, which states that “New development shall be designed to promote pedestrian/bicycle access and circulation to encourage community residents to use alternative modes of transportation to conserve air quality and minimize direct and indirect emission of air contaminants.” As part of the design of the proposed project, pedestrian and bicycle facilities would be established, linking the project site with the residential neighborhood to the east, and additional bicycle access walkways would be built in multiple directions. These elements of the project design facilitate pedestrian and bicycle access from the nearby residential communities and encourage non-vehicular modes of transportation.

In addition, an implementation measure within the Sacramento County General Plan is specifically tied to the support and implementation of the County Bikeways Master Plan. A goal of the Sacramento County Bicycle Master Plan is to increase the number of people in the County who bicycle as a mode of transportation to work, school, and errands, as well as for recreation (Sacramento County 2011c). The proposed project would be adjacent to the existing off-road bike trail along the river at the west of the project site and would connect to the proposed bike lane identified in the County Bikeways Master Plan on Del Paso Road south of the project site. Connecting the school site directly to existing bicycle and pedestrian pathways of the adjacent residential community is in direct support of this goal and the Sacramento County General Plan implementation measure.

The project is within the planning area for the SACOG Regional Bicycle, Pedestrian, and Trails Master Plan. This plan was developed with the vision of a complete transportation system where bicycling and walking are viable and popular travel choices within the communities of the region. The plan also recognizes the need to reduce air pollution and how the quality of infrastructure can encourage more trips by foot and bike. The proposed project would specifically connect to existing Class II bike lanes at Del Paso Road immediately south of the project site and Westlake Parkway to the east of the project site, providing immediate connectivity for alternative modes of transportation to and from nearby residential and community services. The project is also within a half mile of proposed new bike lanes on the major roadways surrounding the project site identified within the plan (Del Paso Road, Powerline Road, and Bayou Way parallel to I5), providing future connectivity to the greater region via alternate modes of transportation (SACOG 2015).

Strategy 6.4 in the MTP/SCS is to “continue to pursue regulatory reform at the state and national levels to remove barriers to greenfield developments when appropriate at the edges of existing urbanization.” In the case of the proposed project, the school would be developed immediately adjacent to existing residential development and just north of retail and commercial centers. The proposed project is immediately adjacent to, and would serve, existing residents within the city of Sacramento.

An additional policy identified in the MTP/SCS is to use the best information available to implement strategies and projects that lead to reduced GHG emissions. Similarly, a specific strategy identified in the Sacramento County Climate Action Plan is to take actions that facilitate GHG emissions reduction in the community. As described in the traffic report developed to support this EIR (see Appendix G), the proposed school could generate approximately 1,525 daily vehicle miles traveled (VMT). However, if the proposed project were not constructed, VMT would still occur, since the students that would enroll in the proposed school would travel to another NUSD school. Potential travel for such daily trips to an alternative existing NUSD school could result in approximately 3,664 daily VMT, which would be 2,139 more VMT than anticipated as a result of the proposed project. Therefore, regional VMT with implementation of the proposed project is anticipated to be less than half of what it would otherwise be for the purposes of school transportation if the project were not to be constructed. The project would have a net benefit for travel demand (VMT) and VMT-related GHG emissions.

Finally, the District would be responsible for completing pedestrian and bicycle facilities linking the project site with the residential neighborhood to the east, as well as sidewalk and roadway improvements along Del Paso Road. These improvements are in alignment with the MTP/SCS policy to encourage locally determined developments consistent with Blueprint principles and local circulation plans to be designed with walking, bicycling and transit use as primary transportation considerations. Specifically, Strategy 29.1 states SACOG’s intent to “invest in safe bicycle and pedestrian routes that improve connectivity and access to common destinations, such as connections between residential areas and schools. Also, invest in safe routes to and around schools so trips can be made by bicycling or walking.”

While the proposed project is outside of the area identified in the SACOG MTP/SCS for development during the planning horizon, it is immediately adjacent to the existing urban edge, is anticipated to result in a net reduction in VMT, and would support opportunities for alternative transportation between the proposed school and adjacent the residential community. Therefore, this impact is considered to be **less than cumulatively significant**.

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3.8 HAZARDS AND HAZARDOUS MATERIALS

The following section addresses potential impacts related to hazardous materials, hazards associated with historic and current land use of the project site and surrounding uses, and hazards associated with operations at Sacramento International Airport. The potential for impacts on emergency response plans is also addressed in this section.

Service levels by fire personnel and other emergency responders are addressed in Section 3.12, “Public Services and Recreation,” of this EIR. Potential hazards and associated impacts related to toxic air contaminant emissions are discussed in Section 3.3, “Air Quality;” potential impacts from geologic hazards are discussed in Section 3.6, “Geology, Soils, Mineral, and Paleontological Resources;” and potential public health impacts and hazards related to groundwater and flooding are discussed in Section 3.9, “Hydrology and Water Quality.”

3.8.1 ENVIRONMENTAL SETTING

DEFINITIONS OF TERMS

For purposes of this section, the term “hazardous materials” refers to both hazardous substances and hazardous wastes. A “hazardous material” is defined by federal regulations as “a substance or material that ... is capable of posing an unreasonable risk to health, safety, and property when transported in commerce” (49 CFR 171.8). California Health and Safety Code Section 25501 defines a hazardous material as follows:

Hazardous material means any material that, because of its quantity, concentration, or physical, or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment if released into the workplace or the environment. Hazardous materials include, but are not limited to, hazardous substances, hazardous waste, and any material which a handler or the administering agency has a reasonable basis for believing that it would be injurious to the health and safety of persons or harmful to the environment if released into the workplace or the environment.

Hazardous wastes are defined in California Health and Safety Code Section 25141(b) as wastes that:

...because of their quantity, concentration, or physical, chemical, or infectious characteristics, [may either] cause, or significantly contribute to an increase in mortality or an increase in serious illness [, or] pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, disposed of, or otherwise managed.

PHYSICAL CONDITIONS OF THE PROJECT SITE AND SURROUNDING AREA

The 34-acre project site is undeveloped and consists of fallow agricultural land. Historically, the site was used for agricultural crop production including wheat, barley, and rice. The last year of rice production was 2002. In 2006 and 2007, the site was in wheat production. Since the site has been owned by the NUSD, grass hay (oat and rye) has been grown on the site, and it has been cut periodically..

The RD 1000 West Drainage Canal is located approximately 200 feet from the project site’s western and northern boundaries. The Natomas Basin Conservancy’s (TNBC’s) Rosa East tract – directly to the west – comprises three

agricultural fields totaling 106 acres that are planted with alfalfa and are part of TNBC's Fisherman's Lake Reserve (TNBC 2016). The Sacramento International Airport is approximately 2 miles to the northwest.

PREVIOUS ENVIRONMENTAL REPORTS

The following environmental reports have been previously prepared for the project site and are included in Appendix E of this EIR.

- ▶ **Phase I Environmental Site Assessment, West Lakeside School Site, Sacramento, California (Wallace-Kuhl and Associates [WKA] 2005):** A 2005 Phase I environmental site assessment (ESA) prepared for the original 10-acre school site (APN 225-0030-046) (WKA 2005), which overlapped the eastern and central portions of the current 34-acre site. The assessment included a visual survey, database and historic records search, and personal interviews, and concluded there is no evidence of hazardous materials, structures, or underground storage tanks on the site. The cultivation of agricultural crops probably involved the use of pesticides. However, WKA determined that residual pesticide concentrations in site soils and throughout the Natomas Basin are likely consistent with regional background concentrations and below regulatory screening levels (WKA 2005).
- ▶ **J House Environmental, Preliminary Environmental Assessment Report (J House Environmental 2006):** Concurrently, NUSD conducted a site evaluation (J House Environmental 2006) that complied with California Department of Toxic Substances Control's (DTSC's *Preliminary Endangerment Assessment Guidance Manual* (1994) and *Interim Guidance for Sampling Agricultural Fields for School Sites* (2002). This evaluation also addressed the original 10-acre site to determine through soil sampling whether hazardous substances or hazardous materials existed at the site that could pose a potential risk to human health and the environment. Based on its past and current agricultural use, the likely presence of organochloride pesticides in site soil existed. This Preliminary Environmental Assessment (PEA) included testing of soils for organochlorine pesticides and heavy metals that could have been present in fertilizers, pesticides, and herbicides used in the area. None of the soil samples contained organochlorine pesticides at concentrations above laboratory detection limits. Metals concentrations were within the range of background concentrations. DTSC approved the PEA prepared by J House Environmental on July 19, 2006 for the original 10-acre site with a no further action determination (DTSC 2006).
- ▶ **J House Environmental, Phase I ESA (J House Environmental 2007):** In 2007, a Phase I ESA for expansion of the school site by 31.2 acres was prepared (J House Environmental 2007); thereby, expanding the site to approximately 41.2 acres. According to the Phase I ESA, the 31.2-acre expansion site completely encompassed the previously analyzed 10-acre site. Based on the previous results for the 10-acre site, the Phase I ESA concluded that the soils within the additional 31.2 acres would not contain organochlorine pesticides at concentrations above laboratory detection limits. DTSC concurred and approved the Phase I ESA on October 19, 2007 with a no further action determination (DTSC 2007).

UPDATED 2016 PHASE I ESA

AECOM prepared a Phase I ESA for the project site (AECOM 2016). The Phase I ESA included a review of local, State, and federal environmental record sources, historical sources, aerial photographs, and physical setting sources (Appendix E). A site reconnaissance was conducted for the project site by AECOM on May 12, 2016 to

determine current conditions; to check for the storage, use, production or disposal of hazardous or potentially hazardous materials; and to interview persons knowledgeable about current and past site use.

Review of historical U.S. Geological Survey topographic maps and historic aerial photos of the property showed no evidence was observed on the maps to suggest that the property was disturbed by intensive human activities such as quarrying, subsurface or surface mining, or dredging. No belowground or aboveground storage tanks, odors, soil staining, or corrosion was observed within the project site (AECOM 2016). No other potential Recognized Environmental Conditions (RECs)¹ were observed.

One discharge pipe was observed northeast of the northeastern corner of the subject site. The drainage pipe likely discharges surface water from the west-adjacent West Lakeside residential development to the drainage canal north of the subject property. The interior of the drainage pipe was dry, and no staining or odors were noted. In times of heavy rainfall, discharged surface water potentially could affect the subject property, although no evidence of such impacts was observed during the site reconnaissance (AECOM 2016).

High Pressure Pipelines

Two natural-gas pipelines operated by the Pacific Gas and Electric Company (PG&E) are present along Del Paso Road, approximately 1,600 feet south of the project site: a 4-inch-diameter distribution feeder main buried under the roadway and an 8-inch-diameter pipeline in the road shoulder. These pipelines are greater than 1,500 feet from the project site (J House Environmental 2007).

Water Lines

The closest water transmission mains are located along Del Paso Road, along Clarewood Way, and at the intersection of Westlake Parkway and Snelling Lane. These water transmission mains range in size from 8 to 12 inches. The project will get potable and fire protection water supply from the existing infrastructure in Westlake Parkway.

Pole-Mounted Transformers

No high-voltage, tower-mounted electrical transmission lines (115- to 460-kilovolt [kV]), capacitors, or pole-mounted electrical transformers are present on, adjacent to, or within 100 feet of the project site. The closest subtransmission lines (69 kV) are located along Del Paso Road, approximately 1,600 feet south of the site. Two electrical transformers mounted on concrete pads are located within the Westborough development; however, they do not contain PCBs (WKA 2005).

RESULTS OF RECORDS SEARCH FOR HAZARDOUS MATERIALS

The records search conducted by AECOM did not find documentation of known contaminated municipal groundwater wells, active or inactive landfills, producing California Division of Oil and Gas petroleum wells located on, adjacent to, or within one-half mile of the project site (Wardlow, pers. comm., 2018). No confirmed State or federal “Superfund” sites were identified within one mile of the property (AECOM 2016).

¹ The American Society of Testing and Materials Standard Practice E 1527-05 define “Recognized Environmental Conditions” as the “the presence or likely presence of any hazardous substances or petroleum products on a property under conditions that indicate an existing release, a part release, or a material threat of a release of any hazardous substances or petroleum products into structures on the property or into the ground, groundwater, or surface water of the property.”

AECOM searched the State Water Resources Control Board's (SWRCB's) GeoTracker web site and the DTSC's EnviroStor web site to identify toxic releases, hazardous waste, or other violations that could affect the project site (SWRCB 2018 and DTSC 2018). The project site identified in the GeoTracker and EnviroStor databases as a DTSC school investigation site. Two PEAs were prepared for the project site: one PEA for the original 10-acre project site and one PEA for the additional 31.2 acres of the project site. As discussed previously, DTSC approved the PEAs for project site and granted no further action on July 19, 2006 and October 19, 2007.

DTSC maintains a hazardous waste and substances site list (Cortese list) pursuant to Government Code Section 65962. As of March 2017, the project site is not on this list (DTSC 2018).

In addition, AECOM searched the EPA's Envirofacts database. The Envirofacts database is an assemblage of EPA databases, including the Comprehensive Environmental Response, Compensation, and Liability Act (commonly known as Superfund) Information System database, which includes National Priorities List sites being assessed under the Superfund program, hazardous waste sites, and potential hazardous waste sites. The project site is not listed in the Envirofacts database (EPA 2018).

SACRAMENTO INTERNATIONAL AIRPORT

The proposed playfields and school buildings would be located approximately 2 miles southeast of the Sacramento International Airport. The airport is owned by Sacramento County and is used for commercial and general aviation. The airport operates two parallel runways, both 8,600 feet long that run from north to south (Sacramento Area Council of Governments Airport Land Use Commission 2013). The airport averages 300 flights per day and 109,500 flights per year (AirNav 2018).

The Sacramento Area Council of Governments (SACOG) Airport Land Use Commission (ALUC) is responsible for the preparation of an Airport Land Use Commission Plan (ALUCP) to protect public health, safety, and welfare by ensuring the orderly expansion of airports and the adoption of land use measures that minimize the public's exposure to excessive noise and safety hazards within areas around public airports. The ALUCP establishes a set of compatibility criteria that are used to evaluate the compatibility of land use and airport proposals within the Airport Influence Area (AIA).

The Sacramento International Airport Land Use Compatibility Plan indicates that the project site is located within the AIA and is within Referral Area 1, Safety Zone 4 (Outer Approach/Departure Zone), and Safety Zone 6 (Traffic Pattern Zone) (Exhibit 3.8-1).² Referral Area 1 encompasses locations where noise and/or safety represent compatibility concerns. Safety Zone 4 (Outer Approach/Departure Zone) identifies area within the community noise equivalent level (CNEL) 60 dB contour and where there is a low to moderate risk of aircraft accidents. Safety Zone 6 (Traffic Pattern Zone) is the area near the airport within which aircraft are engaged in initial climb-out, final descent, or closed-circuit flight training. Land uses in Referral Area 1 and Safety Zone 4 are subject to height limitations for airspace protection based on criteria set forth in Federal Aviation Regulations (FAR) Part 77 (see Section 3.8.2, "Regulatory Context" below for further discussion of FAR Part 77 criteria).

The Federal Aviation Administration (FAA) recommends a separation distance of 10,000 feet at airports for any of the hazardous wildlife attractants. For all airports, the FAA recommends a distance of 5 statute miles between

² Airport Influence Area is the area in which current or future airport-related noise, overflight, safety, or airspace protection factors may substantially affect land uses or necessitate restrictions on those uses. The airport influence area constitutes the area within which certain land use actions are subject to ALUC review to determine consistency with the ALUCP policies.

the farthest edge of the airport's airport operating area and the hazardous wildlife attractant if the attractant could cause hazardous wildlife movement into or across the approach or departure airspace (FAA 2007). The project site is not within the FAA-defined 10,000-foot separation distance for wildlife attractants but is within the 5 statute miles of the Sacramento International Airport (Sacramento Area Council of Governments[SACOG] Airport Land Use Commission 2013:Appendix F).

WILDFIRE RISK AREAS

The California Department of Forestry and Fire Protection (CAL FIRE) has established a fire hazard severity classification system. Fire hazard severity zones are measured qualitatively, based on vegetation, topography, weather, crown fire potential (a fire's tendency to burn upwards into trees and tall brush), ember production, and movement within the area of question.

Fire prevention areas considered to be under State jurisdiction are referred to as "State responsibility areas." In State responsibility areas, the CAL FIRE is required to delineate three hazard ranges: moderate, high, and very high. "Local responsibility areas," which are under the jurisdiction of local entities (e.g., cities, counties), are required to only identify very high fire hazard severity zones.

The majority of Sacramento County is identified by the California Department of Forestry and Fire Protection (CAL FIRE) as a Local Responsibility Area. Local Responsibility Areas, which are under the jurisdiction of local entities (e.g., cities, counties), are required to only identify very high fire hazard severity zones. The CAL FIRE map "Fire Hazard Severity Zones in LRA" for Sacramento County identifies the project site and surrounding area as a Non-Very High Fire Hazard Severity Zone, which indicates that the risk of wildland fire hazards is not considered high or very high (CAL FIRE 2008).

3.8.2 REGULATORY CONTEXT

FEDERAL PLANS, POLICIES, REGULATIONS, AND LAWS

Hazardous Materials Management

The U.S. Environmental Protection Agency (EPA) has primary responsibility for enforcing and implementing federal laws and regulations pertaining to hazardous materials. Applicable regulations are contained mainly in CFR Titles 29, 40, and 49. Hazardous materials, as defined in the CFR, are listed in 49 CFR 172.101. Management of hazardous materials is governed by the laws summarized below.

- ▶ **Resource Conservation and Recovery Act of 1976 (RCRA):** The RCRA (42 U.S. Code [USC] 6901 et seq.) established a federal regulatory program for the generation, transport, and disposal of hazardous substances. Under the RCRA, EPA regulates the generation, transportation, treatment, storage, and disposal of hazardous substances. The RCRA was amended by the Hazardous and Solid Waste Amendments of 1984, which banned the disposal of hazardous waste on land and strengthened EPA's reporting requirements. EPA has delegated authority for many RCRA requirements to the California Department of Toxic Substances Control (DTSC).
- ▶ **Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA):** CERCLA, also called the Superfund Act (42 USC 9601 et seq.), provided broad federal authority and created

a trust fund for addressing releases and threatened releases of hazardous substances that could endanger public health or the environment.

- ▶ **Superfund Amendments and Reauthorization Act of 1986 (SARA):** The Superfund Hazardous Substance Cleanup Program (Public Law 96-510) was established on December 11, 1980. The program was expanded and reauthorized by the Superfund Amendments and Reauthorization Act of 1986 (Public Law 99-499), also known as SARA Title III. SARA created the Emergency Planning and Community Right-to-Know Act of 1986, also known as SARA Title III, a statute designed to improve community access to information about chemical hazards and to facilitate the development of chemical emergency response plans by state, tribal, and local governments.
- ▶ **Toxic Substances Control Act:** The Toxic Substances Control Act (TSCA) (15 USC 2601 et seq.) provides EPA with authority to require reporting, recordkeeping and testing, and restrictions related to chemical substances and/or mixtures. The TSCA addresses the production, importation, use, and disposal of specific chemicals, including polychlorinated biphenyls (PCBs), asbestos, radon, and lead-based paint.
- ▶ **Clean Air Act:** Regulations under the Clean Air Act (42 USC 7401 et seq., as amended) are designed to prevent accidental releases of hazardous materials. The regulations require facilities that store a threshold quantity or greater of listed regulated substances to develop a risk management plan that includes hazard assessments and response programs to prevent accidental releases of listed chemicals.

These laws and associated regulations include specific requirements for facilities that generate, use, store, treat, and/or dispose of hazardous materials. EPA is responsible for compiling the National Priorities List (NPL) for known or threatened release sites of hazardous substances, pollutants, or contaminants (commonly referred to as “Superfund sites”). EPA provides oversight of and supervision for Superfund investigation/remediation projects, evaluates remediation technologies, and develops hazardous materials disposal restrictions and treatment standards.

Occupational Safety and Health Administration Worker Safety Requirements

The Occupational Safety and Health Administration (OSHA) is responsible for ensuring worker safety. OSHA sets federal standards for implementation of workplace training, exposure limits, and safety procedures for handling hazardous substances and addressing other potential industrial hazards. OSHA also establishes criteria by which each state can implement its own health and safety program. The Hazard Communication Standard (CFR Title 29, Part 1910) requires that workers be informed of the hazards associated with the materials they handle. Workers must be trained in safe handling of hazardous materials, use of emergency response equipment, and building emergency response plans and procedures. Containers must be labeled appropriately, and material safety data sheets must be available in the workplace.

Hazardous Materials Transportation

The U.S. Department of Transportation (DOT), in conjunction with EPA, is responsible for enforcing and implementing federal laws and regulations that govern transportation of hazardous materials. The Hazardous Materials Transportation Act of 1974 (49 USC 5101) directed DOT to establish regulations for the safe storage and transportation of hazardous materials (CFR Title 49, Parts 171–180), which define the types of hazardous materials, their transport, packaging, and methods of marking vehicles (i.e., via placards). EPA, the California

Highway Patrol (CHP), the California Department of Transportation (Caltrans), and DTSC also enforce state and federal laws regarding hazardous materials transport. EPA regulations for transporting hazardous wastes require tracking shipments with manifests. EPA standards for transporters of hazardous materials are found at 40 CFR 263 and include labeling, placarding, proper containers, and reporting discharges. DOT regulations are documented in 49 CFR 171–180.

Airport and Airspace Safety

Part 77 of the FAR, “Objects Affecting Navigable Airspace,” has been adopted as a means of monitoring and protecting the airspace required for safe operation of aircraft and airports. Part 77 establishes:

- ▶ the requirements to provide notice to the FAA of certain proposed construction, or the alteration of existing structures;
- ▶ the standards used to determine obstructions to air navigation, and navigational and communication facilities;
- ▶ the process for aeronautical studies of obstructions to air navigation or navigational facilities to determine the effect on the safe and efficient use of navigable airspace, air navigation facilities, or equipment; and
- ▶ the process to petition FAA for discretionary review of determinations, revisions, and extensions of determinations.

Objects that exceed certain specified height limits constitute airspace obstructions. FAR Section 77.13 requires that FAA be notified of proposed construction or alteration of certain objects within a specified vicinity of an airport, among them the following:

- ▶ any construction or alteration of more than 200 feet in height above the ground level at its site; and
- ▶ any construction or alteration of greater height than an imaginary surface extending outward and upward at a slope of 100 to 1 for a horizontal distance of 20,000 feet from the nearest point of the nearest runway of each public-use airport, public-use airport under construction, or military airport with at least one runway more than 3,200 feet in actual length, excluding heliports.

However, a notice need not be filed with FAA for construction of an object that would be shielded by existing permanent, substantial structures or by natural terrain or topographic features of equal or greater height, and that would be located in the congested area of a city, town, or settlement where the shielded structure would not adversely affect safety in air navigation (FAR Section 77.15).

Please see Impact 3.8-3 below for a detailed discussion of the proposed project’s compliance with FAR 77 regulations that prevent safety hazards and Impact 3.10-1 in Section 3.10, “Land Use, Planning, Population, and Housing,” for a discussion of land use compatibility as it pertains to FAA regulations.

STATE PLANS, POLICIES, REGULATIONS, AND LAWS

Hazardous Materials Handling

Several state agencies regulate the transportation and use of hazardous materials to minimize potential risks to public health and safety. The California Environmental Protection Agency (Cal/EPA) and the Governor’s Office

of Emergency Services establish rules governing the use of hazardous substances in California. Within Cal/EPA, DTSC is primarily responsible for regulating the generation, transport, and disposal of hazardous substances under the authority of the Hazardous Waste Control Law; enforcement is delegated to local jurisdictions. Regulations implementing the Hazardous Waste Control Law list hazardous chemicals and common substances that may be hazardous; establish criteria for identifying, packaging, and labeling hazardous substances; prescribe hazardous-substances management; establish permit requirements for treatment, storage, disposal, and transportation of hazardous substances; and identify hazardous substances prohibited from landfills. These regulations apply to the protection of human health and the environment during construction.

State regulations applicable to hazardous materials are contained primarily in Title 22 of the California Code of Regulations (CCR). CCR Title 26 is a compilation of those CCR chapters or titles that are applicable to hazardous materials management. California Department of Industrial Relations, Division of Occupational Safety and Health (Cal/OSHA) standards are presented in CCR Title 8; these standards are more stringent than federal OSHA regulations and address workplace regulations involving the use, storage, and disposal of hazardous materials.

State and federal laws require detailed planning to ensure that hazardous materials are handled, used, stored, and disposed of properly, and, in case such materials are accidentally released, to prevent or to mitigate injury to health or the environment. California's Hazardous Materials Release Response Plans and Inventory Law—also called the Business Plan Act—is intended to minimize the potential for accidents involving hazardous materials and facilitate an appropriate response to possible hazardous-materials emergencies. The law (California Health and Safety Code, Division 20, Chapter 6.95, Article 1) requires businesses that use hazardous materials to provide inventories of those materials to designated emergency response agencies; to illustrate on a diagram where the materials are stored on-site; to prepare an emergency response plan; and to train employees to use the materials safely and for emergency response.

California Hazardous Materials Release Response Plans and Inventory Law of 1985

This law requires preparation of hazardous materials business plans and disclosure of hazardous materials inventories. Such plans must include an inventory of hazardous materials handled, as well as facility floor plans showing where hazardous materials are stored, an emergency response plan, and emergency response procedures that provide for employee training (California Health and Safety Code, Division 20, Chapter 6.95, Article 1). The business plan program is administered by the California Emergency Management Agency.

DTSC has primary regulatory responsibility for management of hazardous materials, and delegates authority to local jurisdictions that enter into agreements with the state. Local agencies are responsible for administering these regulations. Several state agencies, including Cal/EPA and the California Emergency Management Agency, regulate the transportation and use of hazardous materials to minimize potential risks to public health and safety. The CHP and Caltrans enforce regulations related to the transport of hazardous materials. Together, these agencies determine container types used and license haulers to transport hazardous waste on public roadways.

A business plan is required if a hazardous substance would be stored for more than 30 days in any of the following quantities:

- ▶ 500 gallons or more of any solid;
- ▶ 55 gallons or more of any liquid;

- ▶ 200 cubic feet or more of any compressed gas; or
- ▶ any acutely hazardous substance or radiological material that meets the federal threshold planning quantities listed in 40 CFR Part 355, Subpart A.

Cal/OSHA Worker Safety Requirements

The California Department of Industrial Relations, Division of Occupational Safety and Health (Cal/OSHA) assumes primary responsibility for developing and enforcing workplace safety regulations in California. Cal/OSHA regulations for the use of hazardous materials in the workplace (CCR Title 8) require safety training, available safety equipment, accident and illness prevention programs, hazardous-substance exposure warnings, and preparation of emergency action and fire prevention plans. Cal/OSHA enforces regulations on hazard communication programs and mandates specific training and information requirements. These requirements include procedures for identifying and labeling hazardous substances, providing hazard information about hazardous substances and their handling, and preparing health and safety plans to protect workers and employees at hazardous-waste sites. Employers must make material safety data sheets available to employees and document employee information and training programs.

Transportation of Hazardous Materials

State agencies with primary responsibility for enforcing federal and State regulations and responding to hazardous materials transportation emergencies are the California Highway Patrol (CHP) and the California Department of Transportation (Caltrans). Together, these agencies determine container types used and license hazardous waste haulers for hazardous waste transportation on public roads. The transport of hazardous materials is regulated under the California Vehicle Code (CCR Title 13) and can only be conducted under a registration issued by DTSC. ID numbers are issued by DTSC or EPA for tracking hazardous waste transporters and treatment, storage, and disposal facilities for hazardous materials. The ID number is used to identify the hazardous waste handler and to track waste from point of origin to final disposal, and all material transport takes place under manifest.

California Accidental Release Prevention Program

The goal of the California Accidental Release Prevention Program (CCR Title 19, Division 2, Chapter 4.5) is to reduce the likelihood and severity of consequences of any releases of extremely hazardous materials. Any business that handles regulated substances (chemicals that pose a major threat to public health and safety or the environment because they are highly toxic, flammable, or explosive, including ammonia, chlorine gas, hydrogen, nitric acid, and propane) must prepare a risk management plan. The risk management plan is a detailed engineering analysis of the potential accident factors present at a business and the measures that can be implemented to reduce this accident potential. The plan must provide safety information, hazard data, operating procedures, and training and maintenance requirements. The list of regulated substances is found in Article 8, Section 2770.5 of the program regulations.

Unified Program

Cal/EPA has adopted regulations implementing the Unified Hazardous Waste and Hazardous Materials Management Regulatory Program (Unified Program). The six program elements of the Unified Program are hazardous-waste generation and on-site treatment, underground storage tanks, aboveground storage tanks, hazardous-material release response plans and inventories, risk management and prevention programs, and

Uniform Fire Code hazardous-materials management plans and inventories. The program is implemented at the local level by a local agency, referred to as the Certified Unified Program Agency (CUPA), which is responsible for consolidating the administration of the six program elements within its jurisdiction. The Sacramento County Environmental Management Department (EMD) is the CUPA for Sacramento County.

Public Resources Code Section 65962.5 (Cortese List)

The provisions of California Government Code Section 65962.5 are commonly referred to as the “Cortese List” (after the legislator who authored the legislation that enacted it). The Cortese List is a planning document used by the State and local agencies to comply with CEQA requirements in providing information about the location of hazardous materials release sites. California Government Code Section 65962.5 requires Cal-EPA to develop an updated Cortese List annually, at minimum. DTSC and SWRCB are responsible for a portion of the information contained in the Cortese List. Other California State and local government agencies are required to provide additional hazardous material release information for the Cortese List.

Public Resources Code Section 21151.4

CEQA specifically establishes that EIRs and initial studies must evaluate projects that may result in hazardous air emissions or handle extremely hazardous substances within 1/4th of a mile of a school.

Fire Hazard Severity Zones

CEQA requires that environmental analyses consider the potential exposure of people and structures to wildland fire hazards. Public Resources Code Sections 4201–4204 and Government Code Sections 51175–51189 require the identification of fire hazard severity zones (moderate, high, and very high) based on factors such as vegetation, topography, weather, and ember production. Areas under State jurisdiction are referred to as “state responsibility areas” and response is managed by CAL FIRE. CAL FIRE maps also delineate “local responsibility areas,” which are under the jurisdiction of local entities (e.g., cities, counties).

Airport Land Use

The State regulates airports under the authority of the Airport Land Use Commission Law, Section 21670 et seq. of the California Public Utilities Code. The Airport Land Use Commission Law is implemented through individual airport land use commissions (ALUCs), which are required in every county with a public use airport or with an airport served by a scheduled airline. Under the provisions of the law, each ALUC has certain responsibilities conferred upon it and specific duties to perform. Among these are preparing airport land use plans for each of the airports within its jurisdiction (California Public Utilities Code, Sections 21674[c] and 21675[a]).

California Public Resources Code Sections 6690-6693 of Title 3 (Pesticide Use near School Sites)

Sections 6690-6693 of the California Code of Regulations applies to pesticide applications made for the production of an agricultural commodity within 1/4th mile of a school site. The regulations prohibit the application of agricultural pesticides from 6 a.m. to 6 p.m., Monday through Friday. These regulations apply to crop dusters flying over fields, air blasters spraying orchards and fumigants, and most dust and powder pesticides that could be blown onto school grounds by the wind.

In addition, these regulations require agriculture operators to provide written notification to school principals and the county agricultural commissioner of the pesticides expected to be used on an annual basis.

California Department of Education School Siting Requirements

The California Department of Education (CDE) criteria outlined in California Code of Regulations Title 5 Section 14010, “Standards for School Site Selection,” guides the location and design of schools to avoid adverse effects. CDE’s authority for approving proposed sites is contained in California Education Code Section 17251 and in Title 5, Sections 14001 through 14012 of the CCR. CDE approval is required for school districts to receive state funding for site acquisition. In addition, CDE approval requires CEQA compliance and consideration of land use issues, including preserving agricultural uses (CDE 2017).

Certain health and safety requirements for school site selection are governed by State regulations and School Facilities and Planning Division policies. These requirements are outlined in the *School Site Selection and Approval Guide* and relate to:

- ▶ proximity to airports, railroads, and major roadways;
- ▶ within 100 feet high-voltage power transmission lines (i.e., 115-kV or greater);
- ▶ presence of toxic and hazardous substances;
- ▶ hazardous facilities and hazardous air emissions within 1/4 mile;
- ▶ proximity to high-pressure natural-gas lines, propane storage facilities, gasoline lines, pressurized sewer lines, or high-pressure water pipelines;
- ▶ noise;
- ▶ results of geological studies or soil analyses;
- ▶ traffic and school bus safety; and
- ▶ safety issues related to joint-use facilities.

CDE requires that any school district that plans to purchase property using state funds must obtain a Phase I ESA evaluating the suitability of the soil on that site for use as a school. The Phase I ESA must be submitted to DTSC for review and approval before CDE will approve purchase of the site. If toxic or hazardous substances, including pesticides, naturally occurring asbestos, or other regulated hazardous materials, are found to be present, DTSC will require the school district to perform a Phase II Preliminary Endangerment Assessment to determine the level of risk and identify procedures for limiting the risk and/or cleaning up the contamination. In instances of substantial contamination, a Phase III remedial action may be required before the property is deemed safe for use as a school site.

As discussed above, a PEA was prepared in 2006 to address the potential for organochloride pesticides in soils on the within the previously proposed 10-acre school site and an additional Phase I ESA was prepared to address

expansion of the project site from 10 acres to 31.2 acres. DTSC concurred and approved the PEA on July 19, 2006 and the Phase I ESA on October 19, 2007 with a no further action determination (DTSC 2006 and 2007).

REGIONAL AND LOCAL PLANS, POLICIES, REGULATIONS, AND ORDINANCES

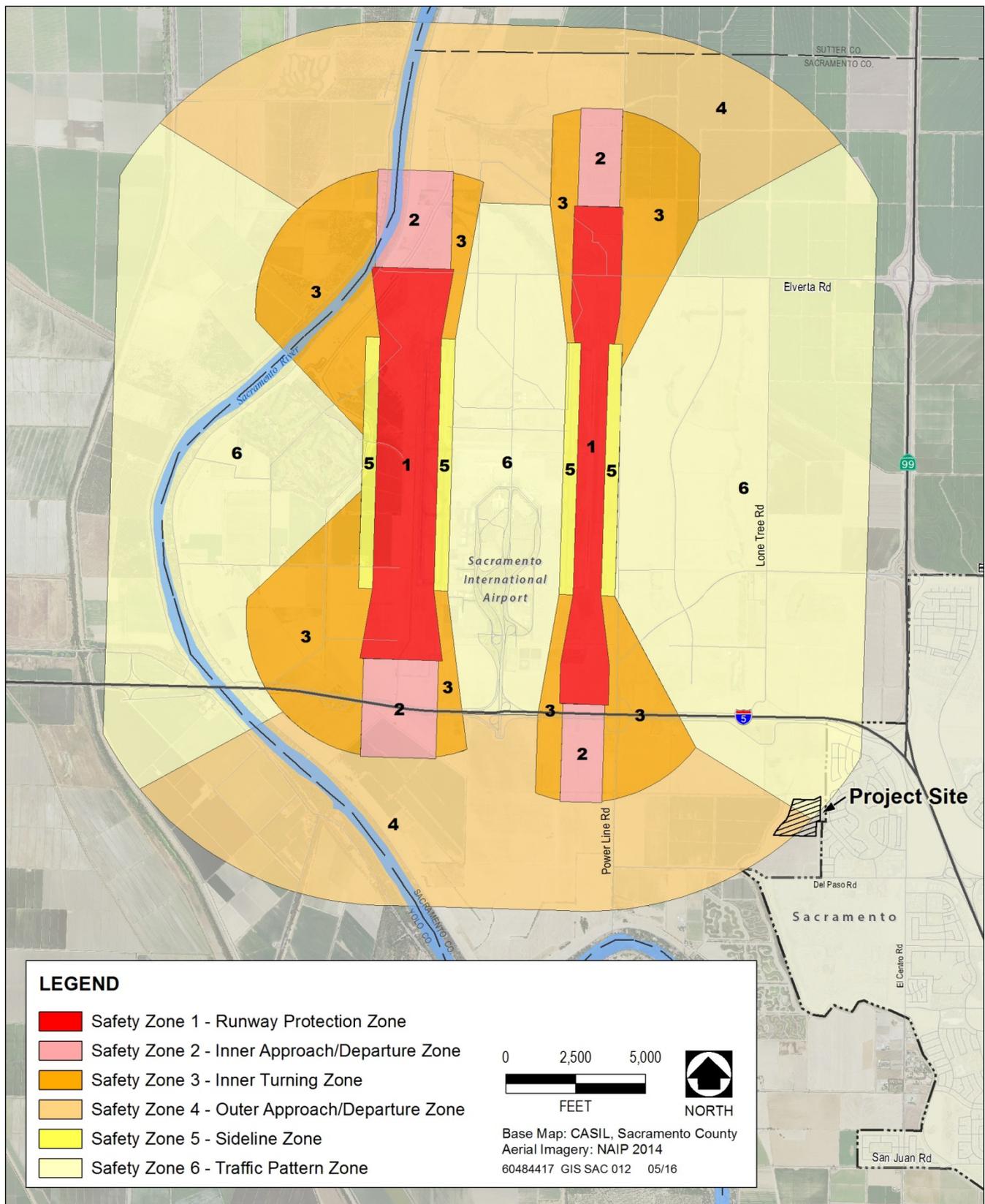
Sacramento International Airport Land Use Compatibility Plan

The Sacramento International ALUCP was adopted by SACOG in 1994 and amended in 2013. SACOG serves as the ALUC for Sacramento, Sutter, Yolo, and Yuba Counties. The ALUCP sets forth policies to promote compatibility between the airport and future land uses in the surrounding area by establishing a set of compatibility criteria that is applicable to new development. The SACOG ALUC has adopted FAR Part 77 imaginary surfaces (see “Federal Airport and Airspace Safety,” above) to determine height restrictions for natural and artificial objects. Penetration of these imaginary surfaces by permanent structures would endanger pilots and passengers of aircraft operating at the airport and would pose a hazard to persons occupying those structures.

The ALUCP considers risks both to people and property in the vicinity of an airport as well as land use characteristics that can be the cause of an aircraft accident. The project site is located within Referral Area 1. Referral Area 1 encompasses locations where noise and/or safety represent compatibility concerns. The ALUC must review the following types of land uses proposed in Referral Area 1 (SACOG 2013):

- ▶ Features, during or following construction, that would increase the attraction of birds or cause other wildlife hazards to aircraft operations at the Airport or in its environs. Such features include, but are not limited to the following:
 - open water areas,
 - sediment ponds or retention basins,
 - detention basins that hold water for more than 48 hours, and
 - artificial wetlands.
- ▶ Any proposed object (including buildings, poles, antennas, and other structures) having a height that requires review by the Federal Aviation Administration in accordance with Part 77 of the FAR.
- ▶ Any project having the potential to create electrical or visual hazards to aircraft in flight, including:
 - electrical interference with radio communications or navigational signals;
 - lighting which could be mistaken for airport lighting;
 - glare in the eyes of pilots of aircraft using the airport; and
 - impaired visibility near the airport.
- ▶ Any project having the potential to create a thermal plume extending to an altitude where aircraft fly.

With regard to airspace hazards, the ALUCP defines six airport safety zones. Airport safety zones are locations where certain types of proposed development and infrastructure and the use of flammable or hazardous materials may be restricted on the basis of safety compatibility with the airport. The project site is located within Safety Zone 4 and Safety Zone 6 (Exhibit 3.8-1). Land uses in Safety Zone 4 are subject to height limitations for airspace protection based on criteria set forth in FAR Part 77.



Source: Sacramento International Airport, Land Use Compatibility Plan, 2013 (page 91)

Exhibit 3.8-1 Airport Safety Zones

Airport land use compatibility as it pertains to land use and planning is discussed in Section 3.10, “Land Use and Planning,” and airport land use compatibility as it pertains to noise standards is discussed in Section 3.11, “Noise and Vibration,” of this EIR.

Sacramento County Environmental Management Department, Hazardous Materials Division

The Hazardous Materials Division of the Sacramento County EMD is the designated CUPA for Sacramento County. The Sacramento County EMD has a 24-hour hazardous-materials incident response team and responds to incidents involving chemical releases, as well as any other hazardous-materials situations. As the CUPA, the Hazardous Materials Division is responsible for implementing six statewide environmental programs for Sacramento County:

- ▶ Underground storage of hazardous substances (underground storage tanks)
- ▶ Hazardous materials business plan requirements
- ▶ Hazardous waste generator requirements
- ▶ California Accidental Release Prevention Program
- ▶ Uniform Fire Code hazardous-materials management plan
- ▶ Aboveground storage tanks (spill prevention control and countermeasures plan)

Sacramento County Local Hazard Mitigation Plan

The *Sacramento County Local Hazard Mitigation Plan* (Sacramento County 2016), as amended, includes a risk assessment of existing hazards such as severe weather, dam failure, flooding, earthquakes, wildfire, drought, health hazards, landslides, and volcanoes, and a mitigation strategy. The plan includes countywide recommended action items to reduce the economic effects and the loss of life and property.

Sacramento County General Plan

Although not applicable to the proposed project, the Hazardous Materials Element in the *Sacramento County 2005–2030 General Plan* (County General Plan) (Sacramento County 2011) contains specific goals and policies regarding hazardous materials that are presented here for context.

- ▶ **Policy HM-4:** The handling, storage, and transport of hazardous materials shall be conducted in a manner so as not to compromise public health and safety standards.
 - A. Continue to follow established procedures and accepted practices when dealing with all levels of hazardous materials incidents.
- ▶ **Policy HM-10:** Reduce the occurrences of hazardous material accidents and the subsequent need for incident response by developing and implementing effective prevention strategies.
- ▶ **Policy HM-11:** Protect residents and sensitive facilities from incidents which may occur during the transport of hazardous materials in the County.
 - B. Evaluate the location of sensitive facilities (schools, hospitals, etc.) and environmentally sensitive areas and identify alternative transportation routes.

3.8.3 ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

ANALYSIS METHODOLOGY

This analysis considers the range and nature of foreseeable hazardous materials use, storage, and disposal resulting from implementation of the proposed project and identifies the primary ways that these hazardous materials could expose individuals or the environment to health and safety risks. As discussed above, compliance with applicable federal, State, and local health and safety laws and regulations would generally protect the health and safety of the public.

The impact evaluation of potential exposure to contaminated soil is based on data contained in the Phase I ESA (WKA 2005), PEA (J House Environmental 2006, 2007), and updated Phase I ESA (AECOM 2015), as well as other reports that address potential safety risks and hazards.

THRESHOLDS OF SIGNIFICANCE

Based on Appendix G of the CEQA Guidelines, an impact related to hazards and hazardous materials is considered significant if the proposed project would:

- ▶ 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 or through the routine transport, use, or disposal of hazardous materials;
- ▶ emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter 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 create a significant hazard to the public or the environment;
- ▶ for a project located within an airport land use plan or within 2 miles of a public airport, result in a safety hazard for people residing or working in the project area;
- ▶ for a project located in the vicinity of a private air strip, result in a safety hazard for people residing or working in the project area;
- ▶ impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan; or
- ▶ 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 residences are intermixed with wildlands.

ISSUES NOT DISCUSSED FURTHER

Hazardous Materials Sites Compiled Pursuant to Government Code Section 65962.5—The project site is not listed on a hazardous waste and substances site list (Cortese list) pursuant to Government Code Section 65962 (DTSC 2018). This issue is not evaluated further in this EIR.

Emit Hazardous Emissions or Handle Hazardous Materials, Substances, or Waste within One-Quarter Mile of a School—The proposed project would not result in hazardous emissions or handle acutely hazardous materials (i.e., waste containing such dangerous chemicals that it could pose a threat to human health and the environment even when properly managed) within 0.25 mile of an existing school. The closest schools are the Westlake Charter School located approximately 0.5 mile southeast on Del Paso Road and the Natomas Middle School located approximately 1.2 miles to the northeast on East Commerce Way. Therefore, this issue is not addressed further.

Impair Implementation of or Physically Interfere with an Adopted Emergency Response Plan or Emergency Evacuation Plan—The proposed project would not interfere with an emergency response plan or emergency evacuation plan. Section 3.13, “Traffic and Transportation,” provides a detailed analysis of emergency access to the projects site. Therefore, this issue is not evaluated further.

IMPACT ANALYSIS

IMPACT 3.8-1 **Routine Transport, Use, or Disposal of Hazardous Materials.** *Implementation of the proposed project would involve the storage, use, and transport of hazardous materials at the project site during demolition and construction activities. Because the proposed project would be required to implement and comply with existing hazardous materials regulations, and because each of these regulations is specifically designed to protect the public health through improved procedures for the handling of hazardous materials, better technology in the equipment used to transport these materials, and a more coordinated quicker response to emergencies, impacts related to the creation of significant hazards to the public through routine, transport, use, disposal, and risk of upset would be less than significant.*

Project construction would involve the storage, use, and transport of small amounts of hazardous materials (e.g., asphalt, fuel, lubricants, paint, and other substances) on roadways, such as Del Paso Road; El Centro Road; Natomas Central Drive; and regional highways, such as Interstate 5. Regulations governing hazardous materials transport are included in California Code of Regulations Title 22, the California Vehicle Code (California Code of Regulations Title 13). The transportation of hazardous materials is also subject to applicable local, State, and federal regulations, which have been specifically designed to minimize the risk of upset during routine construction activities. State agencies with primary responsibility for enforcing federal and State regulations and responding to hazardous materials transportation emergencies consist of the California Highway Patrol and the California Department of Transportation. Together, these agencies determine container types used and license hazardous waste haulers for transportation of hazardous waste on public roads.

Construction contractors would be required to comply with California Environmental Protection Agency’s Unified Program; regulated activities would be managed by Sacramento County Department of Environmental Resources, the designated Certified Unified Program Agency for Sacramento County, in accordance with the regulations included in the Unified Program (e.g., hazardous materials release response plans and inventories, California Uniform Fire Code hazardous material management plans and inventories). Such compliance would reduce the potential for accidental release of hazardous materials during construction of the proposed project.

Operation of the school could result in use, storage, and disposal of hazardous materials. These can include, but are not limited to, laboratory chemicals (e.g., acids, bases, solvents, metals, salts) used or stored in science laboratories, industrial arts or “shop” classes (e.g., inks, degreasers), and art supplies (e.g., paints, photographic

chemicals). Hazardous materials used for facilities maintenance would include pesticides and fertilizers and maintenance supplies and equipment (e.g., drain cleaners, floor stripping products, paints, oils, fuels) (EPA 2006). Schools must comply with regulations regarding the management, transport, and disposal of hazardous waste. Hazardous wastes must be disposed of in accordance with the EPA's Resource Conservation and Recovery Act and other applicable State and local requirements (EPA 2006).

Construction and operation of the proposed project are required by law to implement and comply with existing hazardous material regulations. Each of these regulations is specifically designed to protect the public health through improved procedures for the handling of hazardous materials, better technology in the equipment used to transport these materials, and a more coordinated quicker response to emergencies. With incorporation of existing regulations, impacts related to the creation of significant hazards to the public through routine, transport, use, disposal, and risk of upset would be **less than significant**.

Mitigation Measures

No mitigation measure is required.

IMPACT 3.8-2 **Potential Human Health Hazards from Exposure to Existing On-Site Hazardous Material.** *No belowground or aboveground storage tanks, odors, soil staining, or corrosion was observed within the project site. In addition, testing for organochlorine pesticides in on-site soils indicated concentrations were below laboratory detection limits. However, unknown hazardous materials encountered during construction could create an environmental or health hazard for construction workers and later teachers, students, and visitors, if left in place. This impact would be **potentially significant**.*

AECOM searched the EPA's Envirofacts, the SWRCB's GeoTracker, and DTSC's Envirostor web sites to identify toxic releases, hazardous waste, or other violations that could affect the site. The project site is not listed in the Envirofacts database as a hazardous waste site (EPA 2018). As discussed in Section 3.8.1, "Environmental Setting," the project site is identified in the GeoTracker and EnviroStor databases as a DTSC school investigation site. Two PEAs were prepared for the project site: one PEA for the original 10-acre project site and one PEA for the additional 31.2 acres of the project site. As discussed previously, DTSC approved the PEAs for project site with a no further action determinations on July 19, 2006 and October 19, 2007.

No belowground or aboveground storage tanks, odors, soil staining, or corrosion was observed within the project site during the site visit conducted by AECOM (AECOM 2016). No other potential RECs were observed. There are no high-pressure natural gas pipelines or high-pressure water transmission mains (i.e., greater than 12 inches in diameter) within 1,500 feet of the project site. In addition, there are no high-voltage power transmission poles (i.e., 115 kV or greater) within 100 feet of the project site.

Based on its past and current agricultural use and review of previous reports prepared for portions of the project site, it was determined that the presence of organochloride pesticides could exist in site soil. The PEA prepared for the original 10-acre site included testing of soils for organochlorine pesticides and heavy metals that could have been present in fertilizers, pesticides, and herbicides used in the area. None of the soil samples contained organochlorine pesticides at concentrations above laboratory detection limits. Metals concentrations were within the range of background concentrations. The 31.2-acre expansion site completely encompassed the previously analyzed 10-acre site. Based on the previous results for the 10-acre site, the subsequent Phase I ESA prepared by J

House Environmental in 2007 concluded that the soils within the additional 31.2 acres would not contain organochlorine pesticides at concentrations above laboratory detection limits.

The Natomas Basin Conservancy's (TNBC's) Rosa East tract – directly to the west of the project site – comprises three agricultural fields totaling 106 acres that are planted with alfalfa and are part of TNBC's Fisherman's Lake Reserve. TNBC strictly controls the use of pesticides on mitigation land and rarely allows pesticides to be used (TNBC 2004). All TNBC-directed pesticide use is under the direction of licensed Pest Control Applicators and applications are made in compliance with the label restrictions approved by California Department of Pesticide Regulation and U.S. Environmental Protection Agency. In addition, TNBC does not use pesticide applications (i.e., crop dusters, air blaster spraying, chemigation sprinklers, or dust and powder pesticides) that are subject to regulations identified in Sections 6690-6693 of the California Code of Regulations (TNBC 2004). Therefore, students, employees, and visitors would not be exposed to pesticide use on TNBC lands.

Although previous site investigations did not observe hazardous materials, that does not preclude the possibility that during ground preparation and construction activities, construction workers could come in contact with, and be exposed to unknown hazardous materials that could present in soils. Any unknown hazardous materials encountered during construction could create an environmental or health hazard for construction workers and later employees, students, and visitors, if left in place. Therefore, this impact would be **potentially significant**.

Mitigation Measure: 3.8-2: Stop Work if Unknown Hazards and Hazardous Materials are Encountered during Construction, Retain a Licensed Professional to Investigate Unknown Hazards and Hazardous Materials, and Implement Required Measures, as Necessary.

If, during site preparation and construction activities, evidence of hazardous materials contamination is observed or suspected (e.g., stained or odorous soil or groundwater), construction activities shall cease immediately in the area of the find. If such contamination is observed or suspected, the contractor shall retain a qualified hazardous materials specialist to assess the site and collect and analyze soil and/or water samples, as necessary. If contaminants are identified in the samples, the contractor shall notify and consult with the appropriate federal, state, and/or local agencies. Measures to remediate contamination and protect worker health and the environment shall be implemented in accordance with federal, State, and local regulations before construction activities may resume at the site where contamination is encountered.

Significance after Mitigation

Implementation of Mitigation Measure 3.8-2 would reduce the potentially significant impacts related to exposure to hazardous materials to a **less-than-significant** level because any hazardous materials would be removed and properly disposed of by a licensed contractor in accordance with federal, State, and local regulations, which are specifically designed to protect the public from human health hazards.

IMPACT 3.8-3 Create Safety Hazards for People Near the Sacramento International Airport. *The proposed project does not include uses that could create safety hazards. The proposed site plan would not place buildings within Safety Zone 4 of the Sacramento ALUCP, and instead any buildings would be placed in Safety Zone 6, where K-12 schools are a normally compatible use. In addition, the Division of Aeronautics concluded that, based on review of existing conditions and planned development, the school site provides an appropriate level of safety suitable for a school. This impact would be less than significant.*

The Sacramento ALUCP indicates that the project site is located within the AIA and is within Referral Area 1. Land uses in Referral Area 1 are subject to height limitations for airspace protection based on criteria set forth in FAR Part 77. Furthermore, the ALUCP reviews land uses proposed in Referral Area 1 that could attract wildlife; create light or glare; or cause electronic hazards (see Section 3.8.2, “Regulatory Context” above). The project does not propose land uses that create light and glare which could be mistaken for airport lighting or visually impair pilots, and does not propose any antennas or communications facilities that could interfere with radio communications. The proposed project does not include landscape features or any other features that could attract birds. In addition, the on-site detention basin would drain within a maximum of 48 hours and would remain dry between storms consistent with FAA guidance (FAA 2007). Furthermore, buildings would be one story and not exceed 35 feet. Land use compatibility as it pertains to ALUCP policies is discussed in Section 3.10, “Land Use, Planning, Population, and Housing.” Airport land use compatibility as it pertains to noise standards is discussed in Section 3.11, “Noise and Vibration.”

In addition, the ACLUP defines six airport safety zones that identify locations where certain types of proposed development and infrastructure may be restricted on the basis of safety compatibility. The project site is located in Zone 4 and Safety Zone 6. The playing fields would be located in Safety Zone 4. SACOG considers the playing fields as “Group Recreation,” and the ALUCP conditionally allows athletic fields under this land use category (Chew, pers. comm., 2018). All buildings would be placed in Safety Zone 6 where K-12 schools are a normally compatible use.

Consistent with Section 17215 of the Educational Code, the California Department of Transportation Division of Aeronautics reviewed the proposed project. This included review of the Sacramento International ALUCP, the California Airport Land Use Planning Handbook, and other publications relating to aircraft operations at Sacramento International Airport. The Division of Aeronautics conducted an aerial inspection of the site on January 31, 2006. In addition, the Division of Aeronautics requested comments from SACOG and the Operations Manager of Sacramento International Airport, and their responses were considered in the final determination. The Division of Aeronautics concluded that based on review of existing conditions and planned development, the school site provides an appropriate level of safety suitable for a school (Miles 2006).

The proposed project does not include uses that could create safety hazards or place buildings within Safety Zone 4 of the Sacramento ALUCP. In addition, the Division of Aeronautics concluded that the school site provides an appropriate level of safety suitable for a school. Therefore, the impact associated with safety hazards for people near the Sacramento International Airport would be **less than significant**.

Mitigation Measures

No mitigation measure is required.

IMPACT 3.8-4 **Exposure of People and Structures to Wildland Fires.** *The proposed project would place school facilities adjacent to undeveloped land dominated by grasses and weeds. A fire adjacent to the project site would expose people and structures to a substantial risk. This impact would be **potentially significant**.*

School facilities would occupy 18.3 acres of the project site and would be surrounded by undeveloped land dominated by grasses and weeds. Approximately 15.6 acres of the project site would be maintained with low lying vegetation for fire abatement. In and around other school sites, the District conducts routine maintenance to keep grasses low and reduce potential fuel for fire. However, a grass fire adjacent to the project site could still expose people and structures to a substantial risk. This impact would be **potentially significant**.

Mitigation Measure 3.8-4: Demonstrate Compliance with the California Fire Code, California Building Code, and Sacramento Fire Department Requirements and Standards.

Prior to the approval of project designs and issuance of grading permits, the NUSD shall demonstrate to compliance with California Fire Code requirements and Sacramento Fire Department standards, including those related to defensible space; fuel breaks; access road length, dimensions, and finished surfaces for firefighting equipment; fire hydrant placement; and fire flow availability. The NUSD shall further demonstrate that ignition-resistant building materials have been incorporated into project designs consistent with the California Building Code. The NUSD shall keep grasses and weeds on the undeveloped portion of the property mowed to a height of 4 inches or less.

Significance after Mitigation

Implementation of Mitigation Measure 3.8-4 would reduce potentially significant impacts associated with the exposure of people and structures to wildland fires to a **less-than-significant** level by requiring the NUSD to incorporate California Fire Code requirements, California Building Code requirements, and Sacramento Fire Department standards into project designs.

3.9 HYDROLOGY AND WATER QUALITY

This section describes hydrologic, floodplain, and surface water quality conditions and processes in the vicinity of the project site. The section analyzes temporary and short-term impacts from construction activities and long-term impacts from project operation. The analysis addresses potential impacts related to stormwater runoff and stormwater drainage systems, flooding, erosion, and groundwater or surface water contamination.

3.9.1 ENVIRONMENTAL SETTING

SURFACE WATER

Drainage and Watersheds

The Sacramento River Basin encompasses approximately 26,500 square miles and is bounded by the Sierra Nevada to the east, the Coast Ranges to the west, the Cascade Range and Trinity Mountains to the north, and the Sacramento-San Joaquin Delta (Delta)/Central Sierra Nevada area to the south. Six small tributaries of the Sacramento River (Dry Creek, Magpie Creek, and Arcade Creek in the north, and Morrison Creek, Elder Creek, and Laguna Creek to the south) pass through the basin and provide drainage for the Sacramento area. Forty miles to the south, the Sacramento River joins the San Joaquin River, which drains into the Delta and San Francisco Bay.

The project site is located in the southwestern portion of the Natomas Basin, within the Sacramento River Hydrologic Basin, as defined by the California Department of Water Resources (DWR). The Natomas Basin is a low-lying area that is east of the Sacramento River and north (upstream) of its confluence with the American River. Reclamation of the Natomas Basin for agricultural development required construction of two major ditch and canal systems in the Basin: an irrigation system owned and operated by Natomas Central Mutual Water Company (NCMWC) and a drainage system owned and operated by Reclamation District (RD) 1000. NCMWC pumps water into the Natomas Basin to provide irrigation water to its shareholders for agricultural use within the Basin. During winter (October through April), drainage is primarily rainfall runoff; during summer (May through September), drainage water from agricultural fields is typically recirculated for irrigation. Because the Natomas Basin is surrounded by levees, all excess drainage within the Natomas Basin must be pumped out. In general, water is pumped into the Natomas Basin from the Sacramento River and the Natomas Cross Canal as irrigation water, and is returned to the perimeter drainage channels via RD 1000's interior drainage system.

RD 1000 was created April 8, 1911 by a Special Act of the State Legislature to provide agricultural drainage, flood control, and levee maintenance in the Natomas Basin. RD 1000 is bounded on the west by the Sacramento River, on the north by the Natomas Cross Canal, on the east by Pleasant Grove Creek and the Natomas East Main Drainage Canal/Steelhead Creek, and on the south by the American and Sacramento Rivers. RD 1000 operates and maintains a drainage system consisting of 30 miles of main drainage canals, approximately 150 miles of drainage ditches, and seven main pumping stations in the Natomas Basin. This drainage system collects stormwater runoff from both agricultural and municipal dischargers, as well as irrigation return water, and delivers the water via pumping plants for disposal in the Sacramento River.

RD 1000's West Drainage Canal is located approximately 240 feet west of the project site. This canal drains the western portion of the Natomas Basin from areas northwest of Sacramento International Airport to the confluence with the Main Drainage Canal. The Main Drainage Canal conveys the combined flows of the East and West

Drainage Canals from their confluence northwest of the I-80/I-5 interchange, through South Natomas west of I-80. Drainage water from the Main Drainage Canal is pumped into the Sacramento River approximately 4 miles southeast (downstream) of the project site, via the RD 1000 Pumping Plant No. 1. In addition, water is also pumped from the West Drainage Canal via RD 1000 Pumping Plants Nos. 3 and 5, both of which are located in the Sacramento River East Levee, west and north of the project site. Fisherman’s Lake, a natural slough, is part of the West Drainage Canal and is located approximately 240 feet west¹ of the project site and extends to the south below Del Paso Road (see Exhibit 3.9-1).

The project site is flat, with an elevation of approximately 15 feet above mean sea level. Historically, the site was flooded for cultivation of rice, and was in agricultural use for decades. The only surface water features are drainage ditches in the parcels adjacent to the project site to the north and west. A ditch to the east was an irrigation ditch that is no longer in service. The ditches were likely used to drain irrigation water back to the West Drainage Canal.

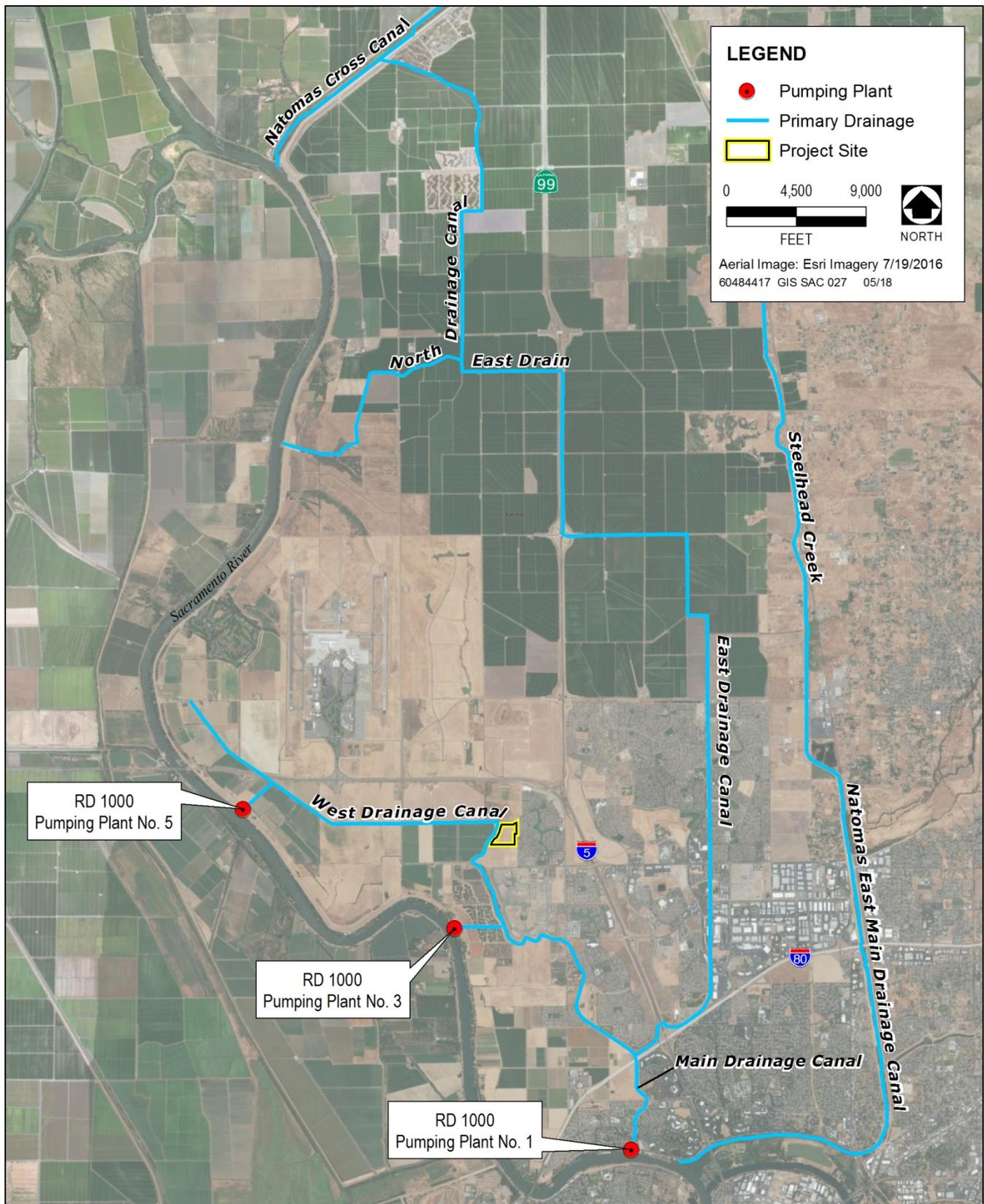
An earthen embankment that rises 4–8 feet above the ground surface is located approximately 200 feet to the east and north of the project site. The West Drainage Canal east levee is located approximately 240 feet west of the project site. The levee crown includes a gravel-surface patrol and maintenance road, which is gated at the northern and southern ends.

Water Quality

The project site does not contain any undisturbed natural stream corridors. The surface water resource nearest to the project site is RD 1000’s West Drainage Canal, which parallels the site to the northwest and west. RD 1000’s West Drainage Canal, East Drainage Canal, and Main Drainage Canal are considered agricultural drainages and therefore are not included in the Clean Water Act (CWA) Section 303(d) list of impaired waterbodies. However, municipal stormwater discharges into these canals are regulated by RD 1000, and are regulated by the City and County of Sacramento under the Sacramento Areawide National Pollutant Discharge Elimination System (NPDES) MS4 permit (discussed below in Subsection 3.9.2, “Regulatory Context”).

The Sacramento River is the receiving water body for drainage from most of the Natomas Basin. “Receiving waters” is a general term typically used to describe any surface water body, such as a creek, river, lake, bay, or ocean that receives runoff. Water quality in the Sacramento River is regulated primarily by the Central Valley Regional Water Quality Control Board (CVRWQCB), which has established narrative and numeric standards for the Sacramento River in its *Water Quality Control Plan for the Sacramento River and San Joaquin River Basins* (Basin Plan) (CVRWQCB 2016). The Basin Plan designates beneficial uses for Sacramento River water from the Colusa Basin Drain to the I Street Bridge that consist of municipal and domestic supply, agricultural irrigation, contact and non-contact recreation, warm and cold freshwater habitat, warm and cold migration, warm and cold spawning, wildlife habitat, and navigation. The Sacramento River from Knight’s Landing to the Delta is on the CWA Section 303(d) list of impaired water bodies for chlordane, dichlorodiphenyltrichloroethane (DDT), dieldrin, mercury, polychlorinated biphenyls (PCBs), and toxicity. Total Maximum Daily Loads (TMDLs) have been developed and are in place (CVRWQCB 2018).

¹ This measurement considers Fisherman’s Lake to encompass the whole area south of Del Paso Road and the area west of the project site up to the point where the West Drainage Canal changes direction and turns west. In this area, this feature could be considered both Fisherman’s Lake and the West Drainage Canal.



Source: RD 1000, 2016b

Exhibit 3.9-1 Selected RD 1000 Drainage System Facilities in the Natomas Basin

Erosion Potential

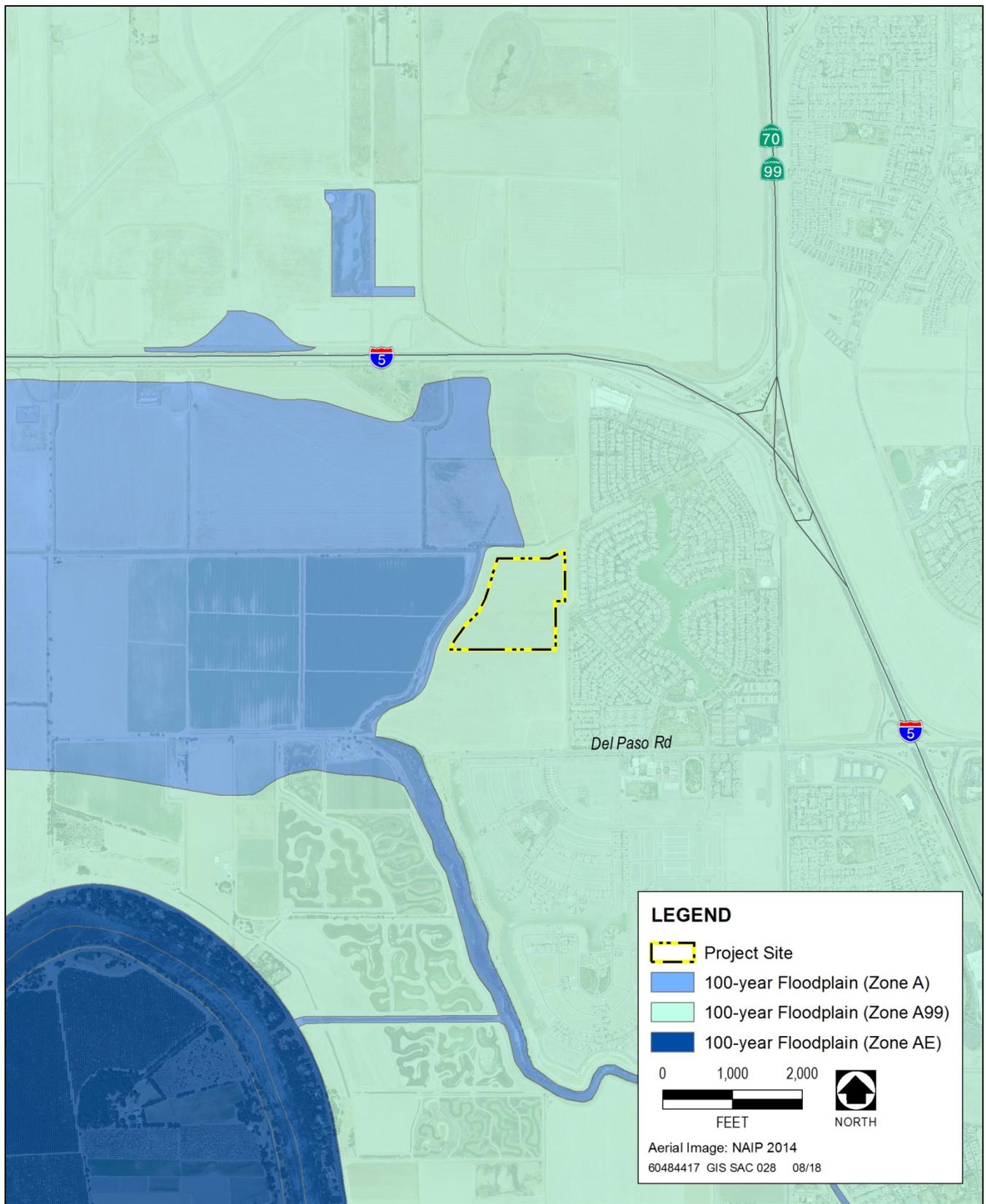
The project site and the proposed access road are composed of the Clear Lake clay (drained), Jacktone clay, and San Joaquin-Galt complex soil types (Natural Resources Conservation Service [NRCS] 2017). Most soils can be categorized into hydrologic soil groups (which apply only to surface soil layers) based on runoff-producing characteristics. Hydrologic soil groups are factored into calculations of erosion potential when drainage plans are prepared. The Clear Lake clay soil type, which comprises approximately one-third of the project site, is classified by NRCS as Group C—soils that have a slow infiltration rate when thoroughly wet and therefore a high runoff potential. Group C soils have a layer that impedes the downward movement of water or are composed of soils with a moderately fine or fine texture. The Jacktone clay and San Joaquin-Galt complex soils, which comprise approximately two-thirds of the project site, are classified by NRCS as Group D—soils that have a very slow infiltration rate when thoroughly wet. The Group D soils on the project site have a high clay content that results in a very slow rate of water transmission, and therefore a very high runoff potential.

Flooding

Major storm events can produce high flows throughout the Sacramento and American River systems. Flood control facilities along these rivers consist of a comprehensive system of dams, levees, overflow weirs (diversion structures intended to regulate the maximum flow capacity of a river), drainage pumping plants, and flood control bypass channels. Such facilities control flood flows by regulating the amount of water passing through a particular reach of the river. The volume of water flowing past the levee system that protects Sacramento from flooding is controlled by the reserve overflow area of the Yolo Bypass on the Sacramento River west of the project site, and by Folsom Dam on the American River.

The project site is situated in the Natomas Basin, which covers 81 square miles and includes 42 miles of levees maintained by RD 1000. The levees are inspected, maintained, and repaired by RD 1000 on a regular basis throughout the year and are patrolled continuously during periods of high water to safeguard against failure.

In December 2008, the Federal Emergency Management Agency (FEMA) determined that levees in the Natomas area were not sufficient to protect the area from flooding and changed the area's flood zone designation to AE, which corresponds to the 100-year (0.01 annual exceedance probability [AEP]) floodplain. In the following years, the needed levee improvements were completed by the Sacramento Area Flood Control Agency (SAFCA), which was formed in 1989 to address the Sacramento area's vulnerability to flooding. SAFCA was formed through a Joint Exercise of Powers Agreement between RD 1000, the City of Sacramento, the County of Sacramento, the County of Sutter, and the American River Flood Control District. Between approximately 2007 and 2015, SAFCA completed substantial levee improvements along the Sacramento River east levee and Natomas Cross Canal and on June 16, 2015, the U.S. Army Corps of Engineers (USACE) recertified the Natomas Basin levees, allowing FEMA to improve the area's flood zone designation to A99 (see Exhibit 3.9-2), and allowing permitting of new structures. The A99 Zone designation means that FEMA has made an adequate progress determination, allowing permitting and construction of new structures in advance of the completion of flood protection improvements.



Source: FEMA 2015

Exhibit 3.9-2 FEMA Floodplain Designations

SAFCA's long-term goal is to work with the USACE's Sacramento District and the Central Valley Flood Protection Board (CVFPB) to provide areas protected by the Sacramento River Flood Control Project (SRFCP) with protection against the 200-year storm (0.005 AEP). The SRFCP is an integrated system of levees, overflow bypass channels, and dams that was designed and constructed by federal, State, and local interests over several decades to protect farmlands, towns, and cities in the Sacramento Valley from large floods. SAFCA is planning to achieve this flood protection level by completing Phases 1, 2, 3, 4a, and 4b of the Natomas Levee Improvement Program (NLIP) and USACE's Natomas Basin Project. Construction of Phases 1 and 2 are complete. Phase 3 construction along the Sacramento River east levee is largely complete; however, the USACE plans to complete work along the Pleasant Grove Creek Canal in 2021 and part of the Natomas East Main Drainage Canal in 2018. Phase 4a was initiated by SAFCA between 2010 and 2014 and will be completed by USACE.

Construction of the NLIP Phase 4b project on the Pleasant Grove Creek Canal, Natomas East Main Drainage Canal, West Drainage Canal, and the American River is scheduled for completion in 2025. The NLIP Phase 4b project includes improvements to the West Drainage Canal from a point south of I-5 and approximately 2.5 miles west of the project site, to the point where the canal turns southward approximately 240 feet west of the project site. The West Drainage Canal improvements would be designed to provide the following benefits (USACE and SAFCA 2010):

- ▶ lessen the canal's potential as a wildlife attraction hazard for Airport operations by relocating the western portion of the canal farther away from the airport operations area;
- ▶ reduce bank erosion and associated water quality problems caused by the canal's excessively steep sides;
- ▶ improve RD 1000's access to maintain the canal by providing expanded rights-of-way for O&M corridors;
- ▶ reduce the build-up of aquatic weeds, which require regular removal to avoid loss of channel conveyance capacity; and
- ▶ improve the continuity of the canal corridor for movement of giant garter snake between Fisherman's Lake managed wetlands and other managed wetlands and rice fields in the northern part of the Natomas Basin by creating a shoreline band of giant garter snake habitat, a key element of the NLIP conservation strategy.

GROUNDWATER

The Natomas Basin is located within the North American Groundwater Subbasin (No. 5-21.64) of the Sacramento Valley Groundwater Basin, as delineated in DWR Bulletin 118, *California's Groundwater* (DWR 2016). The project site is not located in a critically over-drafted groundwater basin or subbasin (DWR 2016).

Water-bearing materials in the North American Subbasin are dominated by unconsolidated continental deposits including Miocene/Pliocene volcanics, older alluvium, and younger alluvium. The upper unconfined aquifer system, occupying the upper 200–300 feet below ground surface, is comprised of alluvium. The lower aquifer system, occurring generally deeper than 300 feet towards the west side of the subbasin, is comprised of the Mehrten and older geologic formations. The cumulative depth of these deposits along the western margin of the subbasin (in the vicinity of the project site), is over 2,000 feet. Most of the groundwater is produced in the northern portion of the subbasin (DWR 2006).

In the Natomas Basin, groundwater levels vary seasonally with precipitation and runoff in this area and may rise closer to the ground surface during wet years. In addition, groundwater levels are influenced locally by pumping, as the groundwater is withdrawn regularly during spring and summer for irrigation, and throughout the year for general use by most of the local growers; as a result, groundwater is generally higher in March and lower in October. Regional groundwater flow direction can be affected, at least temporarily, by agricultural groundwater pumping, time of year, and stage fluctuation of local creeks, drainage canals, and the nearby Sacramento River. Groundwater levels in the vicinity of the project site range from 10 to 20 feet below the ground surface (bgs) (DWR 2017).

An area along the Sacramento River extending from Sacramento International Airport northward to the Bear River has been found to have high levels of Total Dissolved Solids (TDS), chloride, sodium, bicarbonate, manganese, and arsenic. However, the groundwater in the southern part of the groundwater subbasin is otherwise generally characterized as good quality (DWR 2006).

3.9.2 REGULATORY CONTEXT

FEDERAL PLANS, POLICIES, REGULATIONS, AND LAWS

Clean Water Act

The U.S. Environmental Protection Agency (EPA) is the lead federal agency responsible for managing water quality. The Clean Water Act of 1972 is the primary federal law that governs and authorizes EPA and the states to implement activities to control water quality. The various elements of the CWA that address water quality and are applicable to the proposed project are discussed below. Wetland protection elements administered by USACE under the CWA, including permits to dredge or fill wetlands, are discussed in Section 3.4, “Biological Resources.”

Sections 303 and 304(a)—Beneficial Uses and Water Quality Criteria and Standards

Section 303 of the CWA requires states to adopt water quality Standards for all surface waters of the U.S. Standards are based on the designated beneficial use(s) of the surface water body. In situations where multiple beneficial uses exist, the water quality standards that protect the most sensitive use are applied. As defined by the CWA, water quality standards consist of two elements: (1) designated beneficial uses of the water body in question, and (2) criteria that protect the designated uses. Beneficial uses serve as a basis for establishing water quality objectives and discharge limits and are designated in the Basin Plan for surface waters and groundwater basins.

Section 304(a) of the CWA requires EPA to publish advisory water quality criteria reflecting the latest scientific knowledge on the kind and extent of 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. EPA has designated to the State of California the authority to implement and oversee most programs authorized or adopted for CWA compliance through the Porter-Cologne Water Quality Control Act (discussed below).

Section 303(d)—Impaired Water Bodies and Total Maximum Daily Loads

CWA Section 303(d) requires states to identify waters where the permit standards, any other enforceable limits, or adopted water quality standards are still unattained. The law requires states to develop TMDLs to improve the

water quality of impaired water bodies. TMDLs are the quantities of pollutants that can be safely assimilated by a water body without violating water quality standards. TMDLs are developed for impaired water bodies to maintain beneficial uses, achieve water quality objectives, and reduce the potential for future water quality degradation. NPDES permits for water discharges must take into account the pollutants for which a water body is listed as impaired.

Section 402—National Pollutant Discharge Elimination System Permit Program

Section 402 of the CWA requires that certain types of construction activity comply with the regulations of the NPDES stormwater program. The NPDES permit program was established in the CWA to regulate municipal and industrial discharges to surface waters of the U.S. A discharge from any point source is unlawful unless the discharge is in compliance with an NPDES permit. Federal NPDES permit regulations have been established for broad categories of discharges, including point-source municipal waste discharges and nonpoint-source stormwater runoff. NPDES permits generally identify effluent and receiving water limits on allowable concentrations and/or mass emissions of pollutants contained in the discharge; prohibitions on discharges not specifically allowed under the permit; and provisions that describe required actions by the discharger, including industrial pretreatment, pollution prevention, self-monitoring, and other activities.

In November 1990, EPA published regulations establishing NPDES permit requirements for municipal and industrial stormwater discharges. Phase 1 of the permitting program applied to municipal discharges of stormwater in urban areas where the population exceeded 100,000 persons. Phase 1 also applied to stormwater discharges from a large variety of industrial activities, including general construction activity if the project would disturb more than 5 acres. Phase 2 of the NPDES stormwater permit regulations, which became effective in March 2003, required that NPDES permits be issued for construction activity for projects that disturb 1 acre or more. Phase 2 of the municipal permit system (known as the NPDES General Permit for Small Municipal Separate Storm Sewer Systems [MS4s]) required small municipal areas of less than 100,000 persons to develop stormwater management programs. The nine Regional Water Quality Control Boards (RWQCBs) in California are responsible for implementing the NPDES permit system (see additional information below).

Federal Antidegradation Policy

The federal Antidegradation Policy, established in 1968, is designed to protect existing uses, water quality, and national water resources. The federal policy directs states to adopt a statewide policy that includes the following primary provisions (40 Code of Federal Regulations [CFR] 131.12):

- ▶ Existing instream 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 propagation of fish, shellfish, and wildlife and recreation in and on the water, 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.
- ▶ 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.

Federal Emergency Management Agency

FEMA administers the National Flood Insurance Program to provide subsidized flood insurance to communities that comply with FEMA regulations that limit development in floodplains. FEMA also issues Flood Insurance Rate Maps (FIRMs) that identify which land areas are subject to flooding. These maps provide flood information and identify flood hazard zones in the community. The design standard for flood protection covered by the FIRMs is established by FEMA, with the minimum level of flood protection for new development determined to be the 1-in-100 (i.e., 0.01 AEP 100-year flood event). As developments are proposed and constructed FEMA is also responsible for issuing revisions to FIRMs, such as Conditional Letters of Map Revision (CLOMR) and Letters of Map Revision (LOMR) through the local agencies that work with the National Flood Insurance Program. Requirements of California Senate Bill (SB) 5 regarding the 200-year flood (i.e. the 1-in-200 [0.005 AEP]) are discussed below.

STATE PLANS, POLICIES, REGULATIONS, AND LAWS

Porter-Cologne Water Quality Control Act

California's surface water quality is regulated under the Porter-Cologne Water Quality Control Act (Porter-Cologne Act) (California Water Code, Division 7). This law established the State Water Resources Control Board (SWRCB) and the nine RWQCBs. As described above, EPA has delegated the discharge-permitting provisions of the federal CWA to the SWRCB and RWQCBs. The RWQCBs, therefore, have regulatory authority over construction in waters of the U.S. and waters of the state, including activities in wetlands, under both the CWA and the Porter-Cologne Act.

The Porter-Cologne Act requires the SWRCB and RWQCBs to develop water quality policies, plans, and objectives to protect state waters. The act also requires the RWQCBs to periodically update basin plans to define beneficial uses, water quality objectives, and implementation programs. In addition, the Porter-Cologne Act requires dischargers to notify the RWQCB by filing a report of waste discharge and authorizes the SWRCB and RWQCBs to issue and enforce Waste Discharge Requirements (WDRs), NPDES permits, Section 401 water quality certifications, and other approvals. The RWQCBs also issue WDRs for broad categories of "low threat" discharges that have minimal potential for adverse water quality effects when implemented according to prescribed terms and conditions.

The CVRWQCB Basin Plan outlines water quality attainment strategies, including TMDLs, where necessary and appropriate to ensure attainment and maintenance of water quality standards. The Basin Plan also outlines the Antidegradation Policy (Resolution No. 68-16, "Statement of Policy with Respect to Maintaining High Quality of Waters in California"). Adopted in 1968, this policy requires continued maintenance of existing high-quality waters. It provides conditions under which a change in water quality is allowable.

Under the Porter-Cologne Act, the SWRCB and RWQCBs have developed several general permits for construction stormwater, dewatering discharges, and industrial stormwater, as described below.

NPDES Permit System and Waste Discharge Requirements for Construction

The SWRCB and CVRWQCB have adopted specific NPDES permits for a variety of activities that have the potential to discharge wastes to waters of the state. The SWRCB's statewide stormwater general permit for construction activity (Order 2009-009-DWQ as amended by Order No. 2012-0006-DWQ) is applicable to all

land-disturbing construction activities that would disturb 1 acre or more. The CVRWQCB's general NPDES permit for construction dewatering activity (Order No. R5-2013-0074) authorizes direct discharges to surface waters up to 250,000 gallons per day for no more than a 4-month period each year. All of the NPDES permits involve similar processes, which include submitting a Notice of Intent (NOI) to CVRWQCB and implementing Stormwater Pollution Prevention Plans (SWPPPs) that include BMPs to minimize those discharges. CRWQCB Resolution R5-2003-0008 identifies activities subject to waivers of WDRs, including minor dredging activities and minor construction dewatering activities that discharge to land.

Construction activities subject to the general construction activity permit include clearing, grading, stockpiling, and excavation. Dischargers are required to eliminate or reduce non-stormwater discharges to storm sewer systems and other waters. The permit also requires dischargers to consider using permanent post-construction BMPs that would remain in service to protect water quality throughout the life of the project. All NPDES permits also have inspection, monitoring, and reporting requirements.

In addition, CVRWQCB requires water quality sampling if the activity could result in the discharge of turbidity or sediment to a water body that is listed as impaired under CWA Section 303(d) because of sediment or siltation, or if a release of a nonvisible contaminant occurs. Where such pollutants are known or should be known to be present and have the potential to contact runoff, sampling and analysis is required.

The applicant for a Construction General Permit must prepare and implement a SWPPP. The SWPPP must include a site map and description of construction activities, and must identify BMPs that would be employed to prevent soil erosion and discharge of other construction-related pollutants (e.g., petroleum products, solvents, paints, and cement) that could contaminate nearby water resources. Examples of construction BMPs typically included in SWPPPs include using temporary mulching, seeding, or other suitable stabilization measures to protect uncovered soils; storing materials and equipment to ensure that spills or leaks cannot enter the storm drain system or surface water; developing and implementing a spill prevention and cleanup plan; and installing sediment-control devices such as gravel bags, inlet filters, fiber rolls, or silt fences to reduce or eliminate sediment and other pollutant discharges to drainage systems or receiving waters.

NPDES Municipal Storm Water Permitting Program

The SWRCB's Municipal Storm Water Permitting Program regulates stormwater discharges from MS4s. An MS4 is defined by the EPA in 40 CFR 122.26(b)(8) as:

...a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains): (i) designed or used for collecting or conveying storm water; (ii) which is not a combined sewer; and (iii) which is not part of a Publicly Owned Treatment Works (POTW) as defined at 40 CFR 122.2.

MS4 permits require the discharger to develop and implement a stormwater management plan with the goal of reducing the discharge of pollutants to the maximum extent practicable (MEP). "Maximum extent practicable" is the performance standard specified in Section 402(p) of the CWA. The management plans specify what BMPs will be used to address certain program areas—namely, public education and outreach, detection and elimination of illicit discharges, construction and post-construction, and municipal operations. Permit applicants are required to prepare and implement a SWPPP that describes the site; erosion and sediment controls; means of waste

disposal; implementation of local plans; control of post-construction sediment and erosion control measures and maintenance responsibilities; and non-stormwater management control.

California Toxics Rule and State Implementation Policy, 40 CFR 131.48

The California Toxics Rule (CTR) was adopted in 2000 in response to requirements of the EPA National Toxics Rule (NTR) and establishes numeric water quality criteria for approximately 130 priority pollutant trace metals and organic compounds. The CTR criteria are regulatory criteria adopted for inland surface waters, enclosed bays, and estuaries in California that are on the CWA Section 303(c) listing for contaminants. The CTR includes criteria for the protection of aquatic life and human health. Human health criteria (water and organism based) apply to all waters with a Municipal and Domestic Water Supply Beneficial Use designation as indicated in the basin plans. The Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California, also known as the State Implementation Plan (SIP), was adopted by the SWRCB in 2000. The SIP establishes provisions for translating CTR criteria, NTR criteria, and basin plan water quality objectives for toxic pollutants into NPDES permit effluent limits and effluent compliance determinations.

Senate Bill 5

SB 5, signed into law on October 10, 2007, enacted the Central Valley Flood Protection Act of 2008. As required by SB 5, DWR and CVFPB prepared and adopted the Central Valley Flood Protection Plan (CVFPP) (described below). The CVFPB is also working with State and local flood protection agencies to establish 200-year (0.005 AEP) protection as the minimum urban level of flood protection.

SB 5 prohibits local governments from entering development agreements or approving entitlements or permits, including ministerial permits resulting in construction of a new residence in a flood hazard zone, that would result in construction of a new residence in a flood zone unless one of three conditions are met:

- ▶ flood management facilities provide level of protection necessary to withstand 200-year flood event (0.005 AEP);
- ▶ the development agreement or other entitlements include conditions that provide protections necessary to withstand 200-year flood event (0.005 AEP); or
- ▶ the local flood management agency has made adequate progress on construction of a flood protection system that shall result in protections necessary to withstand 200-year flood event (0.005 AEP) by 2025.

Central Valley Flood Protection Plan

The *2012 Central Valley Flood Protection Plan* was a requirement of the Central Valley Flood Protection Act of 2008 (California Water Code Sections 9600-9603) that required DWR to develop a document that describes a sustainable, integrated flood management plan that proposes a long-term, systemwide investment approach in areas of the Central Valley currently receiving protection from facilities of the State Plan of Flood Control. DWR develops strategic goals, and near- and long-term actions, to conserve, manage, develop, and sustain California's watersheds and water resources, and works to prevent and respond to floods, droughts, and catastrophic events that would threaten public safety, water resources and management systems, the environment, and property. The Central Valley Flood Management Planning (CVFMP) Program provided the structure for the successful development and adoption of the CVFPP. CVFMP is now assisting in the planning and coordination of major

implementation actions of the CVFPP, including State-led Basinwide Feasibility Studies (BWFS), locally led regional flood management planning, and the Central Valley Flood System Conservation Strategy. These planning efforts have been incorporated into the 2017 CVFPP Update, which was adopted in August 2017.

Urban Levee Design Criteria

California Government Code Sections 65865.5, 65962, and 66474.5 require that levees and floodwalls in the Sacramento-San Joaquin Valley provide protection against a 200-year flood event (0.005 AEP). The Urban Levee Design Criteria (ULDC) prepared by DWR (DWR 2012) provides engineering criteria and guidance for civil engineers in meeting the government code requirements, and offers this same guidance to civil engineers working on levees and floodwalls anywhere in California. The ULDC also provides engineering criteria and guidance for DWR's urban levee evaluations and participation in urban levee projects.

REGIONAL AND LOCAL PLANS, POLICIES, REGULATIONS, AND ORDINANCES

Sacramento County General Plan

The *Sacramento County General Plan of 2005–2030* (Sacramento County 2017) Conservation and Safety Elements identify the following policies that, while they do not apply to the project, provide relevant context.

Conservation Element

- ▶ **Policy CO-24:** Comply with the Sacramento Areawide National Pollutant Discharge Elimination System Municipal Stormwater Permit (NPDES Municipal Permit) or subsequent permits, issued by the Central Valley Regional Water Quality Control Board (Regional Board) to the County, and the Cities of Sacramento, Elk Grove, Citrus Heights, Folsom, Rancho Cordova, and Galt (collectively known as the Sacramento Stormwater Quality Partnership [SSQP]).
- ▶ **Policy CO-26:** Protect areas susceptible to erosion, natural water bodies, and natural drainage systems.
- ▶ **Policy CO-28:** Comply with other water quality regulations and NPDES permits as they apply to County projects or activities, such as the State's Construction General Permit and Aquatic Pesticides Permit.
- ▶ **Policy CO-30:** Require development projects to comply with the County's stormwater development/design standards, including hydromodification management and low impact development standards, established pursuant to the NPDES Municipal Permit. Low impact development design and associated landscaping may serve multiple purposes including reduction of water demand, retention of runoff, reduced flooding and enhanced groundwater recharge.
- ▶ **Policy CO-31:** Require property owners to maintain all required stormwater measures to ensure proper performance for the life of the project.

Conservation Element

- ▶ **Policy SA-10:** Fill within the 100-year floodplain of creeks outside of the Urban Service Boundary is permissible to accommodate structures (e.g., residential, commercial, accessory) and septic systems, and only when the Board of Supervisors finds that the fill will not impede water flows or storm runoff capacity. Such development shall not cause an increase in base flood elevation of the 100-year floodplain exceeding 0.10

feet, unless analysis clearly indicated that the physical and/or economic use of adjacent property within the floodplain will not be adversely affected. A permit is required if the fill is within the jurisdiction of the Central Valley Flood Protection Board.

- ▶ **Policy SA-11:** The County shall implement the improvement of natural drainage channels and certain floodplains for urbanized or urbanizing portions of the County to reduce local flooding. Such improvements shall comply with the General Plan policies contained in the Conservation Element, Urban Streams, and Channel Modification Section.
- ▶ **Policy SA-13:** Where new upstream development in Sacramento County will increase or potentially impact runoff onto parcels downstream in a neighboring jurisdiction, such as the City of Sacramento, Sacramento County will coordinate with the appropriate neighboring jurisdiction to mitigate such impacts.
- ▶ **Policy SA-14:** The County shall require, when deemed to be physically or ecologically necessary, all new urban development and redevelopment projects to incorporate runoff control measures to minimize peak flows of runoff and/or assist in financing or otherwise implementing Comprehensive Drainage Plans.
- ▶ **Policy SA-22a:** Sacramento County will evaluate development projects and all new construction located within a defined Flood Hazard Zone (FHZ) to determine whether the 200-year Urban Level of Flood Protection or 100-year FEMA flood protection applies, and whether the proposed development or new construction is consistent with that standard. Prior to approval of development projects or new construction subject to either standard, the appropriate authority must make specific finding(s) related to the following:
 - a. Urban Level of Flood Protection standard (200-year) applies to projects in a Flood Hazard Zone that meet certain criteria, developed by the State of California Department of Water Resources, related to urbanization, watershed size and potential flood depth.
 - b. Federal Emergency Management Agency (FEMA) standard of protection (100-year) applies to projects in a Special Flood Hazard Area that are not subject to the Urban Level of Flood Protection.
- ▶ **Policy SA-22b:** New development shall be elevated as required by the applicable flood standards (100-year, or 200-year in areas subject to the Urban Level of Flood Protection) and should be constructed to be resistant to flood damage consistent with the Floodplain Management Ordinance.

Sacramento County Municipal Code

Sacramento County's Stormwater Ordinance (Sacramento County Municipal Code Chapter 15.12) prohibits the discharge of unauthorized non-stormwater to the County's stormwater conveyance system and local creeks. Non-stormwater refers to the prohibition on disposing of extra paint, oils, or other such materials into the stormwater system, as well as wash-water. It applies to all private and public projects in the County, regardless of size or land use type.

The County's Floodplain Management Ordinance (Sacramento County Zoning Code, SZC-2014-0007) describes the types of development activities are allowed and how proposed development may be permitted in floodplains. All proposed development activity in floodplains, defined as those areas designated by FEMA on the FIRMs for Sacramento County (Community Number 060262) and other areas subject to flooding, must be reviewed and

permitted by the county's Floodplain Administrator before construction. All new construction or substantial improvements within special flood hazard areas and local flood hazard areas must comply with the construction standards set forth in Chapter 6 of the Floodplain Management Ordinance.

Sacramento City/County Drainage Manual Hydrology Standards

The *Sacramento City/County Drainage Manual* (2006) was developed jointly by the Sacramento County Water Resources Division and the City of Sacramento Department of Utilities Division of Engineering Services. Volume 2, Hydrology Standards, presents the accepted methods for estimating surface water runoff peak flows and volumes for the analysis and design of drainage facilities in the City and County of Sacramento.

Sacramento County Local Hazard Mitigation Plan

The Sacramento County Local Hazard Mitigation Plan (LHMP) (Sacramento County 2016) is designed to meet the requirements of the Disaster Mitigation Act of 2000, which allows eligibility for certain hazard mitigation (i.e., disaster loss reduction) programs under FEMA. Formulation of the LHMP was based on hazard identification and a risk assessment of potential natural hazards that could affect Sacramento County, a review of the County's capability to reduce hazards impacts, and recommendations to further reduce vulnerability to potential disasters. The LHMP includes emergency management provisions for flood hazards, such as a levee breach or dam failure.

Reclamation District 1000 Drainage Requirements

New development within the Natomas Basin is required to mitigate impacts to the RD 1000 drainage and flood control system. Upon review of the improvement plans by RD 1000, and through coordination with each of the land use jurisdictions in the Natomas Basin, new development is required to enter into drainage improvement agreements that define the facilities necessary to limit peak discharge into the RD 1000 drainage system, maintain current canal stages for the 100-year and 200-year events in the interior drainage system per ULDC standards, and to meet other site-specific requirements (RD 1000 2016a).

Sacramento County and City of Rancho Cordova Phase I NPDES MS4 Permit

The project site is outside the boundaries of the Sacramento Areawide NPDES MS4 Permit. The information below related to these permit requirements is presented for context only.

Sacramento County and the Cities of Rancho Cordova, Folsom, Elk Grove, Citrus Heights, Galt, and Sacramento are co-permittees to the Sacramento Areawide NPDES MS4 permit issued and enforced by CVRWQCB (NPDES Permit No. CAS082597, WDR Order No. R5-2008-0142). The permittees formed the SSQP, to coordinate and implement permit compliance activities. A Stormwater Quality Improvement Plan (SQIP) developed for compliance with the NPDES permit is the guiding document for the permittees (SSQP 2009) and describes the activities that will be implemented to reduce pollutant discharges in urban runoff to the maximum extent practicable.

The SSQP subsequently prepared a Hydromodification Management Plan (SSQP 2013) that describes how the agencies intend to implement hydromodification management in accordance with the MS4 permit to protect receiving streams from increased potential for erosion and other adverse impacts. The *Sacramento Region Stormwater Quality Design Manual* (Stormwater Quality Design Manual) (SSQP 2017) includes the principles set

forth in the Hydromodification Management Plan and is currently the guiding technical design document for development and major redevelopment in the Sacramento region. Post-construction stormwater quality controls for new development require the use of control measures set forth in the Stormwater Quality Design Manual. This includes sizing and design criteria for regional detention basins and design and maintenance criteria for on-site stormwater quality source, treatment, and runoff reduction measures.

3.9.3 IMPACT ASSESSMENT

ANALYSIS METHODOLOGY

Impacts associated with drainage, hydrology, and water quality that could result from construction and operational activities related to buildout of the proposed project were evaluated based on expected construction practices, the materials used, and the duration of the activities. The effects of the proposed project were compared to environmental baseline conditions (i.e., existing conditions) to determine the duration and magnitude of adverse impacts.

Impacts related to water supply are addressed in Section 3.14, “Utilities and Service Systems.”

THRESHOLDS OF SIGNIFICANCE

Based on Appendix G of the CEQA Guidelines, the proposed project would have a significant impact related to hydrology and water quality if it would:

- ▶ violate any water quality standards or waste discharge requirements;
- ▶ substantially deplete groundwater supplies or interfere with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of preexisting nearby wells would drop to a level that would not support current land uses or planned uses for which permits have been granted);
- ▶ 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 that would result in substantial erosion or siltation on or off the 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 enough to result in flooding on- or off-site;
- ▶ create or contribute runoff water that would exceed the capacity of existing or planned stormwater 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 authoritative flood hazard delineation map;
- ▶ place within a 100-year flood hazard area structures that would impede or redirect flood flows;

- ▶ 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; or
- ▶ expose people or structures to a significant risk of loss, injury, or death involving inundation by seiche, tsunami, or mudflow.

ISSUES NOT CONSIDERED FURTHER IN THIS EIR

Place Housing within a 100-Year Flood Hazard Area—The project does not propose housing. Therefore, no impact would occur and this issue is not evaluated further.

Inundation by Seiche, Tsunami, Or Mudflow—Because of the distance of the project site from water bodies, the site would not be expected to be affected by coastal flooding hazards, including tsunami, extreme high tides, or sea level rise. There are no surface water bodies in the vicinity of the project site that could generate damaging seiches (waves generated within enclosed surface water bodies); therefore, no effects are expected. In addition, the project site is relatively flat and no effects related to mudflows would occur. There would be no impact related to seiche, tsunami, or mudflow and these issues are not evaluated further.

3.9.4 ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

IMPACT 3.9-1 Violate any Water Quality Standards or Waste Discharge Requirements. *Project-related construction activities would involve grading and movement of earth, which would substantially alter on-site drainage patterns and could generate sediment, erosion, and other nonpoint source pollutants in on-site stormwater that could drain to off-site areas and degrade local water quality. In addition, due to the shallow on-site groundwater table, construction activities could intercept groundwater and degrade local groundwater quality. This impact is considered **potentially significant**.*

Project implementation would include earthmoving activities over approximately 18 acres at the proposed school site, along with up to 6.5 acres associated with the new access road, pedestrian/bicycle access, trenching to connect to an existing outfall in the West Drainage Canal, and Del Paso Boulevard frontage improvements. The earthwork would include soil removal, grading, trenching and pipe installation, fabrication of concrete channels, grading, and landscaping. Underground utilities infrastructure, including a drainage system, would be installed throughout the project site.

Construction activities would create the potential for soil erosion and sedimentation both within and downstream of the project site. The construction process could also result in the accidental release of other pollutants to surface waters, including oil and grease, petroleum hydrocarbons, chemical substances used during construction, waste concrete, and wash water. Intense rainfall and associated stormwater runoff in relatively flat areas could result in short periods of sheet erosion within areas of exposed or stockpiled soils.

As discussed above in the “Environmental Setting” subsection, most of the project site soils fall into hydrologic soil group D—soils that have a very slow infiltration rate and a very high runoff rate. If uncontrolled, soil materials in stormwater runoff could cause sedimentation and blockage of drainage channels. Further, the compaction of soils by heavy equipment may reduce the infiltration capacity of soils and increase the potential for runoff and erosion.

Furthermore, DWR (2017) has reported that groundwater levels in the project area range from 10–20 feet bgs, and project-related excavation for infrastructure required to serve the project could extend to this depth. Therefore, dewatering may be required.

Non-stormwater discharges could result from activities such as construction dewatering procedures, or discharge or accidental spills of hazardous substances such as fuels, oils, concrete, paints, solvents, cleaners, or other construction materials.

The construction-related alteration of on-site drainages could result in soil erosion and stormwater discharges of suspended solids, increased turbidity, and potential release, mobilization, and exposure of other pollutants from project-related construction sites. This contaminated runoff could enter the off-site West Drainage Canal and thence to Fisherman’s Lake, and ultimately drain to downstream water bodies including the Main Drainage Canal and the Sacramento River. Many construction-related wastes have the potential to degrade existing water quality and beneficial uses by altering the dissolved-oxygen content, temperature, pH, suspended-sediment and turbidity levels, or nutrient content, or by causing toxic effects in the aquatic environment. Therefore, project-related construction activities could violate water quality standards or cause direct harm to aquatic organisms.

Because the proposed project would substantially alter on-site drainage patterns, and could result in impacts on water quality within adjacent and downstream off-site drainage channels, and local groundwater as a result of temporary, short-term construction activities, the direct and indirect project-related erosion and water quality impacts would be **potentially significant**.

Mitigation Measures

Mitigation Measure 3.9-1a: Acquire Appropriate Regulatory Permits and Prepare and Implement a SWPPP and BMPs.

Prior to the issuance of grading permits, NUSD shall obtain coverage under the SWRCB’s NPDES stormwater permit for general construction activity (Order 2009-0009-DWQ as amended by Order No. 2012-0006-DWQ), including preparation and submittal of a project-specific SWPPP at the time the NOI is filed with the CVRWQCB. The SWPPP and other appropriate plans shall identify and specify:

- the use of an effective combination of robust erosion and sediment control BMPs and construction techniques to reduce the potential for runoff and the release, mobilization, and exposure of pollutants. These may include but would not be limited to temporary erosion control and soil stabilization measures, sedimentation ponds, inlet protection, perforated riser pipes, check dams, and silt fences;
- the implementation of non-stormwater management controls, permanent post-construction BMPs, and inspection and maintenance responsibilities;
- the pollutants that are likely to be used during construction that could be present in stormwater drainage and nonstormwater discharges, including fuels, lubricants, and other types of materials used for equipment operation;

- spill prevention and contingency measures, including measures to prevent or clean up spills of hazardous waste and of hazardous materials used for equipment operation, and emergency procedures for responding to spills;
- personnel training requirements and procedures that shall be used to ensure that workers are aware of permit requirements and proper installation methods for BMPs specified in the SWPPP; and
- the appropriate personnel responsible for supervisory duties related to implementation of the SWPPP.

Where applicable, BMPs identified in the SWPPP shall be in place throughout all site work and construction/demolition activities and shall be used in all subsequent site development activities. BMPs may include, but are not limited to, such measures as those listed below.

- Implementing temporary erosion and sediment control measures in disturbed areas to minimize discharge of sediment into nearby drainages as required by the CVRWQCB. These measures may include silt fences, staked straw bales or wattles, sediment/silt basins and traps, geofabric, sandbag dikes, and temporary vegetation.
- Establishing permanent vegetative cover to reduce erosion in areas disturbed by construction by slowing runoff velocities, trapping sediment, and enhancing filtration and transpiration.
- Using drainage swales, ditches, and earth dikes to control erosion and runoff by conveying surface runoff down sloping land, intercepting and diverting runoff to a watercourse or channel, preventing sheet flow over sloped surfaces, preventing runoff accumulation at the base of a grade, and avoiding flood damage along roadways and facility infrastructure.

A copy of the approved SWPPP shall be maintained and available at all times on the construction site.

Mitigation Measure 3.9-1b. Develop and Implement a Dewatering Plan and Groundwater Quality BMPs in the SWPPP.

The SWPPP developed and implemented as part of Mitigation Measure 3.9-1a shall specifically include a dewatering plan and measures to prevent/minimize sediment and contaminant releases into groundwater during excavations and methods to clean up releases if they do occur. If necessary, dewatering shall be performed in a manner that allows discharge to an infiltration basin approved by CVRWQCB. Measures to prevent/minimize sediment and contaminant releases into groundwater during excavations and methods to clean up releases may include using temporary berms or dikes to isolate construction activities; using vacuum trucks to capture contaminant releases; and maintaining absorbent pads and other containment and cleanup materials on-site to allow an immediate response to contaminant releases if they occur.

Significance after Mitigation

Implementation of Mitigation Measures 3.9-1a and 3.9-1b would reduce the significant temporary, short-term construction-related drainage and water quality effects from violation of any water quality standards or waste discharge requirements to a **less-than-significant level** by requiring preparation and implementation of a SWPPP

with appropriate BMPs such as source control, revegetation, and erosion control, to maintain surface and groundwater quality conditions in adjacent receiving waters.

IMPACT 3.9-2 **Increased Risk of Flooding and Hydromodification from Increased Stormwater Runoff.** *Project implementation would increase the amount of impervious surfaces, thereby increasing surface water runoff. This increase in surface runoff would result in an increase in both the total volume and the peak discharge rate of stormwater runoff, and therefore could result in a greater potential for localized on- and off-site flooding and hydromodification effects in downstream water bodies. This impact is considered **potentially significant**.*

Project implementation would entail development of urban uses on approximately 24.5 acres of formerly agricultural land. The proposed project consists of school buildings, outdoor sports fields, parking areas, and landscaped open space, along with supporting infrastructure, including multi-modal transportation access. As stated in Chapter 2, “Project Description,” the school would include approximately 82,000 square feet of total building space. The site plan anticipates approximately 40 percent landscaped space and 60 percent buildings and hardscape. These elements of project construction would each contribute different relative amounts of stormwater runoff corresponding to the percentage of impervious surface, as shown in Table 3.9-1. This increase in impervious surfaces would increase the peak discharge rate of stormwater runoff generated on the project site.

Land Use	Project Site Acreage	Impervious Surface (%)
Housing (6–8 dwelling units per acre, includes school uses)	18	50
Off-Site Hardscape Improvements (e.g., roadways)	6.5	95

Source: County and City of Sacramento 2006: Chapter 5

As stated in Chapter 2, “Project Description,” the proposed project includes construction of a drainage system that would be designed to minimize runoff and to promote water quality treatment. Stormwater and irrigation water runoff would be routed to an on-site stormwater detention pond via a network of storm drains and underground drainage pipelines. The detention basin would drain to RD 1000’s West Drainage Canal via a buried drainage pipe to an existing outfall protected by a concrete headwall and riprap (see Exhibit 2-5 in Chapter 2, “Project Description”). The location of the drainage outfall in the canal is approximately 1,000 feet south of the western end of the improvements to the West Drainage Canal that are planned as part of the NLIP Phase 4b project. When completed, the NLIP improvements to the canal will reduce channel bank erosion, reduce the build-up of aquatic weeds, and improve giant garter snake habitat (among other benefits). The West Drainage Canal merges with Fisherman’s Lake approximately 1,200 feet southwest of the discharge outfall. Fisherman’s Lake is a natural slough that supports valley riparian habitat and freshwater marsh that provide suitable habitat for giant garter snake and other species covered under the Natomas Basin Habitat Conservation Plan (see Section 3.4, “Biological Resources,” for additional details related to biological resources in the vicinity of the project site). As stated in Chapter 2, “Project Description,” the project’s stormwater discharge rate would meet or exceed RD 1000’s criteria for accepting runoff, which is 0.1 cubic feet per second per acre (0.1 cfs/acre). A drainage plan for the proposed project is under preparation as of the writing of this document.

For projects located in unincorporated Sacramento County, the design criteria for storm drainage systems are contained in the *Sacramento City/County Drainage Manual Volume 2: Hydrology Standards* (Drainage Manual) (County and City of Sacramento 2006). The Drainage Manual presents the accepted methods for estimating surface water runoff peak flows and volumes for the analysis and design of drainage facilities in the City and County of Sacramento. There are three potential methods for calculating stormwater runoff and volumes. However, because the project proposes to discharge stormwater runoff to an open channel, the “Sacramento Method” may be employed for analysis, according to the guidance in the Drainage Manual. The Sacramento Method uses the Bureau of Reclamation urban unit hydrograph as a basis for estimating runoff hydrographs. This method uses USACE’s Flood Hydrograph Program, HEC-1, to calculate, route and combine runoff hydrographs. HEC-1 is a mathematical watershed model developed by the USACE’s Hydraulic Engineering Center. The model is primarily designed to simulate the surface water runoff response from one basin or from a network of hydraulically connected basins. The model requires an input file that contains the design storm, the hydrologic characteristics of the basins, and the hydraulic characteristics of the drainage network which conveys the flows from these basins. The model output contains computed runoff hydrographs at desired locations within the basin. These runoff hydrographs are used to calculate stormwater runoff rates and volumes, which are then used to design a suitable drainage system.

Potential changes to the hydrologic and geomorphic processes in a watershed as a result of impervious surfaces and drainage infrastructure from urbanization include increased runoff volumes and dry weather flows, increased frequency and number of runoff events, increased long-term cumulative duration of flows, as well as increased peak flows. These changes are referred to as “hydromodification.” Hydromodification intensifies the erosion and sediment transport process, and often leads to changes in stream channel geometry, and streambed and streambank properties, which can result in degradation and loss of riparian habitat, and downgradient sediment deposition causing flooding problems. Typically, three broad approaches are used to manage and reduce the impacts of hydromodification:

- ▶ **Flow Control Approach.** The use of modified storm detention basins (often called Flow Duration Control Basins or FDCs) or infiltration facilities (e.g. swales with underdrains) to control the rate of discharge into receiving waters in the range that is responsible for most channel erosion. Flows are managed so that the pre- and post-development flow duration curves match within a defined tolerance.
- ▶ **Landscape Approach - Low Impact Development (LID).** In LID or source control approaches, impervious areas drain to a series of highly pervious landscaping areas that act as dispersed infiltration facilities. These infiltration facilities are sized based on pre-determined ratios (typically around 5 percent of the developed area) that have been found to infiltrate the excess runoff within the range of erosive flows.
- ▶ **In-stream Approach.** The use of stream restoration approaches to stabilize and restore already heavily anthropogenically affected receiving waters to better withstand the potential future impacts of hydromodification (e.g., reducing slope gradient by increasing sinuosity [where geomorphically appropriate] or introducing step-pool drop structures, or conducting biotechnical bank stabilization, etc.).

Because the project site is outside the boundaries of the Sacramento Areawide NPDES MS4 Permit, design and operation of the drainage facilities at the project site would fall under the jurisdiction of the CVRWQCB through the statewide construction general permit. That permit requires that projects be designed such that post-development runoff does not exceed pre-development runoff. In addition, project applicants who elect to

discharge stormwater runoff to RD 1000 drainage canals must limit peak discharges into the canal system and maintain flood stages for 100- and 200-year events. A drainage plan for the proposed project is under preparation as of the writing of this document. Therefore, the appropriate hydrologic calculations necessary to determine the size of the proposed on-site detention basin along with outlet flow controls, and the dimensions and locations of the proposed underground pipes that are intended to carry stormwater runoff to the detention basin, have not yet been performed. Furthermore, hydromodification management features, including permanent erosion control features, BMPs, and LID techniques have not yet been identified. Therefore, this impact is considered **potentially significant**.

Mitigation Measure 3.9-2: Coordinate with RD 1000 and CVRWQCB, Prepare and Submit a Drainage Plan, and Implement Requirements Contained in the Plan.

NUSD shall coordinate with RD 1000 to design a drainage system that limits peak discharges into the RD 1000 drainage system per RD 1000 requirements. In addition, before the approval of grading plans and building permits, NUSD shall prepare a final drainage plan that incorporates CVRWQCB requirements to appropriately convey off-site upstream runoff through the project site, and demonstrate that project-related on-site runoff would be appropriately contained in detention basins and managed with through other improvements (e.g., source controls) to reduce flooding and hydromodification impacts. The drainage plan shall include, but is not limited to, the following items:

- an accurate calculation of pre-project and post-project runoff scenarios, obtained using appropriate engineering methods (which may consist of those contained in the *Sacramento City/County Drainage Manual Volume 2: Hydrology Standards*), that accurately evaluates potential changes to runoff, including increased surface runoff;
- runoff calculations for the 10-year and 100-year (0.01 AEP) storm events (and other, smaller storm events as required) shall be performed and the trunk drainage pipeline sizes confirmed based on alignments and detention facility locations finalized in the design phase;
- a description of the proposed maintenance program for the on-site drainage system;
- project-specific standards for installing drainage systems;
- a description of on-site features designed to treat stormwater and maintain stormwater quality before it is discharged from the project site (e.g., vegetated swales, infiltration trenches, and constructed wetland filter strips); and
- stormwater management BMPs that are designed to limit hydromodification and maintain current stream geomorphology. These may include, but are not limited to, the following:
 - use of LID techniques to limit increases in stormwater runoff at the point of origination (these may include, but are not limited to: surface swales; replacement of conventional impervious surfaces with pervious surfaces [e.g., porous pavement]; impervious surfaces disconnection; and trees planted to intercept stormwater);

- the use of detention basin inlet and outlet water control structures that are designed to reduce the rate of stormwater discharge;
- enlarged detention basins to minimize flow changes and changes to flow duration characteristics;
- minimize slope differences between any stormwater or detention facility outfall channel with the existing receiving channel gradient to reduce flow velocity; and
- minimize to the extent possible detention basin sizes, embankments, culverts, and other encroachments into the channel and floodplain corridor, and utilize open bottom box culverts to allow sediment passage on smaller drainage courses.

Significance after Mitigation

Implementation of Mitigation Measure 3.9-2 would reduce the significant impact associated with increased risk of flooding and hydromodification from increased stormwater runoff to a **less-than-significant** level because NUSD would demonstrate that the project would conform with applicable State and local regulations regulating surface water runoff, which are designed to meet applicable State and local regulations pertaining to stormwater runoff. Specific project design standards as required in this mitigation measure would, when implemented, safely convey on-site and off-site flows through the project site, would reduce the effects of hydromodification on stream channel geomorphology, and would prevent substantial increased flood hazard on downstream areas by limiting peak discharges of flood flows to levels that are at or below pre-project conditions.

IMPACT 3.9-3 *Long-Term Operational Water Quality and Hydrology Effects from Urban Runoff. Project implementation would change the amount and timing of potential long-term operational pollutant discharges in stormwater and other urban runoff to both on- and off-site drainages. This impact is considered potentially significant.*

Surface water quality throughout the region is threatened by development, stormwater runoff, and increased diversions into both surface and sub-surface sources. New developments, infrastructure improvements, and redevelopment projects can affect water quality creating a source for increased pollutant runoff.

Project development would result in the conversion of formerly agricultural land to school use, which would alter the types, quantities, and timing of contaminant discharges in stormwater runoff. Project development would result in changes to land use, vegetation, and infiltration characteristics of the project site and would introduce new sources of water pollutants, thereby producing “urban runoff.” Pollutants contained within urban runoff may include but are not limited to sediment, oxygen-demanding substances (e.g., organic matter), nutrients (primarily nitrogen and phosphorus), heavy metals, bacteria, oil and grease, and toxic chemicals, all of which can degrade receiving water quality.

Overall, the potential for the proposed project to cause or contribute to long-term discharges of urban contaminants (e.g., oil and grease, fuel, trash) into the stormwater drainage system and ultimate receiving waters would increase compared to existing conditions. The potential discharges of contaminated urban runoff from paved and landscaped areas would increase and could cause or contribute to adverse effects on aquatic organisms in receiving waters. Urban runoff from the proposed access road and parking areas would occur. Landscaped areas may produce fertilizer wastes.

Urban contaminants typically accumulate during the dry season and may be washed off when adequate rainfall returns in the fall to produce a “first flush” of runoff. The amount of contaminants discharged in stormwater drainage from developed areas varies based on a variety of factors, including the intensity of urban uses, such as vehicle traffic, types of activities occurring on site (e.g., residential vs. commercial), types of contaminants used on site (e.g., pesticides, herbicides, cleaning agents, or petroleum byproducts), contaminants deposited on paved surfaces, and the amount of rainfall.

A quantitative hydrologic and water quality analysis of proposed conditions incorporating the drainage design features, including final water quality basin sizing and design configuration, has not yet been performed. Furthermore, water quality treatments within the detention basins prior to off-site discharge (such as marsh areas, permanent sediment settling basins, permanent wet basins, and outlet structures designed to control the flow release rate and reduce downstream sedimentation), or BMPs and LID measures designed to control stormwater quality, have not been designed or specified. Therefore, this impact is considered **potentially significant**.

Mitigation Measure 3.9-3: Develop and Implement a Best Management Practice and Water Quality Maintenance Plan.

Before final approval of improvement plans, a detailed BMP and water quality maintenance plan shall be prepared by a qualified engineer retained by NUSD. The plan shall finalize the water quality improvements and further detail the structural and nonstructural BMPs and LID features proposed for the project. The plan shall include the elements described below.

- A quantitative hydrologic and water quality analysis of proposed conditions incorporating the proposed drainage design features, which shall include final water quality basin sizing and design configuration.
- Pre-development and post-development calculations demonstrating that the proposed water quality BMPs and LID features meet or exceed requirements established by RD 1000 and Sacramento County and including details regarding the size, geometry, and functional timing of storage and release. Pollutants are removed from stormwater in detention basins through gravitational settling and biological processes depending on the type of basin.
- Source control programs to control water quality pollutants on the project site, which may include but are not limited to recycling, street sweeping, storm drain cleaning, hazardous waste collection, waste minimization, prevention of spills and illegal dumping, and effective management of trash collection areas.
- A pond management component for the proposed basin that shall include management and maintenance requirements for the design features and BMPs.
- LID control measures shall be integrated into the BMP and water quality maintenance plan. These may include, but are not limited to:
 - surface swales;
 - replacement of conventional impervious surfaces with pervious surfaces (e.g., porous pavement);
 - impervious surfaces disconnection; and

- trees or other types of landscaping planted to intercept stormwater runoff.

Significance after Mitigation

Implementation of Mitigation Measure 3.9-3 would reduce the significant effect associated with long-term water quality effects of urban runoff to a **less-than-significant** level because NUSD would develop and implement a BMP and water quality maintenance plan. Water quality BMPs such as vegetated swales, constructed wetlands, and infiltration trenches have been shown to be successful in controlling water quality and avoiding water quality impacts.

IMPACT 3.9-4 Potential Impacts from New Impervious Surfaces on Groundwater Recharge and Aquifer Volume.
The development of additional project-related impervious surfaces would reduce the amount of water available for local groundwater recharge. This impact is considered less than significant.

The proposed project would increase the amount of impervious surfaces and the associated amount of surface runoff. Table 3.9-1, above, shows the approximate acreage at the project site that would be developed with the proposed school, landscaping, and roadways/parking areas, along with the percentage of impervious surface area for each land use type that is applied to hydrologic calculations as required by the Drainage Manual (County and City of Sacramento 2006).

Groundwater recharge commonly occurs along natural stream channels where sand and gravel deposits are present, none of which are present on the project site. Other sources of recharge include deep percolation from applied surface water and precipitation. Induced recharge can occur from recharge basins and injection of water through wells. NRCS (2017) soil survey data indicate that 1/3 of the project consists of hydrology Group C soils and the remaining 2/3 of the project site consists of hydrologic Group D soils. Group C soils have a layer that impedes the downward movement of water or are soils composed of moderately fine or fine texture. Group D soils have a high clay content. Therefore, Group C and D soils have a slow and very slow rate of water transmission, respectively. NRCS (2017) data also indicates that ponding of water occurs on the project site (due to a lack of water transmission through the soil).

Thus, soils at the project site generally have a low capacity for groundwater recharge. Given that fact, low amounts of precipitation per year are expected to infiltrate to the groundwater aquifer under existing undeveloped conditions, with the remaining water running off, absorbed by grass crops grown for hay, or consumed through evapotranspiration.

Landscape irrigation activities would occur with the transition of the project site to developed uses. Urban land uses result in application of water, in addition to precipitation, for outdoor use. A small portion of this water, although restricted by the soil conditions described above, reaches the aquifer as recharge. As shown in Table 3.9-1, development of the project site with the proposed land uses would result in the nearly complete loss of approximately 6.5 acres for groundwater recharge from off-site hardscape improvements, and the partial loss of approximately 18 acres for groundwater recharge from on-site hardscape improvements (i.e., approximately 9 acres). This would result in a loss of approximately 15.5 acres of land available for groundwater recharge. However, based on soil borings obtained from the project site, Geocon (2018:6) found that a continuous, 15-foot-thick layer of clay is present throughout the project site. This clay layer prevents substantial amounts of water from reaching and recharging the groundwater aquifer. Given that the project site is entirely composed of

hydrologic group C and D soils where very little groundwater recharge occurs under natural conditions, this impact is considered **less than significant**.

Mitigation Measures

No mitigation measure is required.

IMPACT 3.9-5 **Placement of Structures that would Impede or Redirect Flood Flows within a 100-year Flood Hazard Area.** *Development of the proposed project would result in placement of structures that would impede or redirect flood flows within a 100-year flood hazard area. Furthermore, stormwater runoff that would be discharged into RD 1000's West Drainage Canal could increase the 100- or 200-year flood stage elevation in the canal, thereby subjecting downstream development and agricultural land to an increased risk of flooding. Therefore, this impact is considered **potentially significant**.*

As discussed above in detail in the “Environmental Setting” subsection, the project site is located in the Natomas Basin, which is protected from flooding by a network of levees. From 2007–2015, SAFCA completed substantial levee improvements along the Sacramento River east levee and Natomas Cross Canal and in June 2015, USACE recertified the Natomas Basin levees, allowing FEMA to improve the area’s flood zone designation to A99. An A99 designation refers to areas that are subject to inundation by the 1-percent-annual-chance (0.01 AEP) flood event, but which will ultimately be protected upon completion of an under-construction federal flood protection system. These are areas of special flood hazard where enough progress has been made on the construction of a protection system, such as dikes, dams, and levees, to consider it complete for insurance rating purposes (FIRM). Zone A99 may only be used when the flood protection system has reached specified statutory progress toward completion. In an A99 zone, no Base Flood Elevations (BFEs) or depths are available for planning purposes. The A99 designation allows permitting and construction of new structures in advance of the completion of flood protection improvements.

At a minimum, the floodplain management and building requirements of Section 60.3 of the National Flood Insurance Program (NFIP) regulations—specifically, Subsections 60.3 (a)(1) through (a)(4)(i) and Subsections 60.3 (b)(5) through (b)(8)—apply in areas designated Zone A99 on an effective FIRM. Communities participating in the NFIP must meet the following requirements in Zone A99 areas (FEMA 2014):

- ▶ floodplain management permits;
- ▶ a determination whether the building site will be reasonably safe from flooding;
- ▶ new or substantially improved building that are subject to flooding must be constructed by methods and practices to minimize flood damage; and
- ▶ a review of subdivision proposals to determine whether proposed structures will be reasonably safe from flooding.

A community can choose to adopt and enforce higher regulatory standards, which are documented in a local floodplain management ordinance. Sacramento County has adopted a Floodplain Management Ordinance (Sacramento County Zoning Code, SZC-2014-0007), which describes the types of development activities that are allowed and how proposed development may be permitted in floodplains. All proposed development activity in

floodplains, defined as those areas designated by FEMA on the FIRMs for Sacramento County (Community Number 060262) and other areas subject to flooding, must be reviewed and permitted by the county's Floodplain Administrator before construction.

The project proposes to discharge stormwater runoff into RD 1000's West Drainage Canal. RD 1000 requires that new development mitigate all impacts to the RD 1000 drainage and flood control system, including discharge requirements to maintain current canal stages for the 100-year and 200-year events in the interior drainage system per ULDC standards.

As stated in Chapter 2, "Project Description," the proposed project would include construction of a drainage system that would be designed to minimize runoff and to promote water quality treatment. Stormwater and irrigation water runoff would be routed to an on-site stormwater detention pond via a network of storm drains and underground drainage pipelines. The detention basin would drain to RD 1000's West Drainage Canal via a buried drainage pipe and existing outfall protected by a concrete headwall and riprap. The discharge rate would meet or exceed RD 1000's criteria for accepting runoff, which is 0.1 cfs/acre. However, a drainage plan for the proposed project has not yet been prepared. Thus, a site-specific base flood elevation or depth for project design purposes has not been calculated. Furthermore, site-specific design calculations have not been prepared to demonstrate that the proposed development would be adequately protected from flooding and that the proposed development would not substantially impede flood flows such that downstream development and agricultural lands would be subject to an increased chance of flooding. Therefore, the impact from placement of structures that could impede flood flow within a 100-year floodplain is considered **potentially significant**.

Mitigation Measure 3.9-5a: Implement Mitigation Measure 3.9-2 (Coordinate with RD 1000 and CVRWQCB, Prepare and Submit a Drainage Plan, and Implement Requirements Contained in the Plan).

Mitigation Measure 3.9-5b: Coordinate with RD 1000 Regarding Project Design to Protect Existing Flood-Stage Water Levels in RD 1000 Drainage Canals.

Before the approval of grading plans, site improvements, and/or building permits, NUSD shall coordinate with RD 1000 regarding the design of project-related drainage facilities and stormwater discharge into the West Drainage Canal. NUSD shall provide evidence, to the satisfaction of RD 1000, that project-related discharges would maintain current canal stages for the 100-year (0.01 AEP) and 200-year (0.005 AEP) storm events in the RD 1000 interior drainage system per ULDC standards.

Mitigation Measure 3.9-5c: Obtain a CLOMR from FEMA and Implement Requirements of Sacramento County Floodplain Management Ordinance.

Before the approval of grading plans, site improvements, and/or building permits, NUSD shall submit final drainage plans demonstrating to the satisfaction of the County Floodplain Administrator that the proposed project would appropriately accommodate 10-year, 100-year (0.01 AEP), and 200-year (0.005 AEP) flood flows.

NUSD shall comply with the standards set forth in the Sacramento County Floodplain Management Ordinance (Sacramento County Zoning Code, SZC-2014-0007), which includes obtaining a Floodplain Management Permit (Chapter 5, Section 95.01). In support of the permit application, NUSD shall provide the County with the following:

- Plans in duplicate drawn to scale showing the nature, location, dimensions, and elevation of the property, existing or proposed structures, fill, storage of materials, and drainage facilities.
- Proposed elevation in relation to currently adopted Vertical Datum of the lowest floor of all buildings, elevation of highest adjacent preconstruction natural grade and proposed elevation of lowest floor of all buildings.
- Proposed elevation in relation to currently adopted Vertical Datum to which any structure will be flood-proofed, if required in Chapter 6.
- Location and elevation of the base flood and the floodway, both before and after proposed development.
- Location, volume and depth of proposed fill and excavation within the 100-year floodplain and the floodway.
- Description of the extent to which any watercourse will be altered or relocated as a result of proposed development.

In addition to the above, as part of the Floodplain Management Permit, NUSD shall comply with any other conditions imposed by the Sacramento County Floodplain Administrator including the dedication of easements. The Floodplain Administrator may also require that NUSD enter into a written agreement with the County holding the County of Sacramento and the Sacramento County Water Agency free from liability for any harm that may occur to any real or personal property or person by flooding (Chapter 5, Sections 905-06 and 905-07).

NUSD shall also comply with the new construction standards set forth in Chapter 6 of the Sacramento County Floodplain Management Ordinance, which include, but are not limited to, the following (Section 906-06):

- Identify special or local flood hazard areas and the elevation of the base flood.
- Provide the elevation of proposed buildings and pads, and assure the proposed pads will be at least 1 foot above the base flood elevation.
- Be designed in accordance with the Floodplain Management Ordinance and the County Improvement Standards to minimize flood damage.
- Provide a drainage system report in accordance with the County Improvement Standards with a narrative describing the existing and proposed stormwater management system, including all discharge points, collection, conveyance, and stormwater storage facilities.
- Provide a drainage system map including, but not limited to, sub-watershed boundaries and the property's location within the larger watershed, predevelopment and post- development terrain at 1-foot contour intervals and the location of all existing and proposed drainage features. Include a plan

of the parcel showing applicable proposed revisions to pre-development and postdevelopment surface drainage flows.

- Stormwater calculations by a professional civil engineer shall be submitted to the Floodplain Administrator, including but not limited to, detention basin sizing, storm drain pipe sizing and overland flow path design.
- No new construction or substantial improvements or development may occur without the approval of the Floodplain Administrator and without demonstrating that the cumulative effect of the proposed development when combined with all other existing and anticipated development will not have adverse impacts to downstream, upstream, or adjacent properties.

Significance after Mitigation

Implementation of Mitigation Measures 3.9-5a, 3.9-5b, and 3.9-5c would reduce the significant impact from placement of structures within a 100-year flood hazard area to a **less-than-significant** level because project site facilities would be designed and constructed in accordance with flood protection requirements contained in the Sacramento County Flood Control Ordinance; would result in design and operation of a drainage conveyance system capable of conveying and appropriately detaining prior to discharge, on-site flood protection during the 10-year, 100-year (0.01 AEP), and 200-year (0.005 AEP) storm events; and would demonstrate to the satisfaction of RD 1000 that proposed project flows into the West Drainage Canal would maintain existing canal 100-year (0.01 AEP) and 200-year (0.005 AEP) flood stages per ULDC requirements.

IMPACT 3.9-6 **Substantial Increased Risk of Exposure to Flooding from Dam or Levee Failure.** *The proposed project would be located within the Folsom Dam inundation zone, and in an area protected by levees. However, the Folsom Dam facilities have been augmented to provide increased flood protection, and the Natomas Basin levees have been and continue to be in the process of upgrades to provide improved flood protection. Therefore, this impact is considered less than significant.*

The project site is protected by a series of reservoirs including Shasta, Oroville, Black Butte, New Bullards Bar, and Folsom Dam, which were designed to reduce flood flows in the American and Sacramento Rivers to a rate that could be safely carried by the downstream levees. Over the years, coordinated reservoir operations and Folsom Dam outlet enlargement projects have been implemented. In 2017, in a joint project between USACE, U.S. Bureau of Reclamation, the State, and SAFCA, an auxiliary spillway was constructed along the Folsom Dam. The spillway is operated in coordination with the existing operation of the Folsom Dam for flood control and provides for safer water releases ahead of forecasted storms, thereby substantially reducing the risk of flooding and dam failure.

From 2007–2015, SAFCA completed substantial levee improvements along the Sacramento River east levee and Natomas Cross Canal and in June 2015, USACE recertified the Natomas Basin levees, allowing FEMA to improve the area’s flood zone designation to A99. As discussed above in the “Environmental Setting” subsection, SAFCA is working with USACE and the CVFPB to provide areas protected by the SRFCP (including the project site) with protection against the 200-year storm (0.005 AEP). The SRFCP is an integrated system of levees, overflow bypass channels, and dams that was designed and constructed by federal, State, and local interests over several decades to protect farmlands, towns, and cities in the Sacramento Valley from large floods. SAFCA is planning achieve this flood protection level by completing Phases 1, 2, 3, 4a, and 4b of the NLIP and USACE’s

Natomas Basin Project. Construction of Phases 1 and 2 are complete. Phase 3 construction along the Sacramento River east levee is largely complete; however, the USACE plans to complete work along the Pleasant Grove Creek Canal in 2021 and part of the Natomas East Main Drainage Canal in 2018. Phase 4a was initiated by SAFCA between 2010 and 2014 and will be completed by USACE.

Sacramento County has prepared flood inundation zone maps and associated evacuation routes for use by the public as part of the County Department of Water Resources' "Storm Ready" program (Sacramento County Department of Water Resources 2018). Implementation of the proposed project would have no effect on potential dam failure or existing levee breaches. Furthermore, given the change in FEMA flood zone designation to A99, and given the demonstration of substantial progress that has been provided by SAFCA to FEMA and USACE from ongoing levee work in the Natomas Basin, the impact related to flooding from failure of a levee is considered **less than significant**.

Mitigation Measures

No mitigation measure is required.

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3.10 LAND USE, PLANNING, POPULATION, AND HOUSING

This section describes the proposed project’s consistency with State, regional, and local planning goals and policies. It evaluates the project’s compatibility with existing land uses on and adjacent to the project site. This section also identifies population and housing conditions and potential impacts resulting from the proposed project.

Consistency with the Natomas Basin Habitat Conservation Plan is addressed in Section 3.4, “Biological Resources.” Potential environmental impacts related to agricultural resources are addressed in Section 3.2, “Agricultural Resources.”

3.10.1 ENVIRONMENTAL SETTING

PROJECT SITE

The proposed project site is located on an approximately 34-acre property north of Del Paso Road, directly west of the Westlake residential development, in the Natomas area of unincorporated Sacramento County (Exhibit 2-1 in Chapter 2, “Project Description”). Historically, the site was used for agricultural crop production including wheat, barley, and rice. The last year of rice production was 2002. In 2006 and 2007, the site was in wheat production. Since the site has been owned by the school district, grass hay (oat and rye) has been grown on the site, and it has been cut periodically.

ADJACENT LAND USES

The Westlake residential development is located to the east, fallow agricultural lands on the directly adjacent parcel to the south with residential further to the south (Natomas Central development - across Del Paso Road), and habitat conservation lands managed by The Natomas Basin Conservancy (TNBC) to the west (across the West Drainage Canal). The site is bordered on the north and west by a parcel that is adjacent to the Reclamation District (RD) No. 1000 West Drainage Canal and on the east by a 200-foot wide parcel adjacent to the City limits of the city of Sacramento (Exhibit 2-2 in Chapter 2, “Project Description”). The Sacramento International Airport is located approximately 2 miles to the northwest.

POPULATION AND HOUSING

The proposed project site is located within unincorporated Sacramento County, adjacent to the city of Sacramento. According to the 2010 Census, the population in Sacramento County was 1,418,788, a 16-percent increase from 1,223,499 in 2000 (2010 Census; 2000a Census). Between 2010 and 2018, the population of the city of Sacramento increased by approximately 6 percent and the population in the unincorporated county increased by approximately 5 percent (DOF 2018). According to the Department of Finance (DOF) estimates, the County’s population is expected to increase to 2,257,413 by 2060 (DOF 2016).

According to the California Department of Finance (DOF), Sacramento County as a whole had an estimated 570,305 housing units in 2018 (DOF 2018). This is an increase of 25 percent from 555,932 in 2010 (DOC 2018). Approximately 71 percent of housing units in Sacramento County were detach or attached single-family homes and 29 percent were multi-family homes. In 2018, an estimated 5.8 percent of homes in Sacramento County as a whole were vacant and the vacancy rate in unincorporated Sacramento County was slightly higher at 6.3 percent.

Household sizes are approximately the same in the city of Sacramento and unincorporated Sacramento County – in 2018, the city was at 2.71 persons per household and the unincorporated county was at 2.79 (DOF 2018). For both the city and unincorporated county, the average household size between 2010 and 2018 has remained the same (DOF 2018).

In the area that would be served by the proposed project, population has increased significantly in the past couple of decades. Census Tracts 70.08 and 71, which include areas served by Paso Verde, H. Allen Hight Elementary School, and Witter Ranch Elementary School, the school enrollment population has increased by 10,170 between 2000 and the five-year period between 2009 and 2013 (U.S. Census Bureau 2015).

3.10.2 REGULATORY CONTEXT

FEDERAL PLANS, POLICIES, REGULATIONS, AND LAWS

No federal plans, policies, regulations, or laws related to land use and planning are applicable to the proposed project.

STATE PLANS, POLICIES, REGULATIONS, AND LAWS

Education Code Section 17215

According to CDE regulations,¹ the responsibilities of the school district, the California Department of Education, and the California Department of Transportation, Aeronautics Program, Office of Airports, concerning the school site's proximity to runways are in Education Code Section 17215.^{2,3} As a part of the site selection prescreening process, the school district should determine the proximity of the site to runways. If the site is within two nautical miles of an existing airport runway or a potential runway included in an airport master plan, as measured by direct air line from the part of the runway that is nearest to a proposed school site, the following procedures must be followed before the site can be approved:

1. The governing board of the school district, including any district governed by a city board of education, shall give the Department [CDE] written notice of the proposed acquisition and shall submit any information that is required by the Department. The Department will notify the DOT Aeronautics Program, Office of Airports.
2. The Division of Aeronautics shall investigate the proposed site and, within 30 working days after receipt of the notice, shall submit to the local governing board a written report and its recommendations concerning acquisition of the site. As a part of the investigation, the Aeronautics Program shall give notice to the owner and operator of the airport, who shall be granted the opportunity to comment on the proposed school site.
3. The governing board of the school district shall not acquire title to the property until the report of the DOT Aeronautics Program has been received. If the report favors the acquisition of the property for a

1 School Site Selection and Approval Guide. <http://www.cde.ca.gov/ls/fa/sf/schoolsiteguide.asp#Noise>.

2 CCR, Title 5, Section 14011(k).

3 As amended by Assembly Bill (AB) 747, Chapter 837, Statutes of 1999.

school site or an addition to a present school site, the governing board shall hold a public hearing on the matter before acquiring the site.

4. If the report does not favor the acquisition of the property for a school site or an addition to a present school site, the governing board may not acquire title to the property. If the report does not favor acquisition of a proposed site, no state funds or local funds shall be apportioned or expended for the acquisition of that site, construction of any school building on that site, or the expansion of any existing site to include that site.
5. The requirements noted above do not apply to sites acquired before January 1, 1966, or to any additions or extensions to those sites.

The Division of Aeronautics conducted an aerial inspection of the site on January 31, 2006. In addition, the Division of Aeronautics requested comments from SACOG and the Operations Manager of Sacramento International Airport, and their responses were considered in the final determination. The Division of Aeronautics concluded that based on review of existing conditions and planned development, the school site provides an appropriate level of safety suitable for a school (Miles, pers. comm., 2006).

REGIONAL AND LOCAL PLANS, POLICIES, REGULATIONS, AND ORDINANCES

Sacramento International Airport Land Use Compatibility Plan

The Sacramento International Airport Land Use Compatibility Plan (ALUCP) was adopted by the Sacramento Area Council of Governments (SACOG) in 1994 and amended in 2013. SACOG serves as the Airport Land Use Commission (ALUC) for Sacramento, Sutter, Yolo, and Yuba Counties. The ALUCP sets forth policies to promote compatibility between the airport and future land uses in the surrounding area by establishing a set of compatibility criteria that is applicable to new development.

An Airport Referral Area is an area in which current or future airport-related noise, overflight, safety, or airspace protection factors may affect land uses or necessitate restrictions on those uses, and therefore certain land use proposals are to be referred to the ALUC for review. The proposed project is located in Referral Area 1, which encompasses locations where noise and/or safety represent compatibility concerns (see Exhibit 3.8-1 in Section 3.8, “Hazards and Hazardous Materials”). The ALUC must review the following types of projects proposed in Referral Area 1 (SACOG ALUC 2013):

- ▶ Any discretionary development proposal for projects having a building floor area of 20,000 square feet or greater unless only ministerial approval (e.g., a building permit) is required.
- ▶ Major infrastructure or other capital improvements (e.g., water, sewer, or roads) that would promote urban uses in undeveloped or agricultural areas to the extent that such uses are not reflected in a previously reviewed general plan or specific plan.
- ▶ Proposed land acquisition by a government entity for any facility (for example, a school or hospital) designed to accommodate more than 100 people during a typical busy period.

With regard to airspace hazards, the ALUCP defines six airport safety zones. Airport safety zones are locations where certain types of proposed development and infrastructure and the use of flammable or hazardous materials

may be restricted on the basis of safety compatibility with the airport. The project site is within Safety Zones 4 and 6. As discussed further in Impact 3.10-1, SACOG has stated that proposed land uses in these safety zones are consistent with the ALUCP (Chew, pers. comm., 2018).

For the 60-65 CNEL noise contour, the ALUCP identifies schools as a Conditional Use. The Conditional Uses for schools in areas above 60 dB CNEL are identified in Policies 3.2.2(a) and 4.1.5 of the ALCUP. Policy 3.2.2 discusses special circumstances and special measures that can address adverse consequences, with reference to Section 4.2. Section 4.2 then references Policy 4.1.5. Under Policy 4.1.5, the ALUCP explains that the Airport Land Use Commission can find a normally incompatible use to be compatible with findings that the land use will neither (1) create a safety hazard to people on the ground or aircraft in flight nor (2) result in excessive noise exposure for the proposed use. The proposed school would comply with Section 5.057.4 (Project Submittal Guidelines) of California Code of Resources Title 24 and implement standards identified in Collaborative for High Performance Schools 2014 Criteria. Section 5.057.4 of Title 24 and the Collaborative for High Performance Schools criteria identify building materials that attenuate noise to 45 dB CNEL.

Compatibility concerns associated with safety are address in Section 3.8, “Hazards and Hazardous Materials,” and compatibility concerns associated with noise are addressed in Section 3.11, “Noise and Vibration,” of this EIR.

Sacramento International ALUCP Policies

The following policies from the Sacramento International ALUCP address land use consistency:

3.1.1. Evaluating Compatibility of New Development: The compatibility of proposed land uses within Sacramento International Airport Influence Area shall be evaluated in accordance with:

- (a) The specific noise, safety, airspace protection, overflight, and other compatibility policies set forth in Sections 3.2 through 3.5 and in Section 4;
- (b) The criteria listed in Table 1, Noise Compatibility Criteria, and Table 2, Safety Compatibility Criteria; and
- (c) The Compatibility Zones depicted on the Compatibility Policy Maps in this chapter.

4.2.1. General: In adoption of this Compatibility Plan, the ALUC has determined that certain known Projects warrant special conditions treatment as envisioned by Policy 4.1.5. These site-specific exceptions and the criteria to be applied to them are as described in the following policies of this section.

4.1.5. Special Conditions Exception: The compatibility criteria set forth in this Compatibility Plan are intended to be applicable to all locations within the Sacramento International Airport Influence Area that are under the jurisdiction of the Airport Land Use Commission for Sacramento, Sutter, Yolo, and Yuba Counties. However, there may be specific situations where a normally incompatible use can be considered compatible because of terrain, specific location, or other extraordinary factors or circumstances related to the site.

- (a) After due consideration of all the factors involved in such situations, the ALUC may find a normally incompatible use to be acceptable.

- (b) In reaching such a decision, the ALUC shall make specific findings as to the nature of the extraordinary circumstances that warrant the policy exception and why the exception is being made. Findings also shall be made that the land use will neither create a safety hazard to people on the ground or aircraft in flight nor result in excessive noise exposure for the proposed use.
- (c) Approval of a special conditions exception for a proposed Project shall require a two-thirds approval of the ALUC members voting on the matter and shall not be delegated to the ALUC Secretary for approval.
- (d) The burden for demonstrating that special conditions apply to a particular Development Proposal rests with the Project proponent and/or the referring Local Agency, not with the ALUC.
- (e) The granting of a special conditions exception shall be considered site-specific and shall not be generalized to include other sites.

Sacramento County General Plan

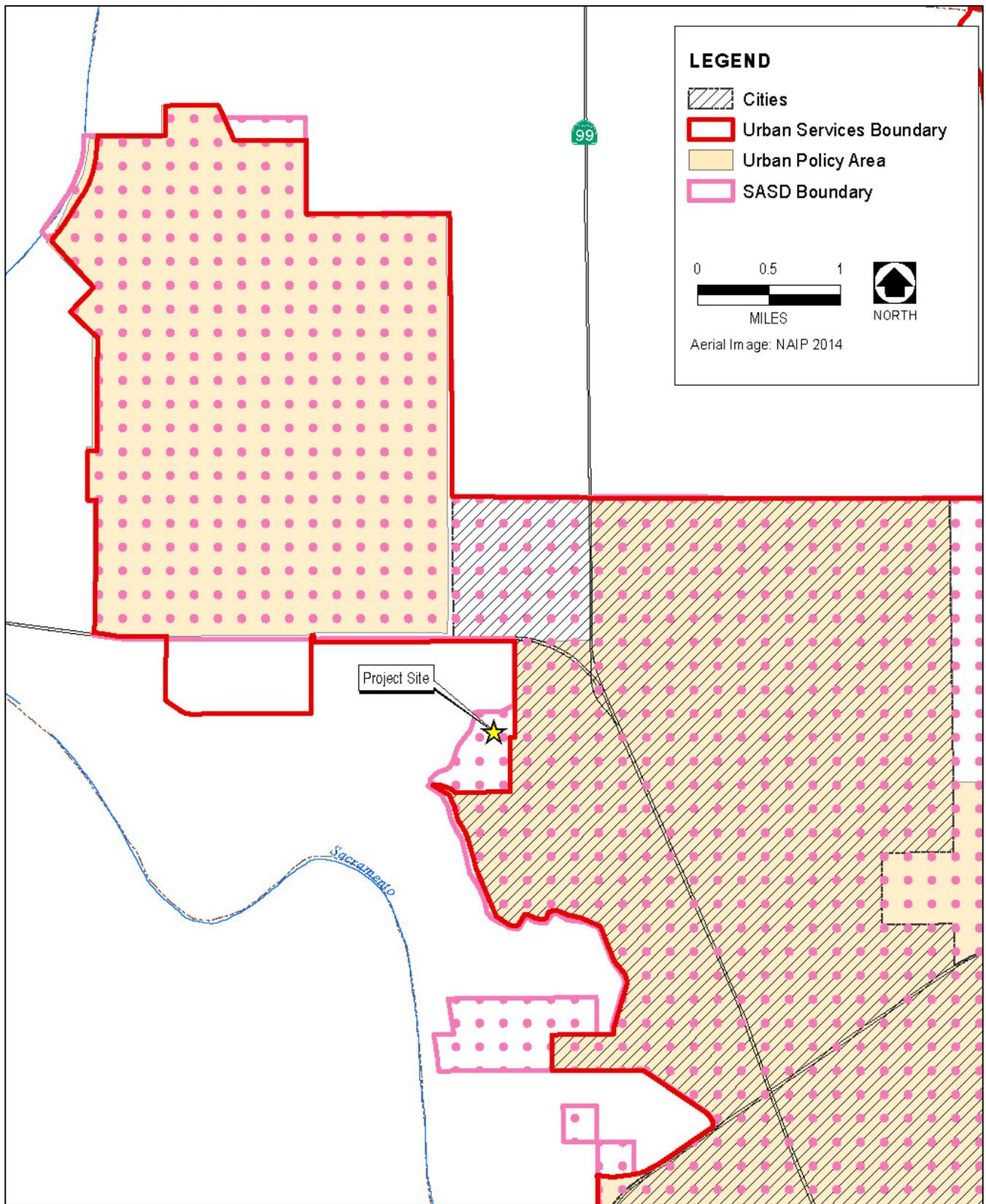
The Sacramento County General Plan was adopted on November 9, 2011 (Sacramento County 2011). Portions of the County General Plan contain policies for urban development, including urban communities and the infrastructure necessary to serve them. Other sections of the County General Plan describe strategies to recognize and preserve areas of open space and natural resources. As a whole, the General Plan reflects a balance between the amount and location of lands planned for urban uses and those planned to remain in a rural or natural setting.

Urban Services Boundary and Urban Policy Area

The school property is located adjacent to, but outside of the County's current Urban Services Boundary (USB) and Urban Policy Area (UPA) (Exhibit 3.10-1).⁴ No change to the USB or UPA is required to implement the project and this information is presented for context only.

The USB is "is the ultimate growth boundary for the unincorporated area" and the UPA is "the area within the USB expected to receive urban services in the near term" (Sacramento County 2011, Executive Summary, page 12). According to the County, the UPA is important in planning for the provision of urban services and infrastructure, "as it provides the geographic basis for infrastructure master plans, particularly for public water and sewerage, which require large capital investment and relatively long lead time for the installation of capital improvements (Sacramento County 2011, Land Use Element, page 19). However, in the case of the Paso Verde Elementary School, this site is already within the Sacramento Area Sewer District service boundary, and there is water and sewer in adjacent areas.

4 The USB is the boundary of the urban area in the unincorporated County that provides a permanent boundary that is not modified except under extraordinary circumstances and is used as a planning tool for urban infrastructure providers for developing long-range master plans for future urbanization. The UPA defines the area expected to receive urban levels of public infrastructure and services within the 20-year planning period of the County General Plan. The UPA provides the geographic basis for infrastructure master plans, particularly for public water and sewerage, which require large capital investments and relatively long lead times for the installation of capital improvements.



Source: Sacramento County 1993, City of Sacramento 2018; adapted by AECOM in 2018

Exhibit 3.10-1 Project Site and the USB and UPA

USB and UPA Intent Statements

The intent of the USB and UPA is explained on page 19 of the County's General Plan Land Use Element. Excerpts of intent statements are presented below:

Intent: The Urban Service Boundary (USB)... is intended to be a permanent growth boundary not subject to modification except under extraordinary circumstances. The USB should be used by urban infrastructure providers for developing very long-range master plans that can be implemented over time as the urbanized area expands. It is anticipated that the Urban Services Boundary and construction schedules will be incorporated into master plans for the provision of public services and infrastructure to the urban area.

The Urban Policy Area (UPA) ...defines the area within the USB expected to receive urban levels of public infrastructure and services within the planning period. The General Plan states that the area within the UPA must be able to accommodate growth projected for the 25-year planning period.

The UPA and the USB are designed to promote maximum efficiency of land uses and protection of the County's natural resources. The USB allows for the permanent preservation of agriculture and rangelands, critical habitat and natural resources, while the UPA concentrates and directs growth within previously urbanized areas, limiting arbitrary and sprawling development patterns. These two growth boundaries work in tandem to manage and direct future development, as well as provide infrastructure and service providers with intermediate and ultimate growth boundaries to use to plan for future expansion.

With respect to the intent statement, “[t]he UPA and the USB are designed to promote maximum efficiency of land uses,” the development of the Paso Verde Elementary School does not represent inefficient use of land – the school site would be proximate to areas it would serve and is directly adjacent to existing development.

With respect to the intent statement, “the UPA concentrates and directs growth within previously urbanized areas, limiting arbitrary and sprawling development patterns,” the school would serve existing needs of existing residential development in the City, and the site is adjacent to existing development, so the school would not introduce sprawling development patterns.

Policy LU-1

Policy LU-1 from the General Plan reads: “The County shall not provide urban services beyond the Urban Policy Area, except when the County determines the need for health and safety purposes.” In the case of the Paso Verde Elementary School, urban services would come from the Sacramento Area Sewer District, the Sacramento Regional County Sanitation District, the City of Sacramento, and the Sacramento Fire Department. The project site is within the service boundaries of the Sacramento Area Sewer District (SASD) and Sacramento Regional County Sanitation District (Regional San). SASD's 12-inch sewer line in Del Paso Road was designed to provide service to the property and would be connected to the school via the main access road. SASD's conveyance facilities connect to Regional San conveyance facilities and regional wastewater treatment plant near Elk Grove. Both SASD and Regional San have stated they will serve the property and connect it to the existing sewer system. Potable and fire protection water supply are available to the school by extending existing infrastructure in Westlake Parkway. The City of Sacramento will provide water through an agreement with NUSD, along with encroachment permit conditions, maintenance easements, and compliance with relevant City improvement

standards. With approval of the City’s Director of Utilities, irrigation water will also be provided by the City. The Sacramento Fire Department Service Area includes the school site (City of Sacramento 2015a).

Key Strategies of the General Plan

Among the “Key Strategies of the General Plan” is a section related to “Public Facilities to Serve Existing Communities and Complement New Growth” (General Plan Executive Summary, page 16). Paso Verde Elementary School would serve *existing communities* (rather than new growth). In this section, the County notes that:

The General Plan recognizes that public infrastructure and facilities such as water, sewer, roads, drainage, schools and parks must keep pace with population growth and development. The Plan emphasizes three critical aspects of service provision: adequacy, timing and equitable financing.

Land Use Designations

The project site and adjacent lands to the north, west, and south are designated as Agricultural Cropland in the County General Plan (Exhibit 3.10-2). The County General Plan defines this land use designation as follows:

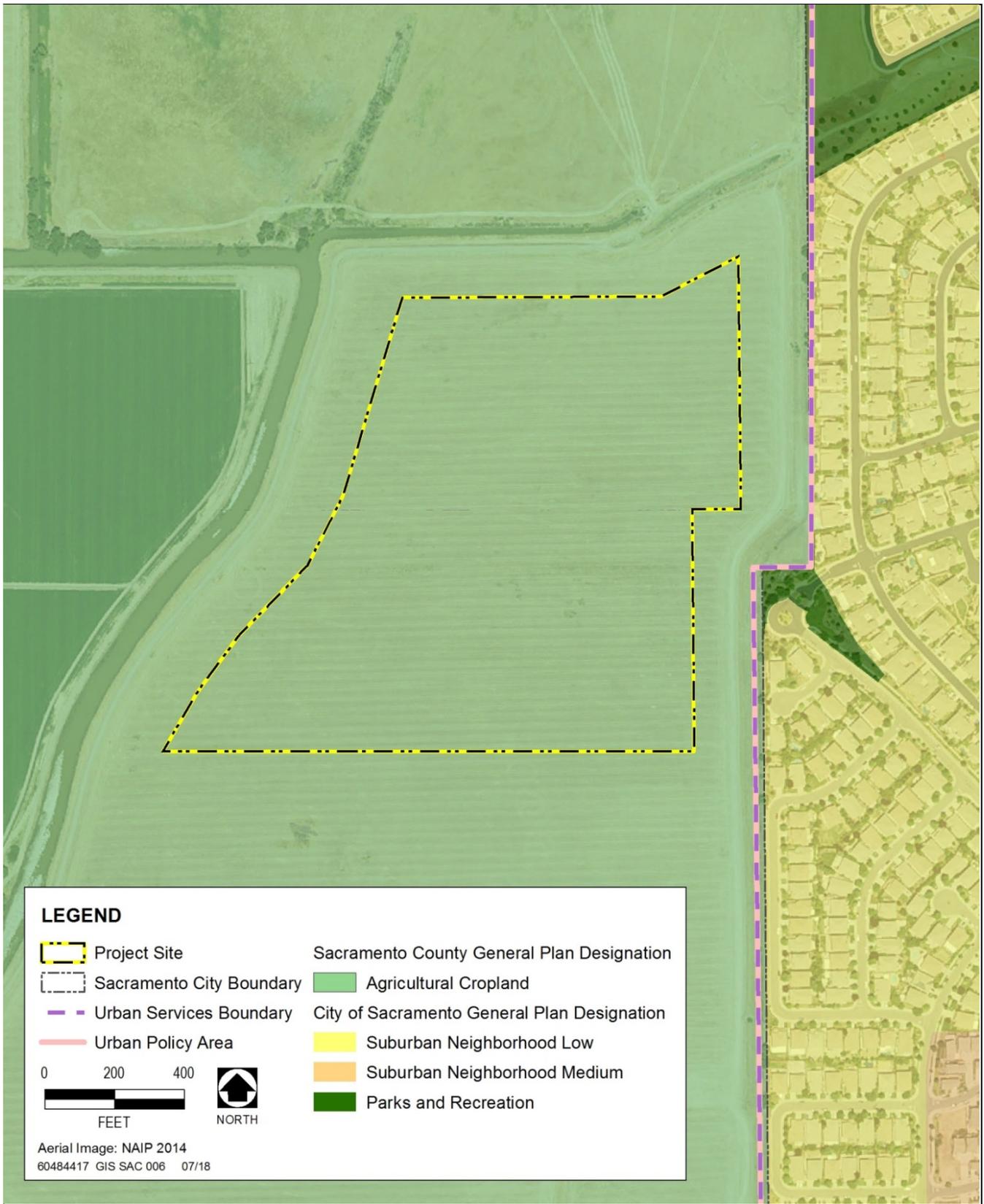
The Agricultural Cropland designation represents agricultural lands most suitable for intensive agriculture. The agricultural activities included are row crops, tree crops, irrigated grains, and dairies. The designation is generally limited to areas where soils are rated from Class I to Class IV by the Soil Conservation Service, or for farmlands classified as Prime, Statewide, or Unique significance by the California Department of Conservation. The Agricultural Cropland designation allows single family dwelling units at a density no greater than 40 acres per unit (Sacramento County 2011).

The Paso Verde property is designated as Agricultural Cropland in the General Plan.⁵ This designation is intended for “row crops, tree crops, irrigated grains and dairies” (Sacramento County General Plan Land Use Element, page 12). The County’s Zoning Code implements the General Plan, and was updated after the County’s General Plan Update. Public schools are allowed by right within the school property’s zoning district.

The County uses the Cemetery, Public/Quasi-Public land use designation to identify areas for educational and other public use. However, not all schools would be expected to have this designation. This is because at the countywide level, some of these facilities would be too small to show up. This implies that there would be schools and other public facilities that would have a different land use designation. From the County’s Land Use Element, page 12:

Cemetery, Public/Quasi-Public. The Public/Quasi-Public designation establishes areas for uses such as education, solid and liquid waste disposal, and cemeteries... Some facilities (e.g., elementary schools and fire stations) are too small or numerous to show on the Land Use Diagram, but may be identified on other diagrams in the Plan.

5 According to the General Plan Land Use Map posted to the County’s website (http://www.per.saccounty.net/Documents/Maps/GPLU_2030_UPDATED_FINAL_120613_sm.pdf).



Source: Sacramento County 2011

Exhibit 3.10-2 Land Use Designations from the County and City General Plans

The proposed project does not require a General Plan land use designation change.

The Land Use Element in the County General Plan (Sacramento County 2011) contains specific goals, objectives, and policies for evaluating a proposed project's compatibility with surrounding land uses. The following goals and policies are related to land use and, although they do not apply to the project, they provide context for the reader:

- ▶ **Goal:** Direct new growth to previously urbanized areas, planned growth areas and strategically located new growth areas to promote efficient use of land, to reduce urban sprawl and its impacts, to preserve valuable environmental resources, and to protect agricultural and rangeland operations.
 - **Objective:** Reserve the land supply to amounts that can be systematically provided with urban services and confine the ultimate urban area within limits established by natural resources.
 - **Policy LU-1:** The County shall not provide urban services beyond the Urban Policy Area, except when the County determines the need for health and safety purposes.
 - **Policy LU-2:** The County shall maintain an Urban Service Boundary that defines the long-range plans (beyond twenty five years) for urbanization and extension of public infrastructure and services, and defines important areas for protecting as open space and agriculture.
- ▶ **Goal:** Land use patterns that maximize the benefits of new and existing development while maintaining the quality, character, and identity of neighborhood and community areas.
 - **Policy LU-19.** Incompatible urban land uses should be buffered from one another by methods that retain community character, and do not consume large land areas or create pedestrian barriers.
- ▶ **Goal:** Ensure the continual vitality and long-term viability of airports in Sacramento County to serve current and future air transportation demand through careful and appropriate land use planning around airports, consistent with Federal Aviation Administration (FAA) regulations and grant-in-aid obligations, adopted airport master plans, and Airport Land Use Compatibility Plans. Ensure siting and design of new air transportation facilities are safe, efficient, and compatible with existing and planned facilities and land uses.
 - **Policy LU-87.** Because land use decisions around airports by local governments have a direct impact on an airport's long-term viability and utility, proposed new land use projects and land use practices near airports within Sacramento County shall consider consistency with current federal, State, and local airport land use compatibility regulations, orders, policies, plans, standards and guidance pertaining to public safety and minimization of hazardous wildlife attractants within five statute miles of County airports.

Sacramento County Zoning Code

The Sacramento County Zoning Code (Sacramento County 2016) was developed to encourage the most appropriate use of land; to conserve, protect, and stabilize the value of property; to provide adequate open spaces for light and air; to prevent undue concentration of population; to lessen congestion on the streets; to facilitate adequate provisions for community utilities such as transportation, water, sewerage, schools, parks, and other publicly owned facilities; and to promote the public health, safety, and general welfare.

The Paso Verde Elementary School property is zoned by Sacramento County as AG-80 (Agricultural, 80-acre minimum lot size) (Exhibit 3.10-3).⁶ K through 12 public schools are a permitted land use within the AG-80 zoning district (see Table 3.1 in Title III of the Sacramento County Zoning Code, Section 3.2.5, “Allowed Uses in All Zoning Districts”). Based on review of the Sacramento County Zoning Code, development of the Paso Verde Elementary School on the property is consistent with the AG-80 zoning.

Lands east of the project site are located outside of Sacramento County in the City of Sacramento and are governed by the City of Sacramento Zoning Code.

Natomas Vision Plan

Previously, the City of Sacramento and the County of Sacramento had a Memorandum of Understanding (MOU), called the Natomas Joint Vision, which described the process for planning the Natomas area outside the City of Sacramento, including the area in which the school site is located. However, Sacramento County is now exclusively directing the Vision Plan and is currently focused on the North Precinct Master Plan portion of the overall Vision Plan area, which does not include the school site.⁷

While the North Precinct Master Plan portion of the Vision Plan is expected to provide school sites to accommodate proposed development in this plan within the Twin Rivers Unified School District and Elverta Joint Elementary School District, this process does not provide an avenue for the Natomas Unified School District to accommodate the needs of its current or forecast population.

The North Precinct Master Plan (which is unrelated to this proposed project) would require an amendment to the USB, an amendment to the UPA to include this area, and an amendment to the General Plan Land Use Diagram to revise from Agricultural Cropland to urban land use designations.⁸

North Natomas Community Plan

The City of Sacramento Board of Supervisors adopted the North Natomas Community Plan on March 3, 2015 (City of Sacramento 2015b). The North Natomas Community Plan is part of the City General Plan. It supplements the City General Plan policies based on conditions and issues unique to North Natomas.

The North Natomas Community Plan envisions an urban form for North Natomas that includes a well-integrated mixture of residential, employment, commercial and civic uses, interdependent on quality transit service and a radial network of connections linking activity centers with streets, transit routes, and linear parkways with pedestrian/bike trails.

⁶ Sacramento County’s Online Map resource was used on January 25th, 2017 to confirm the current zoning district for the proposed school site (http://generalmap.gis.saccounty.net/JSViewer/county_portal.html#). This is for APN 225-0030-065-0000.

⁷ The County has released the Notice of Preparation for an environmental impact report addressing the Natomas North Precinct Master Plan portion of the Natomas Vision Plan area. <http://www.per.saccounty.net/PlansandProjectsIn-Progress/Documents/Natomas%20Joint%20Vision/2016-04-28%20North%20Precinct%20NOP.pdf>

⁸ Required entitlements are detailed in the County’s Notice of Preparation for the North Precinct Master Plan Environmental Impact Report. <http://www.per.saccounty.net/PlansandProjectsIn-Progress/Documents/Natomas%20Joint%20Vision/2016-04-28%20North%20Precinct%20NOP.pdf>



Source: Sacramento County Zoning Designations 2009, City of Sacramento Zoning Designations 2018

Exhibit 3.10-3 Zoning Designations

The North Natomas Community Plan stated a new high school would be required west of Interstate 5 to serve students generated by new housing and identified potential sites, including the project site (Policy NN.ERC 1.15 of the North Natomas Community Plan). As discussed in Section 2.4, “Background and Need for the Project,” of Chapter 2, “Project Description,” the project site was originally envisioned as a high school. However, NUSD’s increasing enrollment and overcrowding of elementary and middle schools within the vicinity of the project site has resulted in the need for a new elementary/middle school to accommodate existing students and to accommodate population growth.

3.10.3 ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

ANALYSIS METHODOLOGY

The evaluation of potential land use impacts was based on a review of the Sacramento County General Plan and zoning ordinance, the City of Sacramento General Plan and zoning ordinance, and the Sacramento International ALUCP (2013), field reconnaissance, and consultation with appropriate agencies. The physical impacts of the project of land use/development on site resources (e.g., biological resources) are addressed in each technical section of this EIR.

THRESHOLDS OF SIGNIFICANCE

According to Appendix G of the CEQA Guidelines, the proposed project would have a significant impact related to land use and planning if implementation of the proposed project would:

- ▶ physically divide an established community;
- ▶ conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project adopted for the purpose of avoiding or mitigating an environmental effect;
- ▶ conflict with any applicable habitat conservation plan or natural community conservation plan;
- ▶ induce substantial population growth in an area, either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., through extension of roads or other infrastructure); or
- ▶ displace substantial numbers of people or existing housing, necessitating the construction of replacement housing elsewhere.

IMPACTS NOT DISCUSSED FURTHER

Physically Divide an Established Community—No housing is on the project site and no housing would be removed as a part of the proposed project; therefore, the proposed project would not divide an established community. Therefore, this impact is not evaluated further.

Consistency with Sacramento County General Plan and Zoning Ordinance—The Paso Verde property is designated as Agricultural Cropland in the General Plan and zoned AG-80. The County’s Zoning Code implements the General Plan, and was updated after the County’s General Plan Update. Public schools are allowed by right within the school property’s zoning district. Thus, the proposed project would be consistent with Sacramento County General Plan and Zoning Ordinance, and this impact is not evaluated further.

Induce Substantial Population Growth—The proposed project would not involve constructing new homes or businesses that would generate new population growth. Construction is expected to occur in 2019 and 2020. The source of the construction labor force is unknown at this time, but workers would come from the local labor pool, as the District has a local hiring policy. A portion of the school’s approximately 40 teachers and 20 staff could move from outside the school district; however, most positions would be filled by existing residents and transfers from within the district. The school would have a capacity for up to 1,000 students in grades K through 8. The school’s initial student population would be moved from a temporary location recently established at 3800 Del Paso Road to address crowding, and then its remaining capacity would be filled by planned growth within the school’s service boundary. In addition, the proposed project would not include extension of roads or other infrastructure that could facilitate substantial development. Infrastructure is sized and designed to meet the needs of the proposed school only. Chapter 5, “Other CEQA,” provides an additional discussion of the proposed project’s potential for growth inducement. Therefore, this impact is not evaluated further.

Displace Substantial Numbers of People or Existing Housing—Because there are no existing residences within the project site, the proposed school project would not result in displacement or relocation of any residents. Therefore, the proposed project would not displace substantial numbers of people or existing housing that would necessitate the construction of replacement housing elsewhere. Thus, this impact is not evaluated further.

IMPACT ANALYSIS

IMPACT 3.10-1 Consistency with Sacramento International Airport Land Use Compatibility Plan. *Because the proposed project does not result in safety and noise compatibility concerns and does not include land uses that would result in flight hazards, the proposed project would be consistent with the Sacramento International ALUCP. Therefore, this impact would be less than significant.*

The Sacramento ALUCP indicates that the project site is located within the AIA and is identified as being located within Referral Area 1, which encompasses locations where noise and/or safety represent compatibility concerns. Therefore, construction of the proposed school requires review by the ALUC for noise and safety compatibility.

Policy 3.1.1 of the ALUCP identifies criteria for evaluating new development. The policy references noise, safety, airspace protection, overflight, and other compatibility policies set forth in Sections 3.2 through 3.5 and in Section 4; references criteria listed in Table 1, “Noise Compatibility Criteria” and Table 2, “Safety Compatibility Criteria;” and refers to compatibility zones depicted on the Compatibility Policy Maps.

Section 3.8, “Hazards and Hazardous Materials” of this EIR addresses safety hazards based on safety compatibility criteria shown in Table 2 of the ALUCP. As shown on the Compatibility Policy Maps in the ALUCP and on Exhibit 3.8-1 in Section 3.8, the project site is located within Safety Zone 4 and Safety Zone 6. Impact 3.8-3 discusses safety concerns as it pertains to the project site being within these safety zones. As concluded in Section 3.8, impacts associated with safety hazards and compatibility would be less than significant.

Section 3.11, “Noise and Vibration,” of this EIR addresses noise compatibility associated with the proposed project. Table 3.11-8 in Section 3.11, “Noise and Vibration,” of this EIR provides the noise compatibility criteria shown in Table 1 of the ALUCP. Exhibits 3.11-3 and 3.11-4 show the project site’s location within the existing noise contours and future noise contours, respectively. Impact 3.11-5 addresses compatibility concerns as it

pertains to the project site being within the future 60-65 CNEL noise contour. As discussed in detail in Section 3.11, impacts associated with noise compatibility would be less than significant.

Section 4.2 of the ALUCP addresses site-specific exemptions. Policy 4.2.1 states site-specific exemptions and criteria may be applied to certain projects that warrant special conditions as envisioned by Policy 4.1.5. Under Policy 4.1.5, the ALUCP explains that the Airport Land Use Commission can find a normally incompatible use to be compatible with findings that the land use will neither (1) create a safety hazard to people on the ground or aircraft in flight nor (2) result in excessive noise exposure for the proposed use. The proposed site plan does not place buildings within Safety Zone 4 of the Sacramento International Airport Land Use Compatibility Plan. However, the playing fields would be located in Safety Zone 4. SACOG considers the playing fields as “Group Recreation,” and the ALCUP conditionally allows athletic fields under this land use category (Chew, pers. comm., 2018). All buildings would be placed in Safety Zone 6 where K–12 schools are a normally compatible use. (See Section 3.8, “Hazards and Hazardous Materials” for further discussion of safety zones.)

An additional element of land use compatibility is ensuring that land use characteristics do not result in flight hazards. Airspace protection considers land uses that include:

- ▶ features, during or following construction that would increase the attraction of birds or cause other wildlife hazards to aircraft operations at the Airport or in its environs;
- ▶ objects (including buildings, poles, antennas, and other structures) having a height that requires review by the Federal Aviation Administration in accordance with Part 77 of the FAR.
- ▶ visual hazards of concern including certain types of lights, sources of glare, and sources of dust, steam, or smoke; and
- ▶ electronic hazards which may cause interference with aircraft communications.

The creations of new sources of glare and light are addressed in Section 3.1, Aesthetics.” Issues with dust or other emissions are addressed in Section 3.3, “Air Quality.” As discussed in Section 3.8, “Hazards and Hazardous Materials,” the proposed project does not include sources of electronic interference or installation of poles, antennas. The on-site detention pond would not attract birds or other wildlife since it would drain within a maximum of 48 hours.

Because the proposed project does not result in safety and noise compatibility concerns or include land uses that would result in flight hazards, the proposed project would be consistent with the Sacramento International ALUCP. Therefore, this impact would be **less than significant**.

Mitigation Measures

No mitigation measure is required.

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3.11 NOISE AND VIBRATION

3.11.1 INTRODUCTION

This section evaluates the potential effects of noise and vibration associated with school construction and operation. It summarizes the applicable noise regulations and describes ambient noise conditions near the project site. The environmental effects evaluation analyzes the noise impacts associated with the proposed project, including short-term impacts of construction of school buildings and playgrounds, long-term impacts from operation of school facilities, and traffic noise increases along area roadways. This section also evaluates the compatibility of on-site and surrounding land uses with projected on-site noise levels, and land use compatibility relative to applicable noise criteria.

ACOUSTIC FUNDAMENTALS

Acoustics evaluates perception, propagation, absorption, and reflection of sound waves. Sound is a mechanical form of radiant energy, transmitted by a pressure wave through a solid, liquid, or gaseous medium. Sound that is loud, disagreeable, unexpected, or unwanted is generally defined as noise; consequently, the perception of sound is subjective in nature and can vary substantially from person to person. Common environmental noise sources and noise levels are presented in Exhibit 3.11-1.

Outdoor Noise Source	Noise Level (dBA)	Indoor Noise Source
	— 110 —	Rock band
Jet fly-over at 1000 feet	— 100 —	
Gas lawn mower at 3 feet	— 90 —	
Diesel truck at 50 feet at 50 mph	— 80 —	Food blender at 3 feet Garbage disposal at 3 feet
Noisy urban area, daytime	— 70 —	Vacuum cleaner at 10 feet Normal speech at 3 feet
Gas lawn mower, 100 feet Commercial area	— 60 —	Large business office Dishwasher next room
Heavy traffic at 300 feet	— 50 —	
Quiet urban daytime	— 40 —	Theater, large conference room (background)
Quiet urban nighttime	— 30 —	Library
Quiet suburban nighttime	— 20 —	Bedroom at night, concert hall (background)
Quiet rural nighttime	— 10 —	Broadcast/recording studio
Lowest threshold of human hearing	— 0 —	Lowest threshold of human hearing

Source: Caltrans 2013.

Exhibit 3.11-1 Typical Noise Levels

A sound wave is initiated in a medium by a vibrating object (e.g., vocal chords, the string of a guitar, the diaphragm of a radio speaker). The wave is comprised of minute variations in pressure, oscillating above and below the ambient atmospheric pressure. The number of pressure variations occurring per second is referred to as the frequency of the sound wave and is expressed in hertz, which is equivalent to one complete cycle per second.

Directly measuring sound pressure fluctuations at different frequencies would require the use of a very large and cumbersome range of numbers. To avoid this and have a more useable measurement system, the decibel (dB) scale was introduced. A sound level expressed in decibels is the logarithmic ratio of two like pressure quantities, with one pressure quantity being a reference sound pressure. For sound pressure in air, the standard reference quantity is generally considered to be 20 micropascals, which directly corresponds to the threshold of human hearing. The use of the decibel is a convenient way to handle the millionfold range of sound pressures to which the human ear is sensitive. A decibel is logarithmic. As such, it does not follow normal algebraic methods and cannot be directly added. For example, a 65 dB source of sound, such as a truck, when joined by another 65 dB source results in a sound amplitude of 68 dB, not 130 dB (i.e., doubling the source strength increases the sound pressure by 3 dB). A sound level increase of 10 dB corresponds to 10 times the acoustical energy, and an increase of 20 dB equates to a 100-fold increase in acoustical energy.

The loudness of sound perceived by the human ear depends primarily on the overall sound pressure level and frequency content of the sound source. The human ear is not equally sensitive to loudness at all frequencies in the audible spectrum. To better relate overall sound levels and loudness to human perception, frequency-dependent weighting networks were developed. The standard weighting networks are identified as A through E. A strong correlation exists between the way humans perceive sound and A-weighted sound levels (dBA). For this reason, the dBA can be used to predict community response to noise. Sound levels expressed as dB in this section are A-weighted sound levels, unless noted otherwise.

Noise can be generated by a number of sources, including mobile sources (automobiles, trucks, and airplanes), and stationary sources (construction sites, machinery, commercial and industrial operations). As acoustic energy spreads through the atmosphere from the source to the receptor, noise levels attenuate (reduce) depending on ground absorption characteristics, atmospheric conditions, and the presence of physical barriers (walls, building façades, berms). Noise generated from mobile sources generally attenuates at a rate of 4.5 dB per doubling of distance. Stationary noise sources spread with more spherical dispersion patterns, which attenuate at a rate of 6 dB to 7.5 dB per doubling of distance.

Atmospheric conditions such as wind speed, turbulence, temperature gradients, and humidity may additionally alter the propagation of noise and affect levels at a receptor. Furthermore, the presence of a large object (barrier) between the source and the receptor can provide significant attenuation of noise levels at the receptor. The amount of noise level reduction or “shielding” provided by a barrier primarily depends on the size (height) of the barrier, the location of the barrier in relation to the source and receptors, and the frequency spectra of the noise. Natural barriers such as berms, hills, or dense woods, and human-made features such as buildings and walls may be used as noise barriers.

NOISE DESCRIPTORS

The intensity of environmental noise changes over time. This section uses several different descriptors of time-averaged noise levels. The selection of a proper noise descriptor for a specific source depends on the spatial and

temporal distribution, duration, and fluctuation of both the noise source and the environment. The noise descriptors most often used to describe environmental noise are defined below:

- ▶ L_{\max} (Maximum Noise Level): The highest A/B/C-weighted, integrated noise level occurring during a specific period of time.
- ▶ L_{\min} (Minimum Noise Level): The lowest A/B/C-weighted, integrated noise level during a specific period of time.
- ▶ Peak: The highest weighted or unweighted, instantaneous, peak-to-peak value occurring during a measurement period.
- ▶ L_n (Statistical Descriptor): The noise level exceeded n% of a specific period of time, generally accepted as an hourly statistic. An L_{10} would be the noise level exceeded 10% of the measurement period.
- ▶ L_{eq} (Equivalent Noise Level): The energy mean (average) noise level, the steady state sound level in a specified period of time that contains the same acoustical energy as a varying sound level over the same time period.
- ▶ L_{dn} (Day-Night Noise Level): The 24-hour L_{eq} with a 10 dB “penalty” applied during nighttime noise-sensitive hours between 10:00 p.m. and 7:00 a.m. The L_{dn} attempts to account for the fact that noise during this specific period of time is a potential source of disturbance with respect to normal sleeping hours.
- ▶ CNEL (Community Noise Equivalent Level): The CNEL is similar to the L_{dn} described above, but with an additional 5 dB “penalty” for the noise-sensitive hours between 7:00 p.m. and 10:00 p.m., which are typically reserved for relaxation, conversation, reading, and other noise-sensitive activities. If using the same 24-hour noise data, the CNEL is typically 0.5 dB higher than the L_{dn} .
- ▶ SEL (Sound Exposure Level): The SEL describes the cumulative exposure to sound energy over a stated period of time.

NOISE EFFECTS ON HUMANS

Excessive and chronic exposure to elevated noise levels can result in auditory and nonauditory effects in humans. Auditory effects of noise on people are those relating to temporary or permanent noise-induced hearing loss. Nonauditory effects of exposure to elevated noise levels are those relating to behavioral and physiological effects. The nonauditory behavioral effects of noise on humans are primarily associated with the subjective effects of annoyance, nuisance, and dissatisfaction, which lead to interference with activities such as communications, sleep and learning. The nonauditory physiological health effects of noise on humans have been the subject of considerable research efforts attempting to discover correlations between exposure to elevated noise levels and health problems, such as hypertension and cardiovascular disease. Most research infers that noise-related health issues are predominantly the result of behavioral stressors (physiological) and not a direct noise-induced response. The degree to which noise contributes to nonauditory health effects remains a subject of considerable research.

The degree to which noise results in annoyance and interference with activities is highly subjective and may be influenced by a number of nonacoustic factors. The number and effect of these nonacoustic environmental and physical factors vary depending on the individual characteristics of the noise environment, including sensitivity,

level of activity, location, time of day, and length of exposure. One key aspect in the prediction of human response to new noise environments is the individual level of adaptation to an existing noise environment. The greater the change in noise levels caused by a new noise source, relative to the environment an individual has become accustomed to, the less tolerant the individual will be to the new noise source.

With regard to the human perception of increases in sound levels expressed in dB, a change of 1 dB is generally not perceivable, excluding controlled conditions and pure tones. Outside of controlled laboratory conditions, the average human ear barely perceives a change of 3 dB. A change of 5 dB generally fosters a noticeable change in human response, and an increase of 10 dB is subjectively heard as a doubling of loudness.

AIRCRAFT NOISE EFFECTS ON CORE LEARNING SPACES

Aircraft overflights may cause noise issues related to learning. The L_{dn} /CNEL is often used in an evaluation of impacts related to new development. This is appropriate when evaluating residential developments since the noise is weighted to account for sleep interruption and annoyance, as described by Schultz's 1978 exposure-response curve (Schultz 1978). However, differing noise sources (e.g., traffic, rail, aircraft) do not fit the exposure-response curve, and land uses primarily occupied during the daytime (e.g., offices, schools, commercial uses) may require a different metric to evaluate noise, taking into account speech interruption. Studies have been conducted to evaluate effects of single-event noise (e.g., aircraft overflights) on core learning spaces. Sentence intelligibility in the classroom is vital to learning, and different metrics may be warranted to accurately predict impacts associated with aircraft overflights, such as peak-hour L_{eq} , speech interference level, L_{max} , and SEL. More research is necessary to scientifically prove that a single-event response curve is appropriate rather than the current exposure-response curve because response curves vary for aircraft, road, and rail noise (TRB 2008). Presently, there are no metrics of sufficient scientific standing to replace the DNL standard. The Community Noise Equivalent Level (CNEL) may be used in lieu of DNL for FAA actions needing approval in California (FAA 2015).

Speech interruption due to noise events may reduce speech intelligibility and sentence comprehension, disrupt the signal-to-noise ratio, decrease learning and teaching motivation, and adversely affect the overall learning process. For these reasons, the California Department of Education (CDE) requires that background noise from traffic and other sources be considered in the site selection and approval process for schools (CDE 2017). According to CDE site selection criteria, the American Speech-Language-Hearing Association (ASLHA) guidelines recommend that classroom background noise not rise above 30 decibels (CDE 2017). The World Health Organization (WHO) recommends a maximum level of 35 dB L_{eq} for 100 percent speech intelligibility. Speech can be fairly well understood with background noise levels of 45 dB L_{eq} (WHO 1999: 38). Some researchers recommend of an interior noise level criterion of 64 dB SEL per event for estimating speech interference and an L_{max} of 50 dB (PSU 2009).

VIBRATION

The human body responds to the vibration velocity's average amplitude. A vibration decibel notation is commonly used to describe vibration. The vibration velocity level (VdB) is reported in decibels relative to a level of 1×10^{-6} inches per second.¹

¹ Vibration is an oscillatory motion that can be described in terms of displacement, velocity, or acceleration. Because the motion is oscillatory, no net movement of the vibration element occurs, and the average of any of the motion descriptors is zero. For vibration, velocity represents the instantaneous speed of the motion and acceleration is the speed's rate of change.

In contrast to airborne noise, ground-borne vibration is not a phenomenon that most people experience every day. The background vibration velocity level in residential areas is usually 50 VdB or lower, well below the threshold of human perception (around 65 VdB).

3.11.3 ENVIRONMENTAL SETTING

The existing noise environment is primarily influenced by aircraft noise emanating from Sacramento International Airport and noise from seasonal agricultural activity. Noise from outdoor activities (e.g., people talking, landscape maintenance, dogs barking) also contribute to the noise environment.

AMBIENT NOISE SURVEY

An ambient noise survey was conducted on April 26–27, 2016, to document existing noise sources and the existing noise environment at noise-sensitive receptors in the vicinity of the project site. The dominant noise source identified during the ambient noise survey was aircraft noise from commercial airplanes taking off from the eastern runway at the Sacramento International Airport. Short-term (15 minutes) measurements were taken and continuous 24-hour, long-term monitoring of noise levels was conducted at one location approximately 300 feet north of the project site boundary (Exhibit 3.11-2).²

The L_{eq} , L_{max} , and L_{50} values taken at each ambient noise measurement location are presented in Table 3.11-1. During the survey, average daytime hourly noise levels the vicinity of the project site ranged from 39.9 dB to 56.4 dB L_{eq} , with maximum noise levels that ranged from 51.0 dB to 76.5 dB L_{max} . The existing noise levels, time averaged, for just school hours from 8am to 3pm, would be 56.6 dB L_{eq} , with maximum noise level of 75.2 dB L_{max} .

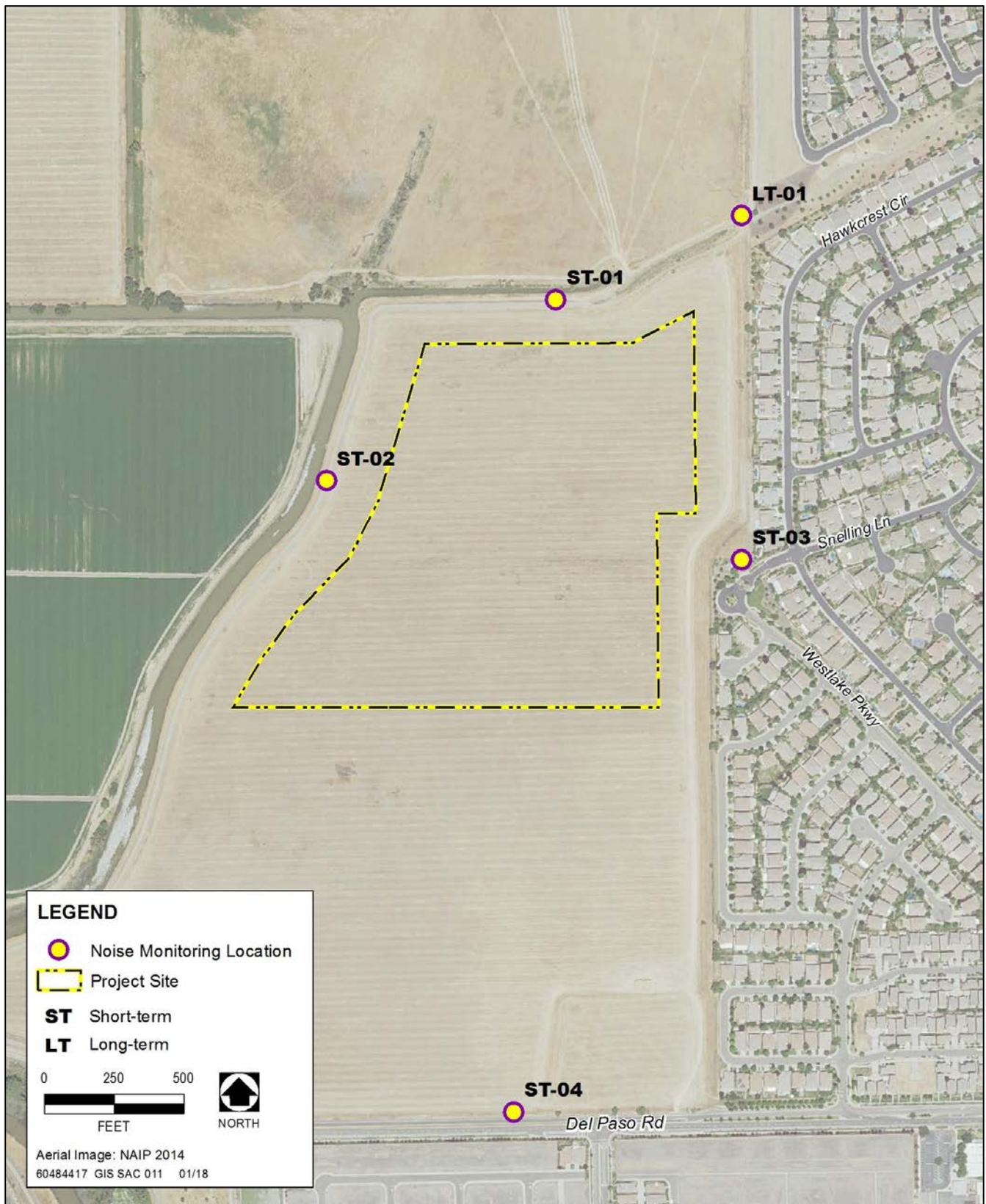
**Table 3.11-1.
Ambient Noise Survey Measurements**

Site	Noise Sources	CNEL	Average Measured Hourly Noise Levels, dB								
			Daytime (7 a.m.–7 p.m.)			Evening (7 p.m.–9 p.m.)			Nighttime (9 p.m.–7 a.m.)		
			L_{eq}	L_{50}	L_{max}	L_{eq}	L_{50}	L_{max}	L_{eq}	L_{50}	L_{max}
LT - 01	Aircraft, neighborhood activities	57.2	57.4	42.9	75.6	51.3	42.6	69.9	47.3	42.8	58.7
ST - 01	Aircraft, distant I-5 traffic	—	54.3	43.2	74.0	—			—		
ST - 02	Neighborhood activities (lawn mower)	—	56.8	46.2	73.5	—			—		
ST - 03	Aircraft, neighborhood activities	—	56.1	54.8	63.8	—			—		
ST - 04	Aircraft, Del Paso Road traffic	—	58.8	50.7	79.4	—			—		

Notes: CNEL = Community Noise Equivalent Level; dB = A-weighted decibels; L_{eq} = the equivalent hourly average noise level; L_{50} = noise level exceeded 50% of a specific period of time; L_{max} = maximum noise level; LT = Long-term; ST= Short-term; — = noise measurement data not available.

Source: Data compiled by AECOM in 2016.

² Short-term (15 minutes) measurements of noise levels were taken in accordance with ANSI standards at four locations using a Larson Davis Laboratories (LDL) Model 824 precision integrating sound-level meter. Continuous 24-hour, long-term monitoring of noise levels was conducted using an LDL Model 820 sound-level meter. The sound-level meters were calibrated before and after use with an LDL Model CAL200 acoustical calibrator to ensure that the measurements were accurate. The equipment used meets all pertinent ANSI specifications for Type 1 sound level meters.



Source: Adapted by AECOM in 2016

Exhibit 3.11-2 Ambient Noise Survey Measurements and Locations

TRAFFIC NOISE

Traffic noise is not the dominant noise source on the project site, but traffic noise from Interstate 5 (I-5) and Del Paso Road is audible. Existing vehicle traffic noise levels near the project site were modeled using the Federal Highway Administration (FHWA) Highway Traffic Noise Prediction Model (FHWA-RD-77-108) and traffic data collected to define existing traffic levels (see Section 3.13, “Traffic and Transportation”).³

Table 3.11-2 summarizes the modeled traffic noise levels, provides noise levels at 50 feet from the centerline of each major roadway in the immediate vicinity of the project site, and lists distances from the roadway centerlines to the 60 dB, 65 dB, and 70 dB L_{dn} traffic noise contours. These traffic noise modeling results are based on existing average daily traffic (ADT) volumes provided in the traffic impact study for the project. As shown in Table 3.11-2, the location of the 60 dB L_{dn} contour ranges from 1 to 942 feet from the centerline of the modeled roadways. The extent to which receptors in the vicinity of the project site are affected by existing traffic noise depends on their respective proximity to the roadways and their individual sensitivity to noise.

EXISTING AIRCRAFT NOISE

Aircraft operations at the Sacramento International Airport during departures and arrivals were evaluated for two conditions: north flow (when winds are blowing from the north) and south flow (when winds are blowing from the south). Depending on daily wind conditions, where aircraft depart and arrive into the current wind direction, the project site would be exposed to aircraft flights directly overhead and attributable to aircraft departures during south flow conditions, which is the prevailing wind condition (75 percent of the time during the year). North flow conditions would not expose the project site to aircraft flying overhead from departures or arrivals. Aircraft typically fly over the project site at a range of 1,300–4,500 feet above ground.

Based on field observations, the sound level meter at noise measurement site LT-01 was programmed to collect single-event aircraft overflights. The sound level meter was programmed to record a separate data file when an individual aircraft approached the site exceeding 60 dB for a duration of 2 seconds or more, measuring the duration, L_{max} , and single-event noise exposure level for each event. Table 3.11-3 shows the number of aircraft overflight events per hour, the average duration (second) of an event, the percentage of an hour affected by cumulative events, and the resulting exterior SELs and L_{max} .

The Sacramento Area Council of Governments (SACOG) has been designated the Airport Land Use Commission for Sacramento, Sutter, Yolo, and Yuba counties. In December 2013, SACOG adopted the *Sacramento International Airport Land Use Compatibility Plan* (LUCP). The existing noise contours within the 2013 Sacramento International Airport LUCP report have been updated and are presented in Sacramento International Airport Land Use Compatibility Plan (Sacramento 2013). Noise contours for the existing airport activity are shown in Exhibit 3.11-3. As shown, the noise-sensitive areas within the project site (classrooms, playgrounds, and sports fields) are located outside the 60 to 65 dBA CNEL contour lines. The Referral Area shown in Exhibit 3.11-3 encompasses locations where noise and/or safety represent compatibility concerns.

³ The FHWA model is based on CALVENO reference noise factors for automobiles, medium trucks, and heavy trucks, with consideration given to vehicle volume, speed, roadway configuration, distance to the receptor, and ground attenuation factors.

**Table 3.11-2.
Summary of Modeled Levels of Existing Traffic Noise**

Roadway	Segment		L _{dn} (dB) 50 Feet	Distance (feet) from Roadway Centerline to L _{dn} Contour		
	From	To		70 dB	65 dB	60 dB
Power Line Road	Del Paso Road	South of Del Paso Road	57	3	9	28
Power Line Road	Del Paso Road	North of Del Paso Road	58	4	12	38
Del Paso Road	Power Line Road	West of Power Line Road				
Del Paso Road	Power Line Road	Hovnanian Drive	56	2	7	22
Hovnanian Drive	Del Paso Road	Natomas Central Drive	57	3	8	27
Hovnanian Drive	Del Paso Road	Project Site	0	10	32	102
Del Paso Road	Hovnanian Drive	Wyndview Drive	62	8	27	85
Wyndview Drive	Del Paso Road	Westlake Parkway	61	7	22	71
Del Paso Road	Wyndview Drive	Broadgate / Natomas Central Drive	68	37	117	371
Natomas Central Drive	Del Paso Road	Hovnanian Drive	60	6	18	56
Broadgate	Del Paso Road	Westlake Parkway	59	4	14	44
Del Paso Road	Broadgate / Natomas Central Drive	El Centro Road	69	48	151	478
El Centro Road	Del Paso Road	Bonfair Avenue	68	36	114	359
El Centro Road	Del Paso Road	Hawkview Drive	65	16	51	161
Del Paso Road	El Centro Road	I-5 NB Ramps	71	67	212	671
I-5 SB On-ramp	Del Paso Road	I-5 South of Del Paso Road	55	2	6	18
I-5 SB Off-ramp	I-5 North of Del Paso Road	Del Paso Road	59	5	15	49
Del Paso Road	I-5 SB Ramps	I-5 NB Ramps	63	11	34	109
I-5 NB Off-ramp	I-5 South of Del Paso Road	Del Paso Road	60	5	17	53
I-5 NB On-ramp	Del Paso Road	I-5 North of Del Paso Road	53	1	3	10
Del Paso Road	I-5 NB Ramps	East Commerce Way	72	94	298	942
East Commerce Way	Del Paso Road	South of Del Paso Road	65	19	60	189
East Commerce Way	Del Paso Road	North of Del Paso Road	67	29	91	287
Del Paso Road	East Commerce Way	East of East Commerce Way	69	42	132	417
Natomas Central Drive	Hovnanian Drive	Manera Rica Drive	60	6	18	57
Hovnanian Drive	Natomas Central Drive	Adriatic Sea Way	54	1	5	15

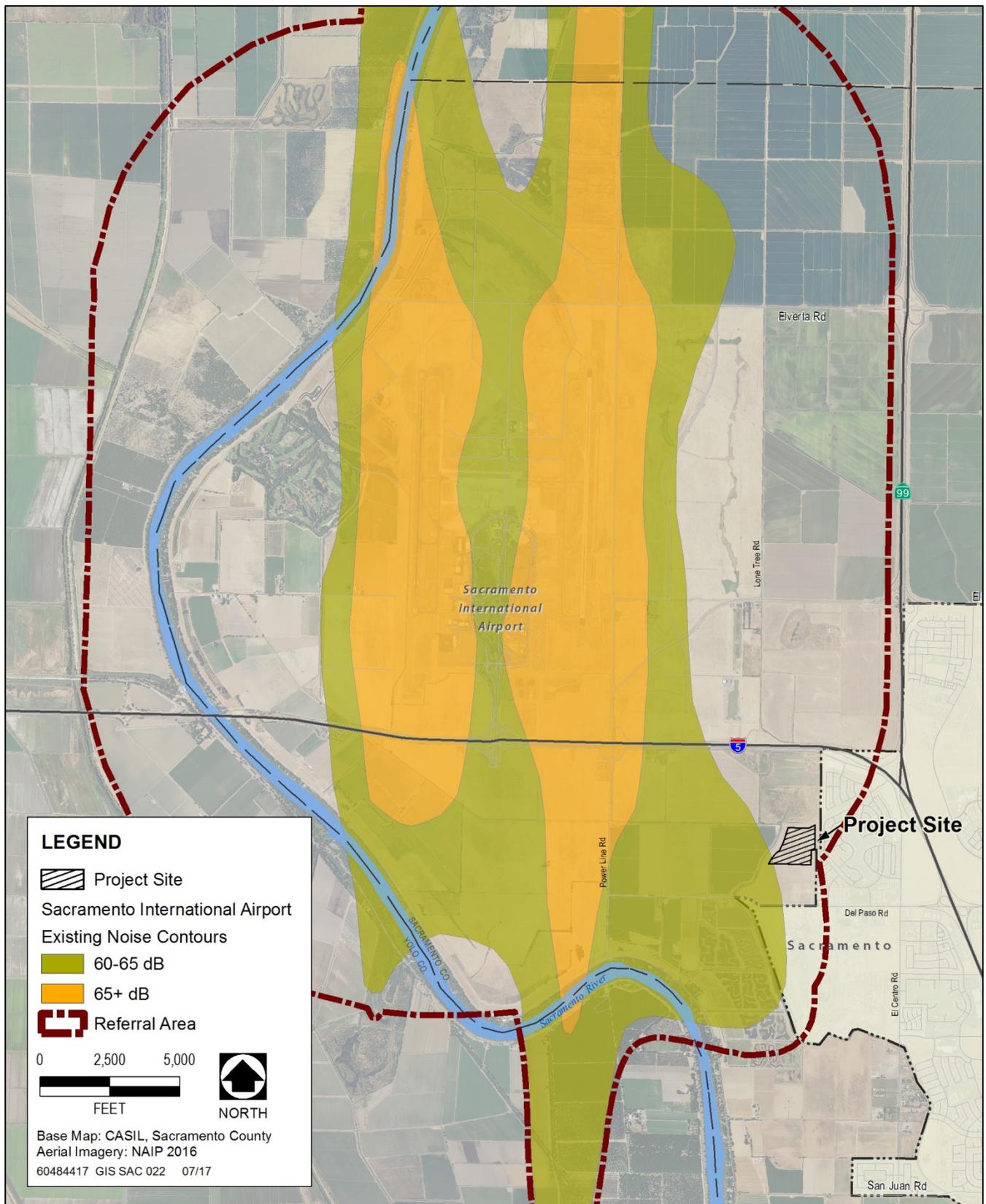
Notes: dB = A-weighted decibels; L_{dn} = day-night average noise level.

Source: Data modeled by AECOM in 2017

**Table 3.11-3.
Summary of Measured Single Event Aircraft Noise Levels, SEL (dB)**

Hour/ No.	7 AM	8 AM	9 AM	10 AM	11 AM	12 PM	1 PM	2 PM	3 PM	4 PM	5 PM
1	72.6	63.2	66.4	72.4	64.7	76.5	76.2	75.6	63.9	68.9	88.2
2	75.1	69.1	62.7	72.6	77.2	73.2	85.8	63.9	74.7	69.0	65.6
3	63.6	76.7	64.7	76.0	71.0	82.3	81.3	72.1	79.6		77.1
4	77.3	79.7	76.5	79.7	69.4	81.1	86.7	79.5	83.7		84.8
5	72.1	73.6	64.2	65.8	76.8	70.5	76.4	76	74.9		65.6
6	64.1	77.0	73.5		79.0	82.5	86	66.2	76.1		80.1
7	73.8	74.5	69.0		68.8	77.2	81	88.6	82.4		84.1
8	81.2		65.0		75.1	80.0	65.5	85.8	74.4		63.7
9	78.0		70.2		63.3	72.9	72.9	66.5	66.2		64.2
10	66.8				76.1	67.7	65.8	70.5	75.9		80.5
11					73.1	65.8	67.9	79.8	80.3		88
12					66.5	67.1	66.8	65			66.5
13					65.2	67.2	70.6	79			75.2
14					75.6	75.1	69.8	74.4			70.1
15						71.9	70.2	64.3			75.6
16						84.8	75.9	82.3			73.4
17						69.2	69.9	81.1			62.8
18						85.0	68	80.4			71.4
19						85.3	72.6	71.7			67.3
20						78.5	73.5	81.3			71.6
21						85.8	79.5	77			
22						65.8	73.7	64			
23						64.7		73.7			
24						78.4		78.3			
25						83.0		73.7			
26						77.1		63.4			
27						67.0		75.3			
28						79.0		85.8			
29						73.3		87.1			
30						67.0		61.8			
31						67.6		76			
32						69.0		74.5			
33						72.7		78			
34						83.6					
35						86.0					
L_{max}	72.1	69.6	67.8	71.8	70.9	79.0	82.8	80.3	78.4	66.8	81.4
L_{eq}	62.5	62.8	60.8	63.0	62.1	66.9	67.1	67.1	67.6	62.3	67.6
Average Duration	15.2	15.6	7.5	15.6	13.8	16.9	20.5	14.3	15.1	4.6	21.4
% of hour	4.2%	3.0%	1.9%	2.2%	5.4%	16.4%	12.5%	13.1%	4.6%	0.3%	11.9%

Notes: dB = A-weighted decibels; SEL = single event noise level; L_{max} = maximum noise level.
Source: Data modeled by AECOM in 2016



Source: Sacramento International Airport Land Use Compatibility Planning Noise Contours (Map on Website), 2017

Exhibit 3.11-3 Existing Noise Contours for the Sacramento International Airport

EXISTING LAND USES SENSITIVE TO NOISE

Land uses that are sensitive to noise generally include those uses where exposure to noise would result in adverse effects, and where quiet is an essential element of the intended purpose. The only existing off-site land use that would be sensitive to project-generated noise would be the single-family residences to the east of the project site. These residences could experience noise associated with project construction, increased traffic, and stationary sources emanating from school grounds (heating and cooling systems [HVAC], school children playing, and parking lot activities). Residences are of primary concern because residents could be exposed to increased and prolonged interior and exterior noise levels. Future on-site sensitive uses would include classrooms and offices.

3.11.2 REGULATORY CONTEXT

FEDERAL PLANS, POLICIES, REGULATIONS, AND LAWS

The U.S. Environmental Protection Agency (EPA), Office of Noise Abatement and Control, was originally established to coordinate federal noise control activities. After 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 and welfare and the environment. Administrators of EPA determined in 1981 that subjective issues such as noise would be better addressed at lower 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 the rulings by EPA in prior years remain upheld by designated federal agencies, while allowing more individualized control for specific issues by designated federal, state, and local government agencies.

The Acoustical Society of America develops, maintains, and revises its American National Standards on Acoustics in accordance with a procedure approved by the American National Standards Institute (ANSI). The use of ANSI standards is voluntary and does not apply to noise generated within the classroom (ANSI 2002:1). The analysis presented in this section, also uses the interior noise level standard to evaluate noise within classrooms from airport operational noise. Table 1 of ANSI S12.60-2002 establishes an interior noise level standard of 35 dB for core learning spaces. Core learning spaces are defined by the Acoustical Society of America as spaces for educational activities where the primary functions are teaching and learning and where good speech communication is critical to a student's academic achievement (ANSI 2002:4-5).

To address the human response to groundborne vibration, the Federal Transit Administration (FTA) has guidelines for maximum acceptable vibration criteria for different types of land uses. These guidelines recommend 65 VdB referenced to 1 microinch per second ($\mu\text{in}/\text{sec}$) and based on the RMS velocity amplitude for land uses where low ambient vibration is essential for interior operations (e.g., hospitals, high-tech manufacturing, laboratory facilities); 80 VdB for residential uses and buildings where people normally sleep; and 83 VdB for institutional land uses with primarily daytime operations (e.g., schools, churches, clinics, offices) (FTA 2006:8-3).

United States Code of Regulations Title 14, Part 150

The United States Code of Regulations Title 14 (Aeronautics and Space), Part 150, Airport Noise Compatibility Planning, has procedures, standards, and methodology governing the development, submission, and review of airport noise exposure maps and airport noise compatibility programs, including the process for evaluating and approving or disapproving those programs. It prescribes methods to determine exposure of individuals to noise from the operations of an airport and also identifies land uses that are normally compatible with various levels of

exposure to noise. For schools, an L_{dn} exposure greater than 65 dBA is considered incompatible. Development of schools exposed to annual 65 dBA L_{dn} noise levels due to aircraft noise should be prohibited.

STATE PLANS, POLICIES, REGULATIONS, AND LAWS

The State of California has adopted noise standards in areas of regulation not preempted by the federal government. State standards regulate noise levels of motor vehicles, sound transmission through buildings, occupational noise control, and noise insulation.

Title 5, California Code of Regulations

The California Department of Education (CDE 2017) cites requirements for school projects and establishes noise standards in Title 5 of the California Code of Regulations, Division 1, Chapter 13, Subchapter 1, “School Facilities Construction.” The following articles are applicable to the proposed project:

Article 2, School Sites, Section 14010, Standards for School Site Selection

All districts shall select a school site that provides safety and that supports learning. The following standards shall apply:

- e) The site shall not be adjacent to a road or freeway that any site-related traffic and sound level studies have determined will have safety problems or sound levels which adversely affect the educational program.
- q) The district shall consider environmental factors of light, wind, noise, aesthetics, and air pollution in its site selection process.

Article 4, Standards, Planning and Approval of School Facilities, Section 14030, Standards for Development of Plans for the Design and Construction of School Facilities

The following standards for new schools are for the use of all school districts for the purposes of educational appropriateness and promotion of school safety:

- m. Acoustical. Hearing conditions shall complement the educational function by good sound control in school buildings, specifically:
 1. The sound-conditioning in a given space is acoustically comfortable to permit instructional activities to take place in this classroom.
 2. Sound is transmitted without interfering with adjoining instructional spaces; e.g., room partitions are acoustically designed to minimize noise.
 3. The ventilation system does not transmit an inordinate sound level to the instructional program.

The *State of California General Plan Guidelines 2017*, published by the California Governor’s Office of Planning and Research (OPR), provides guidance for the acceptability of projects within areas of specific noise exposure ranges. Table 3.11-4 presents acceptable and unacceptable community noise exposure limits for various land use categories (OPR 2003:244–254). The guidelines also present adjustment factors that may be used to arrive at noise acceptability standards that reflect the noise control goals of the community, the particular community’s sensitivity to noise, and the community’s assessment of the relative importance of noise pollution.

**Table 3.11-4.
OPR Land Use Noise Compatibility Guidelines**

Land Use Category	Community Noise Exposure (L _{dn} or CNEL, dB)			
	Normally Acceptable ¹	Conditionally Acceptable ²	Normally Unacceptable ³	Clearly Unacceptable ⁴
Residential-Low Density Single Family, Duplex, Mobile Home	<60	55–70	70–75	75+
Residential-Multiple Family	<65	60–70	70–75	75+
Transient Lodging, Motel, Hotel	<65	60–70	70–80	80+
School, Library, Church, Hospital, Nursing Home	<70	60–70	70–80	80+
Auditorium, Concert Hall, Amphitheater		<70	65+	
Sports Arenas, Outdoor Spectator Sports		<75	70+	
Playground, Neighborhood Park	<70		67.5–75	72.5+
Golf Courses, Stable, Water Recreation, Cemetery	<75		70–80	80+
Office Building, Business Commercial, and Professional	<70	67.5–77.5	75+	
Industrial, Manufacturing, Utilities, Agriculture	<75	70–80	75+	

Notes: CNEL = Community Noise Equivalent Level; dB = A-weighted decibels; L_{dn} = day-night average noise level.

¹ Specified land use is satisfactory, based on the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.

² New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features are included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice.

³ New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design. Outdoor areas must be shielded.

⁴ New construction or development should generally not be undertaken.

Source: OPR 2003:244-254

LOCAL PLANS, POLICIES, REGULATIONS, AND ORDINANCES

Although City and County policies and standards do not directly apply to the project, the research underpinning these policies is useful for understanding project impacts, and these policies and standards are used, in part, in the noise assessment provided in this section.

Sacramento County General Plan

The Noise Element of the *County of Sacramento General Plan* (Sacramento County 2017) contains specific goals and policies for evaluating a proposed project’s compatibility with surrounding land uses. The following goals and policies related to noise are applicable to the proposed project:

- ▶ **Policy NO-1:** The noise level standards for noise-sensitive areas of *new* uses affected by traffic or railroad noise sources in Sacramento County are shown in Table 1 [Table 3.11-5 of this DEIR]. Where the noise level standards of Table 1 [Table 3.11-5 of this DEIR] are predicted to be exceeded at new uses proposed within Sacramento County which are affected by traffic or railroad noise, appropriate noise mitigation measures shall be included in the project design to reduce projected noise levels to a state of compliance with the Table 1 [Table 3.11-5 of this DEIR] standards.

**Table 3.11-5.
Noise Standards for New Uses Affected by Traffic and Railroad Noise**

New Land Use	Sensitive ¹ Outdoor Area - L _{dn}	Sensitive Interior ² Area - L _{dn}	Notes
All Residential	65	45	5
Transient Lodging	65	45	3,5
Hospitals & Nursing Homes	65	45	3, 4, 5
Theaters & Auditoriums	---	35	3
Churches, Meeting Halls Schools, Libraries, etc.	65 65	40 40	3 3
Office Buildings	65	45	3
Commercial Buildings	---	50	3
Playgrounds, Parks, etc.	70	---	
Industry	65	50	3

Notes: L_{dn} = day-night average noise level.

1. Sensitive areas are defined in acoustic terminology section.
2. Interior noise level standards are applied within noise-sensitive areas of the various land uses, with windows and doors in the closed positions.
3. Where there are no sensitive exterior spaces proposed for these uses, only the interior noise level standard shall apply.
4. Hospitals are often noise-generating uses. The exterior noise level standards for hospitals are applicable only at clearly identified areas designated for outdoor relaxation by either hospital staff or patients.
5. If this use is affected by railroad noise, a maximum (L_{max}) noise level standard of 70 dB shall be applied to all sleeping rooms to reduce the potential for sleep disturbance during nighttime train passages.

Source: Sacramento County 2017, Table 1.

- ▶ **Policy NO-2:** Proposals for new development within Sacramento County which may be affected by aircraft noise shall be evaluated relative to Table 4 of the Noise Element (Land Use Compatibility for Airport Noise for all public use airports except for Sacramento International Airport). In the case of Sacramento International Airport, use the Land Use Compatibility Plan prepared for Sacramento International Airport dated December 12, 2013, [Table 3.11-8 of this DEIR]: Land Use Compatibility for Aircraft Noise.
- ▶ **Policy NO-5:** The interior and exterior noise level standards for noise-sensitive areas of new uses affected by existing non-transportation noise sources in Sacramento County are shown in Table 2 [Table 3.11-6 of this DEIR]. Where the noise level standards of Table 2 [Table 3.11-6 of this DEIR] are predicted to be exceeded at a proposed noise-sensitive area due to existing non-transportation noise sources, appropriate noise mitigation measures shall be included in the project design to reduce projected noise levels to a state of compliance with the Table 2 [Table 3.11-6 of this DEIR] standards within sensitive areas.
- ▶ **Policy NO-6:** Where a project would consist of or include non-transportation noise sources, the noise generation of those sources shall be mitigated so as not to exceed the interior and exterior noise level standards of Table 2 [Table 3.11-6 of this DEIR] at existing noise-sensitive areas in the project vicinity.
- ▶ **Policy NO-7:** The “last use there” shall be responsible for noise mitigation. However, if a noise-generating use is proposed adjacent to lands zoned for uses which may have sensitivity to noise, then the noise generating use shall be responsible for mitigating its noise generation to a state of compliance with the Table 2 [Table 3.11-6 of this DEIR] standards at the property line of the generating use in anticipation of the future neighboring development.

**Table 3.11-6.
Non-Transportation Noise Standards Median (L₅₀) / Maximum (L_{max})¹**

Receiving Land Use	Outdoor Area ²		Interior ³	
	Daytime	Nighttime	Day & Night	Notes
All Residential	55 / 75	50 / 70	35 / 55	
Transient Lodging	55 / 75	---	35 / 55	4
Hospitals & Nursing Homes	55 / 75	---	35 / 55	5, 6
Theaters & Auditoriums	---	---	30 / 50	6
Churches, Meeting Halls, Schools, Libraries, etc.	55 / 75	---	35 / 60	6
Office Buildings	60 / 75	---	45 / 65	6
Commercial Buildings	---	---	45 / 65	6
Playgrounds, Parks, etc.	65 / 75	---	---	6
Industry	60 / 80	---	50 / 70	6

Notes: L₅₀: Median noise level or level exceeded 50% of the time; L_{max} = The highest root-mean-square (RMS) sound level measured over a given period of time.

1. The Table 2 standards shall be reduced by 5 dB for sounds consisting primarily of speech or music, and for recurring impulsive sounds. If the existing ambient noise level exceeds the standards of Table 2, then the noise level standards shall be increased at 5 dB increments to encompass the ambient.
2. Sensitive areas are defined acoustic terminology section.
3. Interior noise level standards are applied within noise-sensitive areas of the various land uses, with windows and doors in the closed positions.
4. Outdoor activity areas of transient lodging facilities are not commonly used during nighttime hours.
5. Hospitals are often noise-generating uses. The exterior noise level standards for hospitals are applicable only at clearly identified areas designated for outdoor relaxation by either hospital staff or patients.
6. The outdoor activity areas of these uses (if any), are not typically utilized during nighttime hours.
7. Where median (L₅₀) noise level data is not available for a particular noise source, average (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.

Source: Sacramento County 2017, Table 2.

- ▶ **Policy NO-8:** Noise associated with construction activities shall adhere to the County Code requirements. Specifically, Section 6.68.090(e) addresses construction noise within the County.
- ▶ **Policy NO-9:** For capacity enhancing roadway or rail projects, or the construction of new roadways or railways, a noise analysis shall be prepared in accordance with the Table 3 [Table 3.11-7 of this DEIR] requirements. If projected post-project traffic noise levels at existing uses exceed the noise standards of Table 1 [Table 3.11-5 of this DEIR], then feasible methods of reducing noise to levels consistent with the Table 1 [Table 3.11-5 of this DEIR] standards shall be analyzed as part of the noise analysis. In the case of existing residential uses, sensitive outdoor areas shall be mitigated to 60 dB, when possible, through the application of feasible methods to reduce noise. If 60 dB cannot be achieved after the application of all feasible methods of reducing noise, then noise levels up to 65 dB are allowed.

If pre-project traffic noise levels for existing uses already exceed the noise standards of Table 1 [Table 3.11-5 of this DEIR] and the increase is significant as defined below, feasible methods of reducing noise to levels consistent with the Table 1 [Table 3.11-5 of this DEIR] standards should be applied. In no case shall the long-term noise exposure for non-industrial uses be greater than 75 dB; long-term noise exposure above this level has the potential to result in hearing loss.

A significant increase is defined as follows:

Pre-Project Noise Environment (L _{dn})	Significant Increase
Less than 60 dB	5+ dB
60–65 dB	3+ dB
Greater than 65 dB	1.5+ dB

**Table 3.11-7.
Requirements for an Acoustical Analysis**

An acoustical analysis prepared pursuant to the Noise Element shall:

1. Be the financial responsibility of the applicant.
2. Be prepared by a qualified person experienced in the fields of environmental noise assessment and architectural acoustics.
3. Include representative noise level measurements with sufficient sampling periods and locations to adequately describe local conditions and the predominant noise sources.
4. Estimate projected future (20 year) noise levels in terms of the Standards of Table 1 and 2 [Tables 3.11-2 and 3.11-3 of this DEIR] [of the Sacramento County General Plan Noise Element], and compare those levels to the adopted policies of the Noise Element.
5. Recommend appropriate mitigation to achieve compliance with the adopted policies and standards of the Noise Element.
6. Estimate noise exposure after the prescribed mitigation measures have been implemented.

Source: Sacramento County 2011, Table 3.

- ▶ **Policy NO-10:** For interim capacity enhancing roadway or rail projects, or the construction of new interim roadways or railways, it may not be practical or feasible to provide mitigation if the ultimate roadway or railway design would render the interim improvements ineffective or obsolete. An example would be a noise barrier constructed for an interim project which would need to be removed to accommodate the ultimate project. The following factors should be considered in determining whether or not noise mitigation will be implemented for interim projects, but in general, noise mitigation for interim projects would not be provided:
 - a. The severity of the impact
 - b. The cost and effectiveness of the mitigation.
 - c. The number of properties which would benefit from the mitigation.
 - d. The foreseeable duration between interim and ultimate improvements.
 - e. Aesthetic, safety and engineering considerations.
- ▶ **Policy NO-11:** If noise-reducing pavement is to be utilized in conjunction with a roadway improvement project, or if such paving occurs adjacent to a proposed new noise-sensitive land use, the acoustical benefits of such pavement shall be included in the noise analysis prepared for the project.
- ▶ **Policy NO-12:** All noise analyses prepared to determine compliance with the noise level standards contained within this Noise Element shall be prepared in accordance with Table 3 [Table 3.11-7 of this DEIR].

- ▶ **Policy NO-13:** Where noise mitigation measures are required to satisfy the noise level standards of this Noise Element, emphasis shall be placed on the use of setbacks and site design to the extent feasible, prior to consideration of the use of noise barriers.
- ▶ **Policy NO-15:** The County shall have the flexibility to consider the application of 5 dB less restrictive exterior noise standards than those prescribed in Tables 1 and 2 [Tables 3.11-5 and 3.11-6 of this DEIR] in cases where it is impractical or infeasible to reduce exterior noise levels within infill projects to a state of compliance with the Table 1 or 2 [Tables 3.11-5 and 3.11-6 of this DEIR] standards. In such cases, the rationale for such consideration shall be clearly presented and disclosure statements and noise easements should be included as conditions of project approval. The interior noise level standards of Tables 1 and 2 [Tables 3.11-5 and 3.11-6 of this DEIR] would still apply. The maximum allowable long-term noise exposure permissible for non-industrial uses is 75 dB.

Exemptions

- ▶ **Policy NO-16:** The following sources of noise shall be exempt from the provisions of this Noise Element:
 - Emergency warning devices and equipment operated in conjunction with emergency situations, such as sirens and generators which are activated during power outages. The routine testing of such warning devices and equipment shall also be exempt provided such testing occurs during daytime hours.
 - Activities associated with events for which a permit has been obtained from the County.

Table 4 of the General Plan Noise Element shows that elementary and secondary schools are identified as compatible with airport-related 60-65 dB CNEL noise contours, except for Sacramento International Airport. In the case of Sacramento International Airport, Table 4 of the General Plan Noise Element refers to use the Land Use Compatibility Plan prepared for Sacramento International Airport dated December 12, 2013. Table 1 and Table 2 of ALUCP [Table 3.11-8 of this DEIR], summarizes land use compatibility of Sacramento International Airport.

Table 3.11-8. Land Use Compatibility for Airport Noise			
Children’s Schools: K–12, day care centers (>14 children); school libraries ⁶	Normally Compatible	Conditional	Incompatible
Table 1 of ALUCP	≤ 60	60 – 65 dB CNEL (45dB CNEL) ^a	> 65 New schools incompatible above CNEL 60 dB unless special circumstances exist (see Policies 3.2.2(a) and 4.1.5) ^b
Table 1 of ALUCP	With Safety Zone 100%	Use should not be permitted under any normal circumstances. Limited exceptions possible for site-specific special conditions.	
⁶ These land uses constitute uses of special concern for which safety restrictions apply irrespective of usage intensities. See Policy 3.3.7. ^a . Interior CNEL limits in yellow cells apply in addition to other listed conditions (see Policy 3.2.3) ^b . Acoustical study may be required for noise-sensitive uses proposed in areas exposed to CNEL 60 dB or greater (see Policy 3.2.3(d)) Source: Table 1 and Table 2 of ALUCP (December 12, 2013).			

Sacramento County Code, Noise Control Ordinance

The Sacramento County Code Noise Control Ordinance contains performance standards to prevent unnecessary, excessive and offensive noise levels within the county. Table 3.11-9 includes applicable information from the Noise Control Ordinance.

Table 3.11-9. Noise Control Ordinance			
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. 10 p.m.–7 a.m.	55 dB 50 dB
It is unlawful for any person at any location within the County to create any noise which causes the noise levels on an affected property, when measured in the designated noise area, to exceed for the duration of time set forth following, the specified exterior noise standards in any one hour by:			
Cumulative Duration of the Intrusive Sound		Allowance Decibels (dB)	
1. Cumulative period of 30 minutes per hour		0	
2. Cumulative period of 15 minutes per hour		+5	
3. Cumulative period of 5 minutes per hour		+10	
4. Cumulative period of 1 minute per hour		+15	
5. Level not to be exceeded for any time per hour		+20	
Each of the noise limits specified in subdivision (b) of this section shall be reduced by five dB for impulsive or simple tone noises, or for noises consisting of speech or music.			
If the ambient noise level exceeds that permitted by any of the first four noise-limit categories specified in subdivision (b), the allowable noise limit shall be increased in five dB 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.			
Notes: dB = A-weighted decibels.			
Source: Title 6 of the Sacramento County Code, Section 6.68.070			

Exemptions

Section 6.68.090 of the Sacramento County Code establishes the following conditions that are considered exempt from the provisions of the code:

- a. School bands, school athletic, and school entertainment events;
- b. Outdoor gatherings, public dances, shows and sporting and entertainment events, provided said events are conducted pursuant to a license or permit by the County;
- c. Activities conducted on parks, public playgrounds and school grounds, provided such parks, playgrounds and school grounds are owned and operated by a public entity or private school;
- d. Any mechanical device, apparatus or equipment related to or connected with emergency activities or emergency work;

- e. Noise sources associated with construction, repair, remodeling, demolition, paving or grading of any real property, provided said activities do not take place between the hours of eight p.m. and six a.m. on weekdays and Friday commencing at eight p.m. through and including seven a.m. on Saturday; Saturdays commencing at eight p.m. through and including seven a.m. on the next following Sunday and on each Sunday after the hour of eight p.m. Provided, however, when an unforeseen or unavoidable condition occurs during a construction project and the nature of the project necessitates that work in process be continued until a specific phase is completed, the contractor or owner shall be allowed to continue work after eight p.m. and to operate machinery and equipment necessary until completion of the specific work in progress can be brought to conclusion under conditions which will not jeopardize inspection acceptance or create undue financial hardships for the contractor or owner;
- f. Noise sources associated with agricultural operations, provided such operations do not take place between the hours of eight p.m. and six a.m.;
- g. All mechanical devices, apparatus or equipment which are utilized for the protection or salvage of agricultural crops during periods of adverse weather conditions or when the use of mobile noise sources is necessary for pest control;

Schools

Section 6.68.110 of the Sacramento County Code establishes the following conditions applicable to schools:

It is unlawful for any person to create any noise which causes the noise level at any school, hospital or church, while the same is in use, to exceed the noise standards specified in Section 6.68.070 [Table 3.11-6 of this DEIR] or to create any noise which unreasonably interferes with the use of such institution or unreasonably disturbs or annoys patients in the hospital. In any disputed case, interfering noise which is ten dBA or more, greater than the ambient noise level at the building, shall be deemed excessive and unlawful.

CITY OF SACRAMENTO GENERAL PLAN

The “Noise” section within the Environmental Constraints Element of the *Sacramento 2035 General Plan* (City General Plan) (City of Sacramento 2014) includes policies for evaluating land use/noise compatibility, including the following.

- ▶ **Policy 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 [Table 3.11-10 of this DEIR], to the extent feasible.
- ▶ **Policy 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 [Table 3.11-11 of this DEIR], to the extent feasible.

**Table 3.11-10.
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} ^a or CNEL ^c)
Residential - Low Density ^d Single Family, Duplex, Mobile Homes	60 dBA ^{e, f}
Residential - Multi-family ^g	65 dBA
Urban Residential Infill ^h and Mixed-Use Projects ^{i, j}	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: CNEL = Community Noise Equivalent Level; dBA = A-weighted decibels; L_{dn} = day-night average noise level.

- 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

See notes d and g above for definition of primary open space areas for single-family and multi-family developments.

Source: OPR 2003, cited in City of Sacramento 2014: Table EC 1.

- ▶ **Policy 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 dBA L_{dn} for residential, transient lodging, hospital, nursing homes and other uses where people normally sleep; and 45 dBA L_{eq} (peak hour) for office buildings and similar uses.
- ▶ **Policy EC 3.1.4: Interior Noise Review for Multiple, Loud Short-Term Events.** In cases where new development is proposed in areas subject to frequent, high-noise events (such as aircraft over-flights, or train and truck passbys), the City shall evaluate noise impacts on any sensitive receptors from such events when considering whether to approve the development proposal, taking into account potential for sleep disturbance, undue annoyance, and interruption in conversation, to ensure that the proposed development is compatible with the context of its surroundings.

**Table 3.11-11.
Exterior Incremental Noise Impact Standards for Noise-Sensitive Uses (dBA)**

Residences and Buildings Where People Normally Sleep ^a		Institutional Land Uses with Primarily Daytime and Evening Uses ^b	
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: dBA= A-weighted decibels; L_{dn} = day-night average noise level; L_{eq} = energy-equivalent noise level.

^a This category includes homes, hospitals, and hotels where a nighttime sensitivity to noise is assumed to be of utmost importance.

^b This 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, cited in City of Sacramento 2014: Table EC 2.

- ▶ **Policy 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.
- ▶ **Policy EC 3.1.9: Compatibility with Park and Recreation Uses.** The City shall limit the hours of operation for parks and active recreation areas in residential areas to minimize disturbance to residences.
- ▶ **Policy 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.
- ▶ **Policy 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 Noise Control Ordinance

The City of Sacramento Noise Control Ordinance, found in the Sacramento Municipal Code, Chapter 8.68, sets limits for exterior noise levels on the designated residential property. Section 8.68.060 of the City of Sacramento’s Noise Control Ordinance establishes construction noise exempt hours, as follows:

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 the progress of the work.

The City’s Noise Control Ordinance also establishes exterior noise level standards for noise-sensitive land uses. These are shown in Table 3.11-12. The ordinance states that noise shall not exceed 55 dB during any cumulative 30-minute period in any hour during the day (7:00 a.m. to 10:00 p.m.), and 50 dBA during any cumulative 30-minute period in any hour during the night (10:00 p.m. to 7:00 a.m.). The ordinance sets somewhat higher noise limits for noise of shorter duration; however, noise shall never exceed 75 dB in the day and 70 dB at night.

If the ambient noise level exceeds that permitted by any of the first four noise-limit categories listed in [Table 3.11-9], 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 allowable L_{max} , the maximum ambient noise level shall be the noise level limit for that category.

Table 3.11-12. City of Sacramento Exterior Noise Level Standards			
Maximum Time of Exposure	Noise Metric	7 a.m. to 10 p.m. (Daytime)	10 p.m. to 7 a.m. (Nighttime)
30 Minutes/Hour	L_{50}	55 dBA	50 dBA
15 Minutes/Hour	L_{25}	60 dBA	55 dBA
5 Minutes/Hour	$L_{8.3}$	65 dBA	60 dBA
1 Minute/Hour	$L_{1.7}$	70 dBA	65 dBA
Any Period of Time	L_{max}	75 dBA	70 dBA

Source: City of Sacramento Noise Ordinance.

Sacramento International Airport Comprehensive Land Use Plan

The *Sacramento International Airport Land Use Plan* (ALUCP) (Airport Land Use Commission 2013) established noise standards for proposed land uses within the airport’s area of influence. These standards are based on adopted airport CNEL noise contours and where the proposed land use is located relative to these noise contours. Section 3.10, “Land Use and Planning,” addresses the proposed project’s land use compatibility with the ALUCP. Policy 3.3.7 addresses land uses with special safety concerns irrespective of the number of people associated with those uses, and Policy 4.1.5 outlines special conditions for exemptions where there may be specific situations where a normally incompatible use can be considered compatible.

- ▶ **Policy 1.3.3. Referral Areas:** The Sacramento International Airport Influence Area is divided into two subareas, Referral Area 1 and Referral Area 2. Requirements for referral of Land Use Actions to the ALUC for review differ between these two areas. See Map 1, Compatibility Policy Map of the Airport Influence Area depicts the limits of each of the two referral areas. The proposed project is overlapped by Referral Area 1.
 - (a) Referral Area 1 encompasses locations where noise and/or safety represent compatibility concerns.
- ▶ **Policy 3.2.2: Maximum Acceptable Exterior Noise Levels:** To minimize noise-sensitive development in noisy areas around the Airport, new land use development shall be restricted in accordance with the following:

(a) Residential Development and Children's Schools:

- (1) All new Residential Development and children's schools are deemed incompatible within the projected CNEL 60 dB contour of Sacramento International Airport.
- (2) Map 2 [Exhibit 3.11-3 of this EIR], Compatibility Policy Map: *Noise* depicts the area within which this restriction applies.
- (3) Where special circumstances exist and special measures are taken to address the adverse consequences, exceptions to the CNEL 60 dB criterion are provided for in this Compatibility Plan as described in Section 4.2 of the ALUCP 2013.

- ▶ **Policy 3.2.3: Maximum Acceptable Interior Noise Levels:** The maximum, aircraft-related, interior noise level that shall be considered acceptable for land uses near airports is CNEL 45 dB in any habitable room of single- or multi-family residences and children's schools (K–12).
- ▶ **Policy 3.3.7: Land Uses of Special Concern:** Certain types of land uses represent special safety concerns irrespective of the number of people associated with those uses.

(a) Land uses of particular concern and the nature of the concern are:

- (1) **Uses Having Vulnerable Occupants:** These uses are ones in which the majority of occupants are children, elderly, and/or disabled—people who have reduced effective mobility or may be unable to respond to emergency situations. The primary uses in this category include:
 - Children's schools (grades K–12).
 - Day care centers (facilities with 15 or more children, as defined in the California Health and Safety Code).

(b) The safety criteria for the land uses in Paragraph (a) of this policy are included in Table 2, Safety Compatibility Criteria [Table 3.11-8 of this DEIR]. These criteria shall be applied when evaluating these uses.

- (1) In some cases, these uses are not allowed in portions of the Airport environs regardless of the number of occupants associated with the use.
- (2) In other instances, these uses should be avoided (that is, allowed only if a site outside the zone would not serve the intended function).
- (3) When allowed, special measures for the particular use, such as those listed in Table 2, Safety Compatibility Criteria [Table 3.11-8 of this DEIR], must be taken as appropriate to minimize hazards to the facility and occupants if the facility were to be struck by an aircraft.

- ▶ **Policy 4.1.5: Special Conditions Exception:** The compatibility criteria set forth in this Compatibility Plan are intended to be applicable to all locations within the Sacramento International Airport Influence Area that are under the jurisdiction of the Airport Land Use Commission for Sacramento, Sutter, Yolo, and Yuba Counties.

However, there may be specific situations where a normally incompatible use can be considered compatible because of terrain, specific location, or other extraordinary factors or circumstances related to the site.

- (a) After due consideration of all the factors involved in such situations, the ALUC may find a normally incompatible use to be acceptable.
- (b) In reaching such a decision, the ALUC shall make specific findings as to the nature of the extraordinary circumstances that warrant the policy exception and why the exception is being made. Findings also shall be made that the land use will neither create a safety hazard to people on the ground or aircraft in flight nor result in excessive noise exposure for the proposed use.
- (c) Approval of a special conditions exception for a proposed Project shall require a two-thirds approval of the ALUC members voting on the matter and shall not be delegated to the ALUC Secretary for approval.
- (d) The burden for demonstrating that special conditions apply to a particular Development Proposal rests with the Project proponent and/or the referring Local Agency, not with the ALUC.
- (e) The granting of a special conditions exception shall be considered site-specific and shall not be generalized to include other sites.

As discussed above, there are several approaches to assess aircraft noise impacts on schools. For the proposed project, aircraft noise impacts are evaluated based on the comparison of applicable and adopted standards (airport CNEL noise contours, hourly [L_{eq}] interior noise levels, and daily [L_{dn}] interior noise levels) from the ALUCP, and the City’s and County’s noise standards.

Ambient Community Noise Environment Degradation

Using a single value to evaluate an impact relating to a noise-level increase does not account for the existing ambient noise environment (e.g., roads) to which people have become accustomed. Studies assessing the percentage of people who are highly annoyed by changes in ambient noise levels indicate that when ambient noise levels are low, a greater change is needed to cause annoyance. As ambient noise levels increase, a smaller change in noise level is required to elicit significant annoyance. In community noise assessments (e.g., general plans, noise ordinances), noise impacts are generally not considered significant under CEQA if no noise-sensitive sites are located in the vicinity of the project, or if increases in ambient noise levels associated with implementation of the project (construction and operation) would not exceed +3 dB at noise-sensitive locations near the project (Caltrans 2013).

The significance criteria outlined in Table 3.11-13 correlate to human responses to changes in ambient noise levels and assess degradation of the ambient community noise environment.

Table 3.11-13. Significant Change in Ambient Noise Levels	
Existing Ambient Noise Level, L _{dn} /CNEL	Significant Increase
<60 dB	+ 5 dB or greater
>60 dB	+ 3 dB or greater

Notes: CNEL = Community Noise Equivalent Level; dB = A-weighted decibels; L_{dn} = day-night average noise level.
Source: FICON 1992, and Caltrans 2013.

3.11.4 ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

According to Appendix G of the CEQA Guidelines, the proposed project would have a significant impact related to noise if the proposed project would:

- ▶ expose persons to or generate noise levels in excess of applicable standards (e.g., exterior and interior noise levels detailed in the County General Plan and Sacramento County Code [Tables 3.11-5 and 3.11-7 of this EIR], in the City General Plan [Table 3.11-10 of this EIR], or in the standards outlined in the City of Sacramento Noise Control Ordinance);
- ▶ result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project, as outlined in Table 3.11-13;
- ▶ result in a substantial temporary or periodic increase in ambient noise levels in the vicinity of the project site above levels existing without the project, as outlined in Table 3.11-13;
- ▶ expose people residing or working in the area to excessive noise levels, 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; or
- ▶ expose persons to or generate excessive groundborne vibration or groundborne noise levels.

For the proposed project, the environmental evaluation of potential noise impacts is based on a comparison between predicted noise levels and noise criteria defined by Sacramento County and the City of Sacramento. For this project, noise impacts are considered significant if existing or proposed noise-sensitive land uses would be exposed to noise levels in excess of the County General Plan, Sacramento County Code, City General Plan and City of Sacramento Noise Control Ordinance standards as described above. Although City and County policies and standards do not directly apply to the project, the research underpinning these policies is useful for understanding project impacts.

ISSUES NOT DISCUSSED FURTHER

Expose People Residing or Working in the Project Area To Excessive Noise Levels, for a Project within the Vicinity of a Private Airstrip—The proposed project would not expose people to excessive noise levels from a private airstrip. Because the project site would not be located within two miles of any airstrips, and therefore this issue is not discussed further in this EIR.

ANALYSIS METHODOLOGY

Information included in Chapter 2, “Project Description,” data provided by the project engineer (e.g., construction equipment requirements and schedule), and data obtained during on-site noise monitoring were used to determine potential locations of noise-sensitive receptors and potential noise-generating activities and land uses in the

vicinity of the project site, and within the project site. Noise-sensitive land uses and noise sources near the project site were identified based on existing documentation (e.g., aerial images) and site reconnaissance.

To assess the potential short-term noise impacts from construction, sensitive receptors and their relative exposure were identified. Construction noise was predicted using the Federal Transit Noise and Vibration Impact Assessment methodology for construction noise prediction (FTA 2006). Reference equipment noise levels and use factors are based on the Federal Highway Administration Roadway Construction Noise Model (FHWA 2006). Noise levels of specific construction equipment that would be operated and resultant noise levels at sensitive receptor locations were calculated.

Regarding traffic noise, modeling was conducted based on traffic volumes obtained from the traffic analysis, as discussed in Section 3.13, "Traffic and Transportation." The FHWA Highway Traffic Noise Prediction Model (FHWA RD 77-108) (FHWA 1978) was used to calculate the change in traffic noise levels along affected. The school's contribution to the existing traffic noise levels along area roadways was determined by comparing the predicted noise levels at a reference distance of 50 feet from the roadway centerline, with and without project-generated traffic.

Potential long-term (operation-related) noise impacts from stationary sources were assessed based on existing documentation (e.g., HVAC equipment noise levels) and site reconnaissance data (e.g., distances to receptors). This analysis also evaluates the proposed on-site noise-generating uses (i.e., mechanical HVAC units, parking lots, playfields, access roadway) that could affect off-site noise-sensitive receptors near the proposed project.

To assess the airport noise and safety compatibility issues at the proposed school, the California Airport Land Use Planning Handbook was used as a technical resource, as required by the California Public Resources Code, Section 21096 for preparing an environmental impact report for any project within an airport influence area defined by an ALUP. Also, the Land Use Compatibility Plan prepared for Sacramento International Airport dated December 12, 2013 was used, for the airport noise compatibility analysis as required by Sacramento County Policy NO-2. The basis for compatibility zone delineation for airports is the CNEL contours created with the FAA Integrated Noise Model for private and public airports. Airport noise in the vicinity of airports is produced from takeoffs, flyovers/overflights, approaches, and landings. Each of these events results in noise exposure to noise-sensitive receptors within close proximity to an airport.

IMPACT ANALYSIS

IMPACT 3.11-1 **Short-Term Noise Levels from Construction Activities.** *Construction activities associated with grading, building the new school, and infrastructure and facilities necessary to serve the school could expose sensitive receptors to noise levels in excess of the applicable noise standards and/or result in a noticeable increase in ambient noise levels. This impact is considered **potentially significant**.*

Construction noise levels would fluctuate depending on the particular type, number, and duration of use for the various pieces of equipment. The effects of construction noise largely depend on the type of construction activities occurring on any given day, noise levels generated by those activities, distances to noise-sensitive receptors, and the existing ambient noise environment in the receptor's vicinity. Construction generally occurs in several discrete stages, with each stage requiring different equipment that has varied noise characteristics. These stages alter the characteristics of the noise environment generated on the project site and in the surrounding

community during the construction process. Construction is expected to begin in 2019 and would be completed in approximately 12–18 months.

The site preparation phase typically generates the most substantial noise levels. Site preparation involves grading, compacting, and excavating, which uses the noisiest construction equipment. Site preparation equipment includes backhoes, bulldozers, loaders, excavation equipment such as graders and scrapers, and compaction equipment. Erection of large structural elements and mechanical systems could require using a crane, which may also generate substantial noise levels. The proposed project would also include construction of a pedestrian/bicycle and emergency access way and a potential pedestrian/bicycle connection to Egret Park in the city of Sacramento northeast of the project site. Based on equipment used for recent NUSD school construction, the primary sources of noise would likely include backhoes, compressors, bulldozers, excavators, and other related equipment. Table 3.11-14 depicts the noise levels generated by various types of construction equipment.

Table 3.11-14. Construction Equipment Noise Emission Levels		
Equipment Type	Noise Level (L_{eq}, dB) @ 50 Feet from Equipment	Noise Level (L_{max}, dB) @ 50 Feet from Equipment
Dump Truck	80	84
Backhoe	76	80
Man Lift	78	85
Grader	81	85
Compactor (ground)	76	83
Scraper	81	85
Pneumatic Tools	82	85
Drill Rig Truck	77	84
Combined Predicted Noise Level (L_{eq} dBA at 50 feet)	89	
Maximum Predicted Noise Level (L_{max} dBA at 50 feet)		85
Notes: dB = A-weighted decibels Noise levels are for equipment fitted with properly maintained and operational noise control devices, per manufacturer specifications. Source: FHWA 2006, data compiled by AECOM in 2017		

Construction equipment can be either mobile or stationary. Mobile equipment (e.g., loaders, graders, dozers) moves around a construction site performing tasks in a recurring manner. Stationary equipment (e.g., air compressor, generator, concrete saw) operates in a given location for an extended period of time to perform continuous or periodic operations. Thus, determining the location of stationary sources during specific phases, or the effective acoustical center of operations for mobile equipment, during various phases of the construction process is necessary.

As indicated in Table 3.11-14, project-related construction activities would generate noise levels ranging from 76 to 82 dB L_{eq} at a distance of 50 feet from the equipment. Accounting for the use factor of individual pieces of equipment, continuous and combined noise levels generated by the simultaneous operation of the loudest pieces of equipment would result in noise levels of 89 dB L_{eq} at 50 feet. The nearest off-site noise-sensitive land uses in the vicinity of the project site are single-family residences located approximately 200 feet east of the project site boundary and the roadway providing access from Del Paso Road. The pedestrian/bicycle and emergency access and the potential connection to Egret Park would be located at approximately 100 feet to existing residences

(Exhibit 2-6). Noise from localized point sources (such as construction sites) typically decreases by 7.5 dB⁴ (on the soft or unpaved ground) with each doubling of distance from the source to receptor. Assuming an attenuation rate of 7.5 dB per doubling of distance, construction would generate exterior hourly noise levels of 82 dB L_{eq} at the nearest sensitive receptors located 100 feet from the pedestrian/bicycle and emergency access way and the pedestrian/bicycle connection to Egret Park, and 74 dB L_{eq} at the nearest off-site sensitive receptors located 200 feet east of the project site.

Noise-sensitive residential uses east of the project site are located within the city of Sacramento, while the project site is within the unincorporated County. The project-related construction noise level of 74 dB L_{eq} at the nearest off-site sensitive receptors would exceed the thresholds established by the County (Table 3.11-6 and Table 3.11-9) and the City (Table 3.11-10). The Noise Ordinances of the City and County exempt daytime construction noise from applicable standards, as described above in Section 3.11.2, but this does not alleviate the potential for construction noise related impacts.

Construction could expose existing off-site sensitive receptors to equipment noise levels that result in a substantial increase in ambient noise levels. As indicated in Table 3.11-1, average daytime hourly noise levels at the project site and in the vicinity ranged from 54 dB to 59 dB L_{eq}. Therefore, the project-related construction noise level of 82 dB L_{eq} (from construction of pedestrian/bicycle and emergency access way and the potential pedestrian/bicycle connection to Egret Park) and 74 dB L_{eq} (from construction activities within the project site) would result in a substantial temporary increase above the measured ambient noise levels of 54 dB to 59 dB L_{eq} at nearby noise-sensitive land uses. As a result, the construction-generated noise would be considered a **significant**, short-term impact.

Mitigation Measure 3.11-1: Use Noise-Suppression Devices on Construction Equipment, Limit Construction to Daytime Hours, and Locate Stationary Equipment Away from Sensitive Noise Receptors to Reduce Noise Levels During Construction.

NUSD will implement the following noise-reduction and noise-control measures during construction activities:

- Construction equipment will be properly maintained per manufacturers' specifications and fitted with the feasible noise suppression devices (e.g., mufflers, silencers, wraps).
- All impact tools will be shrouded or shielded, and all intake and exhaust ports on power equipment will be muffled or shielded.
- Construction will take place between the hours of 7:00 a.m. and 6:00 p.m. Monday through Saturday, and between the hours of 9:00 a.m. and 6:00 p.m. on Sunday.
- Construction equipment will be shut down when not in use and will not idle for extended periods of time near noise-sensitive receptors.
- Fixed/stationary equipment (e.g., generators, compressors, cement mixers) will be located as far as practicable from noise-sensitive receptors.

⁴ Any highly absorptive surface in which the phase of the sound energy is changed upon reflection (Caltrans 2013).

- Noise control blanket barriers will be used during construction near noise-sensitive uses.
- Residences within 500 feet of construction sites shall be notified of the construction schedule in writing prior to the beginning of construction. Designate a “construction liaison” that would be responsible for responding to any local complaints about construction noise. The liaison would determine the cause of the noise complaints (e.g., starting too early, bad muffler, etc.) and institute reasonable measures to correct the problem. Conspicuously post a telephone number for the liaison at the construction site. If conflicts occurred which were irresolvable by the above mitigation measures, erect temporary noise control blanket barriers on the eastern side of noise-generating equipment operating within 500 feet of occupied residences.

Significance after Mitigation

Implementation of Mitigation Measure 3.11-1 would include the use of noise-suppression devices that would provide at least 3 dB reduction in noise. The level of noise reduction from shielding the impact tools and all intake and exhaust ports on power equipment will depend on the distance between the equipment and the noise receiver, but a 3-dB reduction would be a reasonable minimum reduction in noise to assume. Noise control blanket barriers can provide a minimum 10 dB reduction in noise. Construction noise would reduce to ambient levels at approximately 500 feet with the distance reduction (Table 3.11-11). Residences or other noise-sensitive land uses within 500 feet of construction sites would be notified of the construction activity in writing prior to the beginning of construction. Mitigation Measure 3.11-1 limits construction activity to less noise-sensitive hours, includes noise-reducing measures, limits idling⁵ and designates a construction liaison would reduce the short-term construction noise levels, but it is possible that intermittent impacts could still occur. While the City and County Noise Ordinances provide an exemption for construction noise occurring during daytime hours, it does not prevent this temporary impact from occurring. There is no additional feasible mitigation available that would avoid this impact. The impact is considered **significant and unavoidable**.

IMPACT 3.11-2 **Short-Term Groundborne Vibration from Construction.** *The proposed project would require short-term construction activities, but these activities would not expose sensitive receptors to vibration levels that would exceed local standards and/or result in a noticeable increase in vibration levels. This impact would be less than significant.*

The proposed project would generate construction vibration from equipment and from the transport of construction equipment, materials, and workers. Project operation (daily use of the school buildings) would not result in excessive groundborne vibration or groundborne noise levels and is not evaluated further.

Construction-related groundborne vibration would result from the use of heavy earthmoving equipment for clearing, excavation, compaction, and grading as well as construction activities for construction of the roadway access from Del Paso Road. The proposed project would also include construction of a pedestrian/bicycle and emergency access way to the east and a potential pedestrian/bicycle connection to Egret Park, northeast of the project site. These activities would produce a vibration level of approximately 87 vibration decibels (VdB) (0.089 inches per second [in/sec] peak particle velocity [PPV]) at a distance of 25 feet (which is the reference vibration

⁵ Idling noise levels would be 5 to 12 dB lower than the operating equipment noise level and would depend on equipment type (Occupational Safety and Health Research Institute [OSHR] 2017). Therefore, noise levels from idling of construction equipment would be above ambient noise levels at the nearest noise-sensitive uses in the project area.

level for operation of a large bulldozer [FTA 2006]). The pedestrian/bicycle and emergency access way and the potential pedestrian/bicycle connection to Egret Park would be located at approximately 100 feet to existing residences (Exhibit 2-6). The distance between the on-site construction activities and the closest acoustically sensitive uses would be approximately 200 feet. Assuming a standard reduction of 9 VdB per doubling of distance (FTA 2006), the vibration level at the nearest receivers to pedestrian/bicycle and emergency access and the potential pedestrian/bicycle connection to Egret Park would be approximately 69 VdB and the vibration level at the nearest receivers to on-site construction activities located approximately at 200 feet, would be approximately 60 VdB. These levels of vibration are below the FTA threshold of significance (78 VdB) and would not likely be perceptible. Therefore, this impact would be **less than significant**.

The Federal Transit Administration's (FTA's) Transit Noise and Vibration Impact Assessment technical manual provides criteria for groundborne vibration impacts with respect to building damage during construction activities (FTA 2006). The FTA guidelines suggest a vibration-damage criterion of 0.20 in/sec PPV for nonengineered timber and masonry buildings and 0.5 in/sec PPV for structures or buildings constructed of reinforced concrete, steel, or timber. For this project, the temporary and short-term project construction vibration level would be attenuated by distance at the nearest receivers would be approximately 0.004 in/sec PPV. This level of vibration is below the established threshold of significance of 0.50 in/sec PPV, pursuant to the FTA guidelines, and would not likely be perceptible. Therefore, this impact would be **less than significant**.

Mitigation Measures

No mitigation measure is required.

IMPACT 3.11-3 *Long-Term Operational (Traffic) Noise. Implementation of the proposed project could result in an increase of average daily vehicle trips in the project vicinity. However, the increased traffic volumes would not result in a noticeable (3 dB or greater) increase in traffic noise along roadways within and near the project site. This impact would be less than significant.*

Operation of the proposed school would increase traffic on the local roadway network and traffic noise levels along affected segments. To examine the effect of project-generated traffic increases, traffic noise levels associated with the proposed project were calculated for roadway segments using the FHWA Highway Noise Prediction Model (FHWA-RD-77-108) and compared with existing conditions. Traffic noise levels were modeled with and without the project for opening day when part of the school would be occupied (starting in 2020).

Tables 3.11-15 summarize the modeled traffic noise levels at 50 feet from the centerline of affected roadway segments, accounting for day/night percentages of autos, medium trucks, and heavy trucks; vehicle speeds; ground attenuation factors; and roadway widths.

Exterior incremental noise standards for projects under the City of Sacramento's jurisdiction are established by the City's 2035 General Plan, Policy EC 3.1.2 at any of the studied roadway segments. Policy EC 3.1.2 references Table EC 2, which is reproduced above as Table 3.11-11. As shown in Table 3.11-15, predicted traffic noise levels in the project vicinity would not exceed the exterior noise standards established in the City's General Plan, except along Del Paso Road from Hovnanian Drive to Wyndview Drive.

**Table 3.11-15.
Predicted Traffic Noise Levels, Existing with Opening Day (2020)**

Roadway	Segment		L _{dn} at 50 Feet, dB				
	From	To	Existing 2017	Allowable Noise Increment ^a	Plus Project 2020	Increase above Existing	Significant Impact?
Power Line Road	Del Paso Road	South of Del Paso Road	57	5 ^b	57	0	No
Power Line Road	Del Paso Road	North of Del Paso Road	58	5 ^b	59	0	No
Del Paso Road	Power Line Road	Hovnanian Drive	56	3	56	0	No
Hovnanian Drive	Del Paso Road	Natomas Central Drive	57	3	59	2	No
Main Access Road	Del Paso Road	Project Site	56-59 ^c	3	63	3 ^d	No
Del Paso Road	Hovnanian Drive	Wyndview Drive	62 (55) ^e	3	67(60) ^e	2	No
Wyndview Drive	Del Paso Road	Westlake Parkway	61	2	62	1	No
Del Paso Road	Wyndview Drive	Broadgate / Natomas Central Drive	68	1	70	2	No
Natomas Central Drive	Del Paso Road	Hovnanian Drive	60	2	61	1	No
Broadgate	Del Paso Road	Westlake Parkway	59	3	60	1	No
Del Paso Road	Broadgate/Natomas Central Drive	El Centro Road	69	1	71	2	No
El Centro Road	Del Paso Road	Bonfair Avenue	68	1	69	1	No
El Centro Road	Del Paso Road	Hawkview Drive	65	1	65	0	No
Del Paso Road	El Centro Road	I-5 NB Ramps	71	1	71	0	No
I-5 SB On-ramp	Del Paso Road	I-5 South of Del Paso Road	55	3	56	1	No
I-5 SB Off ramp	I-5 North of Del Paso Road	Del Paso Road	59	3	60	0	No
Del Paso Road	I-5 SB Ramps	I-5 NB Ramps	63	2	63	0	No
I-5 NB Off-ramp	I-5 South of Del Paso Road	Del Paso Road	60	2	60	0	No
I-5 NB On-ramp	Del Paso Road	I-5 North of Del Paso Road	53	5	53	0	No
Del Paso Road	I-5 NB Ramps	East Commerce Way	72	1	72	0	No
East Commerce Way	Del Paso Road	South of Del Paso Road	65	1	65	0	No
East Commerce Way	Del Paso Road	North of Del Paso Road	67	1	67	0	No
Del Paso Road	East Commerce Way	East of East Commerce Way	69	1	69	0	No
Natomas Central Drive	Hovnanian Drive	Manera Rica Drive	60	2	62	2	No
Hovnanian Drive	Natomas Central Drive	Adriatic Sea Way	54	5	54	0	No

Notes: dB = A-weighted decibels; L_{dn} = day-night average noise level.

^a. Policy EC 3.1.2 references Table EC 2. Exterior Incremental Noise Impact Standards for Noise-Sensitive Uses (dBA).

^b. County roadways. County Policy NO-9: Significant increase for a pre-project noise level of less than 60 dB L_{dn}, would be 5+ dB.

^c. No existing roadway. Existing noise levels assumed based on measured ambient noise levels (ST-03 and ST-05, in Table 3.11-1).

^d. The new Main Access Road from Del Paso Road to the Project Site would generate 63 dB L_{dn} at 50 feet that would be 57 dB L_{dn} at 200 feet at the nearest residences to the east, resulting in an increase of 3 dB (56 dB + 57 dB).

^e. With the existing sound wall, traffic noise levels at the residences along this segment would be about 7 dB lower.⁶ Therefore, the existing without and with project noise levels at these sensitive uses would be 55 dBA L_{dn} and 60 dBA L_{dn}, respectively.

Traffic noise levels are predicted at a standard distance of 50 feet from the roadway centerline and do not account for shielding from existing noise barriers or intervening structures. Traffic noise levels may vary depending on actual setback distances and localized shielding.

Source: Data modeled by AECOM in 2017

⁶ Effective noise barriers typically reduce noise levels by 5 to 10 decibels (dB), cutting the loudness of traffic noise by as much as one half (FHWA 2017).

With respect to increase above ambient noise condition, the proposed project would increase traffic noise levels by between 0 and 3 dB, along most of the studied roadway segments. In general, as stated above, a 1-dB increase in noise level is imperceptible, a 3-dB increase is barely perceptible, and a change of 5 dB generally fosters a noticeable change in human response. Closer to the school, along Del Paso Road from Hovnanian Drive to Wyndview Drive, traffic noise would increase by approximately 5 dB. However, the residences along this segment of the road are shielded by a sound wall. With the existing sound wall, assuming an average 7 dB reduction by sound wall, traffic noise levels at the residences along this segment would be about 7 dB lower than presented in Table 3.11-5.⁷ Therefore, the existing without and with project noise levels at these sensitive uses would be 55 dBA L_{dn} and 60 dBA L_{dn} , respectively. This would result in an increase of 2 dB (with 3 dB allowance [55+3=58]) above the existing condition traffic noise. Based on the criteria outlined in Table 3.11-13 above, a 2 dB increase above existing ambient noise levels of less than 60 dB L_{dn} would not be a significant increase.

Therefore, long-term noise levels from project-generated traffic sources would not exceed the standards established by the City's 2035 General Plan and would not result in a substantial permanent increase in ambient noise levels (3 dB or greater). As a result, this impact would be **less than significant**.

Mitigation Measures

No mitigation measure is required.

IMPACT 3.11-4 Long-Term Operational (School Site) Noise Levels. *The proposed project would add noise sources, such as mechanical HVAC equipment, surface parking, site access roads, and playfields. However, the project-related noise sources would not exceed the City's or County's standards. The impact would be less than significant.*

Mechanical HVAC Equipment

HVAC equipment is often mounted on rooftops, located on the ground, or located within mechanical equipment rooms. The noise sources could take the form of fans, pumps, air compressors, and chillers. Packaged rooftop units contain all necessary mechanical equipment, such as fans, pumps, condenser, and compressors, within a single enclosure. Noise levels from commercial heating, ventilation, and air conditioning (HVAC) equipment can reach 100 dBA at a distance of three feet (EPA 1971). However, these units are typically fitted with noise shielding cabinets, placed on the roof or in mechanical equipment rooms to reduce noise levels. Noise from mechanical equipment associated with operation of the proposed project is required to comply with the California Building Standards Code requirements pertaining to noise attenuation.

AECOM has measured noise levels from schools HVAC systems. HVAC equipment noise at high schools would be approximately 70 dBA L_{eq} at a distance of 6 feet (AECOM 2013)⁸. This would result in noise level of 52 dBA at a distance of 50 feet.

The closest off-site noise-sensitive land uses in the vicinity of the project site are single-family residences located approximately 200 feet east of the project site. Based on the cooling capacity of the packaged systems and their

⁷ Effective noise barriers typically reduce noise levels by 5 to 10 decibels (dB), cutting the loudness of traffic noise by as much as one half (FHWA 2017).

⁸ Long Beach Unified School District. Jordan High School Major Renovation Project Draft EIR. September 2013.

locations with respect to sensitive uses, noise levels for mechanical HVAC systems would be less than 40 dBA L_{eq} at the nearest noise-sensitive receptor east of the project site. As indicated in Table 3.11-10, average daytime hourly noise levels at the project site and in the vicinity ranged from 54 dB to 59 dB L_{eq} .

Therefore, HVAC equipment would not exceed the City's performance standard of 55 dB L_{eq} for noise-sensitive land uses affected by non-transportation noise during the daytime period, and would not result in a substantial permanent increase (more than 3–5 dB) in ambient noise levels in the project vicinity above levels existing without the project.

Also, HVAC equipment would not exceed the County's performance standard of 55 dB L_{eq} (Table 3.11-9) for on-site noise-sensitive uses affected by HVAC noise during the daytime period (Table 3.11-6), and would not result in a substantial permanent increase (more than 3–5 dB) in ambient noise levels in the project vicinity above levels existing without the project. Therefore, this impact would be **less than significant**.

Parking Lot Activities

Noise level measurements of parking lot activities (conducted by AECOM acoustic specialists on similar projects) indicate that average SELs associated with a single parking event (i.e., vehicle arrival, limited idling, occupants exiting the vehicle, door closures, conversations among passengers, occupants entering the vehicle, startup, departure of the vehicle) is 71 dB SEL at distance of 50 feet (AECOM 2008, FTA 2006). Assuming 450 peak-hour parking events and a standard attenuation rate of 6 dB per doubling of distance, the combined noise level from parking lot activities would be 62 dBA L_{eq} at a distance of 50 feet and would be attenuated to 42 dB L_{eq} at the nearest noise-sensitive receptor, located approximately 500 feet east of the center of the parking lot.

As a result, parking lot operations would neither exceed the County's performance standard of 55 dB L_{eq} for residential uses during the daytime period (Table 3.11-6) nor the City's performance standard of 55 dB L_{eq} for noise-sensitive land uses affected by non-transportation noise during the daytime period (Table 3.11-12). In addition, parking lot operations would not result in a substantial permanent increase (more than 3–5 dB) in ambient noise levels in the project vicinity above levels existing without the project. Therefore, this impact would be **less than significant**.

Access Road

The project includes an access road. Typical operations of a school driveway occur intermittently with drop-off or pick-up events occurring in the mornings, midday, and afternoon. The access road would be located along the southeastern portion of the site, with the nearest off-site noise-sensitive receptor located approximately 350 feet to the east (Exhibit 2-2). The volume of peak-hour traffic from the access road would be 950 vehicle trips, as discussed in Section 3.13, "Traffic and Transportation." The assumptions used for predicting the peak-hour vehicle trips along the access road are as follows:

- ▶ speed of 25 miles per hour,
- ▶ 950 peak-hour vehicle trips,
- ▶ 1% medium and 1.5% heavy trucks, and
- ▶ peak-hour operations would be 100% during the daytime.

The predicted noise level from on-site traffic is 63 dB L_{eq} at a distance of 50 feet from the centerline of the access road. As discussed above, the nearest off-site noise-sensitive receptor would be located 350 feet to the east of the access road centerline. At that location, the noise level is predicted to be 55 dB L_{eq} during peak-hour operations.

In case of emergency, the predicted noise level from on-site traffic would be 55 dB L_{eq} at a distance of 50 feet from the centerline of the potentially emergency routes in the residential area to the east, assuming a speed of 15 miles per hour. The nearest noise-sensitive receptors would be located 50 to 100 feet to the emergency routes centerline. The noise levels would be 52 to 55 dB L_{eq} during peak-hour operations.

As a result, traffic noise along the access road would not result in a substantial permanent increase (more than 3–5 dB) above existing ambient noise level (56 dB L_{eq} at ST-03 in Table 3.11-1) in this area. Also, project-generated traffic along the access road would not exceed the City’s standard of 62 dB L_{eq} (existing noise level of 56 dB L_{eq} + 6 dB allowable increment) (Table 3.11-12) for noise-sensitive land uses. Therefore, this impact would be **less than significant**.

Playfield Activities

The playfields would only be used during the day and would not have lighting for nighttime use. At a distance of 100 feet from an elementary school playground being used by 100 students, average noise level of 60 dB L_{eq} , can be expected (Sacramento County 2017). The nearest noise-sensitive receptor to the proposed playfields is located approximately 300 feet to the east from the nearest playground (Exhibit 2-4). The resulting noise level at the nearest noise-sensitive receptor would be 52 dB L_{eq} . The predicted noise levels from playfield activities would not exceed City of Sacramento’s performance standard of 55 dB L_{eq} (Table 3.11-12). Furthermore, Section 6.68.090 of the Sacramento County Code exempts noise from parks, public playgrounds, and school grounds, provided they are owned and operated by a public entity (such as NUSD) or by a private school. Based on noise modeling, playfield activities would not substantially increase ambient noise levels. In addition, playfield activities would not result in a substantial permanent increase (more than 3–5 dB) in ambient noise levels in the project vicinity above levels existing without the project (Table 3.11-1). Therefore, this impact is considered **less than significant**.

Summary

Overall, stationary-source noise levels from mechanical HVAC noise, parking lot activities, the on-site project drive, pedestrian/bicycle and emergency access, and playfield activities would not exceed applicable noise standards at nearby existing or future noise-sensitive receptors, without accounting for additional noise attenuation from distance, which would not result in an exceedance of City or County standards. This impact is considered **less than significant**.

Mitigation Measures

No mitigation measure is required.

IMPACT 3.11-5 **Land Use Compatibility of On-Site Sensitive Receptors with existing and Future Airport Noise.** *Exterior noise levels from aircraft overflights at the project site would not exceed County or ALUCP standards for compatibility. The proposed project would experience noise from aircraft overflights, however, would not expose staff and school children to interior noise levels that exceed applicable standards. Therefore, this impact is considered less than significant.*

The purpose of this EIR is to identify the significant effects of the proposed project on the environment, not the significant effects of the environment on the proposed project (*Ballona Wetlands Land Trust et al. v. City of Los Angeles* [2011] 201 Cal.App.4th 455). Although identifying the environmental effects of attracting development and people to an area is consistent with CEQA's legislative purpose and statutory requirements, identifying the effects on the proposed project and its users of locating the project in a particular environmental setting is neither consistent with CEQA's legislative purpose nor required by the CEQA statutes. Nonetheless, for disclosure purposes, the District has elected to provide analysis of relevant impacts of existing environmental conditions relative to the proposed project, including existing and future noise.

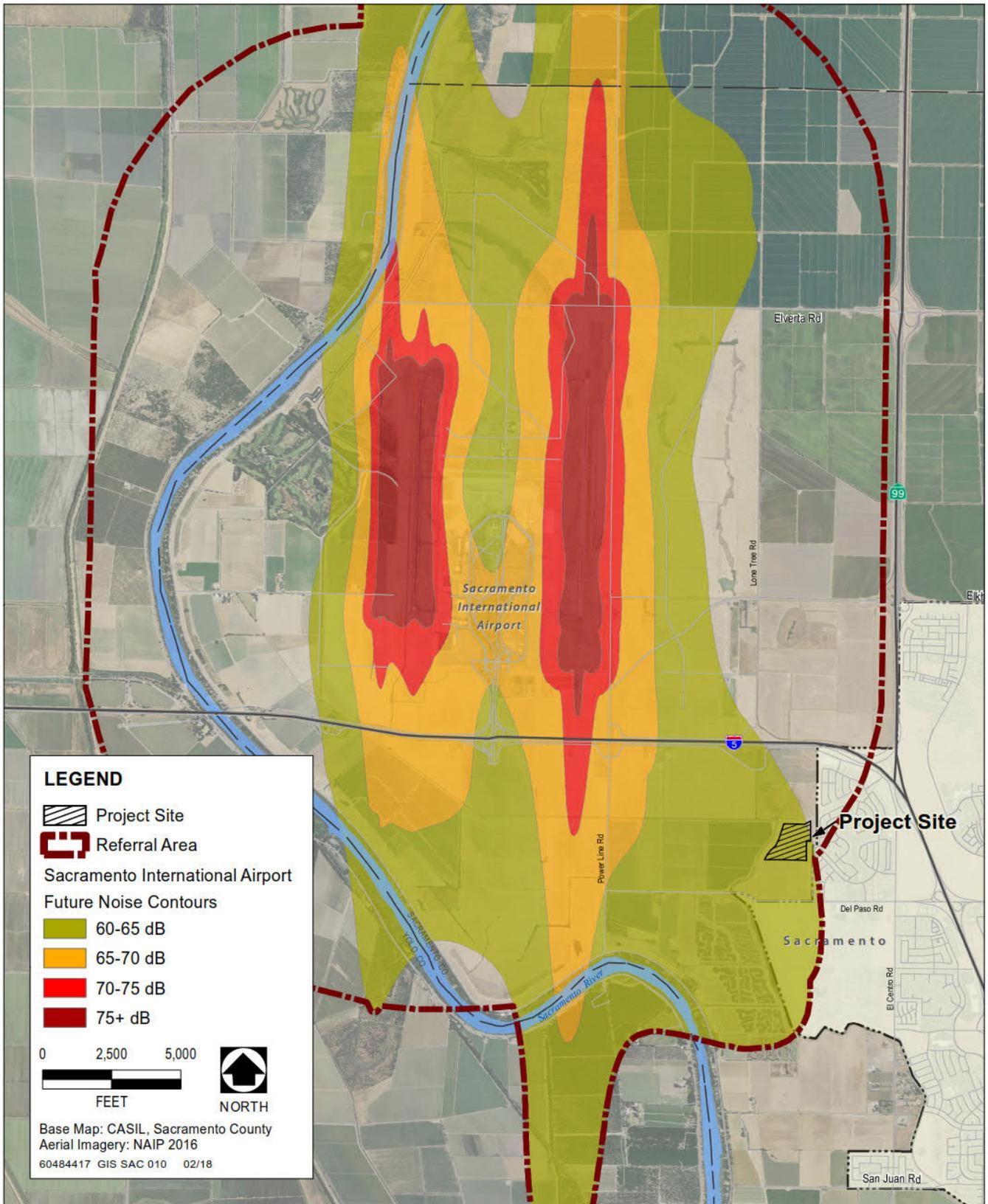
Exterior Noise from Aircraft

Table 1 and Table 2 of ALUCP [Table 3.11-8 of this DEIR], summarizes land use compatibility of Sacramento International Airport noise. Exhibit 3.11-3, above, depicts the airport's existing noise contours and demonstrates that the project site is outside the 60 to 65 dB CNEL contour (i.e., aircraft noise is less than 60 dB at the school site). Therefore, the project site is outside the 60 to 65 dB CNEL contour but within Referral Area 1.

Exhibit 3.11-4 depicts the airport's future⁹ noise contours and demonstrates that the project site would be within the 60 to 65 dB CNEL contour (i.e., aircraft noise is above 60 dB at the school site). Also, the project site is located within Referral Area 1 under both existing and future conditions. Referral Area 1 shown in Exhibit 3.11-4 encompasses locations where noise and/or safety represent compatibility concerns. However, for the 60–65 CNEL noise contour, the ALUCP identifies schools as a Conditional Use. The conditions for schools in areas above 60 dB CNEL are identified in Policies 3.2.2(a) and 4.1.5.

Policy 3.2.2 discusses special circumstances and special measures that can address adverse consequences, with reference to Section 4.2. Section 4.2 then references Policy 4.1.5. Under Policy 4.1.5, the ALUCP explains that the Airport Land Use Commission can find a normally incompatible use to be compatible with findings that the land use will neither (1) create a safety hazard to people on the ground or aircraft in flight nor (2) result in excessive noise exposure for the proposed use. The school will not create a safety hazard with the revised site plan. (Please see Section 3.10, "Land Use and Planning," for further details related to the project project's land use compatibility with the ALUCP.) The proposed site plan does not place buildings within Safety Zone 4 of the Sacramento International Airport Land Use Compatibility Plan, and instead any buildings would be placed in Safety Zone 6, where K–12 schools are a normally compatible use (SACOG 2018). As a result, the proposed

⁹ The noise contours included in Map 2 [Exhibit 3.11-4 of this DEIR], Compatibility Policy Map: Noise are based upon contours adopted by the County of Sacramento for land use planning purposes within unincorporated areas of the county. These contours reflect a "Theoretic Capacity" level of Airport activity extending beyond the minimum 20-year time frame that state law requires be utilized in compatibility plans. The contours in Map 2 [Exhibit 3.11-4 of this DEIR], have been adjusted from the Theoretic Capacity contours adopted by Sacramento County to take into account both of the contemplated future runway system configuration scenarios. The contours are a composite set of contours comprised of the highest noise exposure associated with the two future runway scenarios at any given location (ALUCP 2013).



Source: Sacramento International ALUCP 2013 (Map 2); GIS Data from SACOG

Exhibit 3.11-4. Sacramento International Airport Noise Contours (2017)

school site is compatible with the Sacramento International ALUCP Land Use Compatibility Guidelines for safety attributable to aircraft operations.

With respect to aircraft noise, measured ambient noise levels indicate that the project site would be exposed to above 60 dB L_{eq} aircraft noise level. As shown in Table 3.11-1, the site ambient noise survey found hourly noise levels that ranged between 54 dB and 57 dB L_{eq} and 64 dB and 76 dB L_{max} (Table 3.11-1 excluding ST-04). The measured ambient noise levels at location LT-01 (Exhibit 3.11-2) indicates that the hourly exterior noise levels during school hours (8 a.m. to 3 p.m.) ranges from 48.2 dB L_{eq} to 64.7 dB L_{eq} .

The SEL values attributable to aircraft flying overhead, ranged from 69 dB to 80.6 dB (Table 3.11-3), which resulted in equivalent average noise levels (L_{eq}) of 60.8 to 67.6 dBA L_{eq} and maximum noise levels of 66.8 to 82.8 dBA L_{max} . As shown in Table 3.11-3, the SEL values attributable to aircraft flying overhead, ranged from 69 dB to 80.6 dB (Table 3.11-3), which resulted in equivalent average noise levels (L_{eq}) of 60.8 to 67.6 dBA L_{eq} and maximum noise levels of 66.8 to 82.8 dBA L_{max} . Also, the percentage of an hour affected by aircraft noise ranged from 0.3 percent to 16.4 percent based on the ambient noise measurement at location LT-01 (Exhibit 3.11-2).

The existing CNEL level at the project site was 57.2 dB CNEL (LT-01, Tale 3.11-1), which is below the Sacramento County exterior noise level standard of less than 70 dB CNEL for schools from transportation noise sources (Table 3.11-4). Therefore, is the aircraft noise impact under existing with project condition would be **less than significant**.

With respect to future aircraft noise impact, the proposed school would be designed to provide an appropriate setting for classroom instruction, including noise exposure. Under Policy 4.1.5, the ALUCP explains that the Airport Land Use Commission can find a normally incompatible use to be compatible with findings that the land use will neither (1) create a safety hazard to people on the ground or aircraft in flight nor (2) result in excessive noise exposure for the proposed use. The proposed site plan does not place buildings within Safety Zone 4 of the Sacramento International Airport Land Use Compatibility Plan, and instead any buildings would be placed in Safety Zone 6, where K–12 schools are a normally compatible use. Based on State standards, the school is required to be designed so that interior noise levels are appropriate for the function of classrooms (SACOG 2018). By following procedures and State regulations, the NUSD cannot acquire title to a property that would conflict with findings of the DOT Aeronautics Program, which has regulations limiting the exterior and interior noise exposure to sensitive uses in the vicinity of airports. Therefore, impacts associated with airport noise would be **less than significant**.

Interior Noise from Aircraft

The County and ALUC have established interior noise standards for school uses or for uses where speech intelligibility is essential and where communication may be affected by transportation noise. The interior noise standards are 45 dB L_{eq} in the County General Plan, and 45 dB L_{eq} in the Sacramento International Airport LUCP.

The measured ambient noise levels at location LT-01 (Exhibit 3.11-2) indicates that the hourly exterior noise levels during school hours (8 a.m. to 3 p.m.) ranges from 48.2 dB L_{eq} to 64.7 dB L_{eq} . As discussed in Division of Aeronautics letter that was provided in 2006, the proposed site is located inside the designated boundaries of Class C (congested) airspace and the site is a new community that may have expectations of low background noise levels. If the project is approved, noise attenuation methods should be incorporated into building

construction to minimize annoyance and distraction that may result from aircraft operating in the vicinity of the school (Caltrans 2006).

To reduce interior (classroom) noise, NUSD will design and use building materials necessary to provide acceptable classroom environments. According to EPA, the average sound-level reduction from typical building construction would be 15 dB with windows open and 25 dB with windows closed (EPA 1974). With these measures incorporated, classrooms would be exposed to interior noise levels of 23.2 to 39.7 dB L_{eq} with windows closed (assumed noise reduction of 25 dB). In this way, the interior classroom noise would be below the Sacramento International ALUCP guidelines for noise of 45 L_{eq} and this impact would be **less than significant**.

Furthermore, per Education Code Section 17215, the District must receive approval from the CDE and California Department of Transportation (Caltrans or DOT) before acquiring title to property for a school site if it is within two nautical miles of an airport runway (CDE 2017), the responsibilities of the school district, the California Department of Education, and the Department of Transportation (DOT), Aeronautics Program, Office of Airports, concerning the school site's proximity to runways are contained in Education Code Section 17215 (as amended by Assembly Bill (AB) 747, Chapter 837, Statutes of 1999). (See CCR, Title 5, Section 14011(k).)

As a part of the site selection prescreening process, the school district should determine the proximity of the site to runways. Both the Department and DOT have maps identifying airport locations. If the site is within two nautical miles of an existing airport runway or a potential runway included in an airport master plan, as measured by direct air line from the part of the runway that is nearest to the school site, the following procedures must be followed before the site can be approved:

1. The governing board of the school district, including any district governed by a city board of education, shall give the Department written notice of the proposed acquisition and shall submit any information that is required by the Department. The Department will notify the DOT Aeronautics Program, Office of Airports.
2. The Division of Aeronautics shall investigate the proposed site and, within 30 working days after receipt of the notice, shall submit to the local governing board a written report and its recommendations concerning acquisition of the site. As a part of the investigation, the Aeronautics Program shall give notice to the owner and operator of the airport, who shall be granted the opportunity to comment on the proposed school site.
3. The governing board of the school district shall not acquire title to the property until the report of the DOT Aeronautics Program has been received. If the report favors the acquisition of the property for a school site or an addition to a present school site, the governing board shall hold a public hearing on the matter before acquiring the site.
4. If the report does not favor the acquisition of the property for a school site or an addition to a present school site, the governing board may not acquire title to the property. If the report does not favor acquisition of a proposed site, no state funds or local funds shall be apportioned or expended for the acquisition of that site, construction of any school building on that site, or the expansion of any existing site to include that site.

Without consideration of building materials and design, future interior classroom noise levels could exceed acceptable levels. As noted, the purpose of an EIR is to identify the significant effects of the proposed project on the environment, not the significant effects of the environment on the proposed project (*Ballona Wetlands Land Trust et al. v. City of Los Angeles* [2011] 201 Cal.App.4th 455). While the effects on the proposed project and its

users of locating the project in a particular environmental setting is neither consistent with CEQA's legislative purpose nor required by the CEQA statutes, the District has imposed the following mitigation to ensure acceptable classroom noise environments.

Mitigation Measure

Mitigation Measure 3.11-5: Ensure Appropriate Noise Levels for Interior Learning Spaces

NUSD shall comply with Title 24, Part 11, California Green Building Standards Chapter 5 and the California Department of Education, Division of the State Architect Project Submittal Guidelines related to interior classroom noise levels. The school shall incorporate building materials and, if necessary, other design techniques needed to achieve a total background noise of no more than 45 dBA (L_{eq}) for existing and forecast conditions, including the effects of both exterior-source noise and building service and utility noise.

Significance after Mitigation

Pursuant to Section 5.507,4.2 of the Project Submittal Guidelines, DSA requires that interior noise attributable to exterior sources not exceed an hourly equivalent noise level of 50 dBA in occupied areas during any hour of operation. Additionally, Section 5.507,4 of the Project Submittal Guidelines prescribes certain types of building materials based on how effective the material is at attenuating sound for interior learning spaces. Section 5.507,4.1 of the Project Submittal Guidelines establishes prescriptive requirements for projects within the 65 CNEL noise contour of an airport. The impact associated with airport noise is considered **less than significant**.

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3.12 PUBLIC SERVICES, INCLUDING RECREATION

This section provides an overview of impacts related to the provision of public services and facilities, including fire protection, law enforcement, public schools, and parks and recreation. Impact analysis is focused on expansions or extensions to public services and facilities associated with the proposed project that could cause potentially adverse physical environmental effects.

3.12.1 ENVIRONMENTAL SETTING

Public services would be provided by the Natomas Fire Protection District through services contracted with the Sacramento Fire Department (SFD), the Sacramento County Sheriff's Department, the Natomas Unified School District (NUSD), and the City of Sacramento Youth, Parks, and Community Enrichment Department (YPCE).

FIRE PROTECTION AND EMERGENCY MEDICAL SERVICES

SFD provides fire suppression, emergency medical services, technical rescue, hazardous materials mitigation and response, fire prevention, fire investigation, code enforcement, public education, and contributes to disaster preparedness throughout the City of Sacramento and the Natomas and Pacific-Fruitridge Fire Protection Districts.

The SFD has 24 active fire stations strategically located throughout its service area. Eight stations are located north of the American River, with seven stations in the downtown and eastern sections of the city, and nine stations in the southern portions of the city. On a daily basis, the SFD staffs 24 fire engines, nine ladder trucks and one heavy rescue. The city's 24 fire stations are organized into three battalions. Each engine and truck is staffed with 4 persons except for one engine which is staffed with three persons.

The closest station to the project site is Station 43 located at 4201 El Centro Road, approximately 1.4 miles away from the project site. SFD has preliminary plans to construct additional fire stations, including an additional station that will serve South Natomas (City of Sacramento 2015a).

POLICE PROTECTION

Sacramento County Sheriff's Department

The Sacramento County Sheriff's Department would provide police protection services to the project site. The Sacramento County Sheriff's Department operates several facilities, including a headquarters building, main jail, the Rio Cosumnes Correctional Center, five station houses, 10 community service centers, a training academy, firearms training facility, marine enforcement detail, and an air support bureau. Local law enforcement protection consists of response to calls and trouble spots, investigations, surveillance, and routine patrolling.

The project site is within the department's North Division. The North Division is headquartered at 5510 Garfield Avenue, approximately 17 miles northeast of the project site. The North Division is currently staffed with 134 sworn officers and 19 support staff. It provides patrol functions to the communities of Carmichael, Fair Oaks, Gold River, Orangevale, Arden-Arcade, Foothill Farms, Antelope, North Highlands, Rio Linda, Elverta, and the Garden Highway (Sacramento County Sheriff's Department 2018). The closest station to the project site is located at 2638 El Paseo Lane, approximately 13 miles southeast of the project site.

California Highway Patrol

The California Highway Patrol (CHP) provides traffic regulation enforcement, emergency management, and vice assistance on state highways, all federal interstate highways, and other major roadways in Sacramento County. The project site is located within the CHP Valley Division, which is comprised of 20 area offices, one commercial vehicle enforcement facility, and four communications centers (CHP 2016).

SCHOOLS

As discussed in Chapter 2, “Project Description,” the proposed project would construct and operate a Kindergarten through 8th grade school in the NUSD. NUSD currently operates 19 public schools: nine elementary schools, four middle schools, three comprehensive high schools, two K–12 schools, and one continuation school.

Table 3.12-1 shows the historic and projected elementary and middle school enrollment from 2010 to 2020. Between the 2017-2018 school year and 2019-2020 school year, elementary and middle school enrollment is projected to increase by 14 percent and 4 percent, respectively. NUSD has been taking steps to address its current overcrowding, such as moving 6th graders to middle schools, adjusting school boundaries, and adding portable classrooms.

School	2010-2011	2011-2012	2012-2013	2014-2015	2015-2016	2016-2017	2017-2018 ¹	2018-2019	2019-2020
Elementary	5,822	5,617	5,601	5,798	5,846	5,850	5,244	5,833	5,996
Middle	947	938	780	1,095	1,392	1,414	1,088	1,094	1,128

Notes:
¹ Actual 2017-2018 total enrollment
 Source: California Department of Education 2018; NUSD 2014

PARKS

The City of Sacramento YPCE provides park services to the adjacent Westlake development, as well as south of the project site in the Natomas Central residential development. The YPCE manages 226 parks comprising 3,200 acres; 88 miles of road bikeways and trails; 21 lakes, ponds or beaches; and 27 aquatic facilities. The City maintains a goal of providing a minimum of 5 acres of active use park land per 1,000 residents (City of Sacramento 2015b).

The closest parks to the project site include Egret Park, Sparrow Park, and Westlake Community Park, all of which are located in the Westlake residential development, and Blackbird Park located in the Natomas Central residential development south of the project site.

3.12.2 REGULATORY CONTEXT

FEDERAL AND STATE PLANS, POLICIES, REGULATIONS, AND LAWS

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 Equipment,” the California Occupational Safety and Health Administration has established minimum standards for fire suppression and emergency medical services. The standards include, but are not limited to, 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 equipment.

Fire Codes and Guidelines

The California Fire Code (CFC) contains regulations relating to construction, maintenance, and use of buildings. Topics addressed in the code 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 California Fire Code contains specialized technical regulations related to fire and life safety.

The NUSD will be required to incorporate CFC requirements. These standards address access road length, dimensions, and finished surfaces for firefighting equipment; security gate design requirements; fire hydrant placement; fire flow availability and requirements; and plan submittal requirements.

REGIONAL AND LOCAL PLANS, POLICIES, REGULATIONS, AND ORDINANCES

Sacramento County General Plan

The County General Plan contains goals, objectives, and policies related to the provision of public services. While these policies do not apply to the project, they are provided for background below.

Public Facilities

- ▶ **Policy PF-30.** New elementary schools in the urban area should be planned whenever possible so that almost all residences will be within walking distance of the school (one mile or less) and all residences are within two miles of a school.
- ▶ **Policy PF-31.** Schools shall be planned adjacent to neighborhood parks whenever possible and designed to promote joint use of appropriate facilities. The interface between the school and park shall be planned with an open design and offer unobstructed views to promote safety.
- ▶ **Policy PF-54.** Require new development to install fire hydrants and associated water supply systems which meet the fire flow requirements of the appropriate fire district.
- ▶ **Policy PF-55.** New development shall provide access arrangements pursuant to the requirements of the California Fire Code.

3.12.3 ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

ANALYSIS METHODOLOGY

Impacts related to public services and facilities attributable to the proposed project were evaluated by comparing existing service capacity and facilities against future demand generated by the proposed project and identifying reasonably foreseeable service and facilities expansion.

THRESHOLDS OF SIGNIFICANCE

Based on Appendix G of the CEQA Guidelines, an impact related to public services, including recreation is considered significant if the proposed project would:

- ▶ result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for fire protection, police protection, schools, or parks;
- ▶ 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; or
- ▶ include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.

ISSUES NOT DISCUSSED FURTHER

- ▶ **Increased Demand for School Services and Facilities**—The proposed project would not increase the demand for or cause a shortfall of school services or facilities. The proposed project would not provide any new housing that generates students. Rather, the proposed project would meet the educational needs of up to approximately 1,000 NUSD elementary school students, meet NUSD’s geographical needs for additional schools within its service boundary and west of Interstate 5, and slow enrollment growth at nearby overcrowded elementary schools. As discussed in Chapter 2, “Project Description,” the NUSD is proposing to construct and operate a new elementary school that consists of approximately 82,000 square feet of total building space, a multi-purpose/gymnasium, an internal quad, hardcourts, and playing fields. The environmental effects of construction and operation of the school is detailed in relevant sections throughout this EIR in connection with discussions of the impacts of overall site development. Mitigation measures are identified for potentially significant and significant impacts. There are no additional potentially significant or significant impacts beyond those comprehensively considered throughout the other sections of this EIR. This issue is not evaluated further.
- ▶ **Increased Demand for Parks**—The proposed project would not increase the population in the project area as a result of new housing or employment opportunities. Consistent with Policy PF-31 of the County General Plan, the school would be cited near existing neighborhood parks, including Egret Park, Sparrow Park, and Westlake Community Park in the Westlake residential development. Therefore, the proposed project would not increase the use of existing neighborhood or community parks or require construction of new parks to meet the City’s parkland standard. Thus, there would be no impact related to the increased demand for parks would occur and this issue is not evaluated further.

- ▶ **Increased Demand for Existing Regional Parks or Other Recreational Facilities**—The proposed project would not increase the population in the project area as a result of new housing or employment opportunities. Therefore, the proposed project would not increase the use of existing neighborhood and regional parks or other recreational facilities. This issue is not evaluated further.
- ▶ **Construction of Recreational Facilities**—The proposed project would construct hardcourts and playing fields. Impacts associated with these facilities are addressed in relevant sections throughout this EIR. Mitigation measures are identified for potentially significant and significant impacts. There are no additional potentially significant and significant impacts beyond those comprehensively considered throughout the other sections of this EIR. This issue is not evaluated further.

IMPACT ANALYSIS

IMPACT 3.12-1 **Increased Demand for Fire Protection Facilities and Services.** *The proposed project would increase demand for fire protection services at the project site by development of school facilities on currently vacant land. Incorporation of all California Fire Code requirements into project designs would reduce the dependence on fire department equipment and personnel by reducing fire hazards. Therefore, the proposed project would not affect SFD's response times or other performance objectives and would not result in the construction of new or expansion of existing fire protection facilities. Impacts associated with increased demand for fire protection facilities and services would be less than significant.*

The proposed project includes development of approximately 82,000 square feet of total building space, a multi-purpose/gymnasium, an internal quad, hardcourts, and playing fields on currently vacant land. SFD would project fire protection services to the project site. Approximately 15.6 acres of the project site would be maintained with low lying vegetation for fire abatement.

The NUSD would be required to incorporate California Fire Code requirements into project designs. These standards address access road length, dimensions, and finished surfaces for firefighting equipment; fire hydrant placement; fire flow availability and requirements; and plan submittal requirements. Incorporation of these standards would be consistent with General Plan policies PF-54 and PF-55. In addition, the California Fire Code requires that every public or private school building having an occupant load of 50 or more students or more than one classroom have an automatic fire alarm system using the California Fire Code Signal outlined in the California Education Code (Sections 32000–32004). Furthermore, the California Education Code requires new schools to install an automatic fire sprinkler system (Section 17074.52).

Incorporation of all California Fire Code and California Education Code requirements into project designs would reduce the dependence on fire department equipment and personnel by reducing fire hazards. Therefore, the proposed project would not affect SFD's response times or other performance objectives and would not result in the construction of new or expansion of existing fire protection facilities. Impacts associated with increased demand for fire protection facilities and services would be **less than significant**.

Mitigation Measure

No mitigation measure is required.

IMPACT 3.12-2 **Increased Demand for Police Protection Services.** *Operation of the proposed project would not require additional Sacramento County Sheriff's Department staffing to maintain its officer-to-population service ratio. It is not expected that the proposed project would substantially increase the Sheriff's Department calls for service. Therefore, operation of the proposed project would not affect the Sacramento County Sheriff's Department performance objectives and would not result in the construction of new or expansion of existing police protection facilities that result in environmental effects. This impact would be **less than significant**.*

The proposed project would not increase the population as a result of new housing; therefore, the proposed project would not require additional Sacramento County Sheriff's Department staffing to maintain its officer-to-population service ratio.

Sacramento County Sheriff's Department would respond to criminal offenses at the new community school, such as disorderly conduct; trespassers; the possession of weapons on campus; or the illegal sale, use, and distribution of controlled substances and alcohol. In addition, the NUSD contracts with Sacramento Police Department for three school resource officers and a supervisor. These officers would monitor and respond to campus concerns (NUSD 2018).

Given the type and scale, it is not expected that the proposed project would substantially increase the Sheriff's Department calls for service. The site would be lit at night for security purposes as a way to discourage crime. Operation of the proposed project would not affect the Sacramento County Sheriff's Department performance objectives and would not result in the construction of new or expansion of existing police protection facilities that result in environmental effects. This impact would be **less than significant**.

Mitigation Measure

No mitigation measure is required.

3.13 TRAFFIC AND TRANSPORTATION

This section presents a summary of traffic and transportation impacts of the proposed project. For more detail, please refer to the traffic study in Appendix G to this EIR. The following scenarios were evaluated:

- ▶ Existing No-Project Conditions
- ▶ Existing Plus Project Conditions
- ▶ Cumulative (2035) No-Project Conditions
- ▶ Cumulative (2035) Plus Project Conditions¹

3.17.1 ENVIRONMENTAL SETTING

STUDY AREA

The project site and surrounding roadway network are shown in Appendix G. Table 3.13-1 lists the intersections, roadway segments, and Interstate 5 (I-5) mainline segments and ramp-mainline junctions that were selected for analysis, along with their respective jurisdictions. Intersections, roadway segments, and I-5 mainline segments and ramp-mainline junctions were selected based on existing traffic circulation patterns and the NUSD school boundaries.

- ▶ **I-5** is a north-south freeway within the study area with an interchange at Del Paso Road. It consists of four lanes in each direction.
- ▶ **Del Paso Road** is an east-west arterial that originates as a two-lane rural road at an intersection with Powerline Road west of the project site. Del Paso Road extends easterly for a mile to the Sacramento City limits, where the road transitions to a divided arterial street. Del Paso Road continues past the project site to an interchange on I-5. In the immediate vicinity of the project site, the south side of Del Paso Road has been widened to its ultimate four-lane arterial section. The north side of Del Paso Road in the immediate vicinity of the project site remains in unincorporated Sacramento County and has not been improved to urban standards.
- ▶ **Power Line Road** is a north-south rural roadway that originates at its intersection with Del Paso Road west of the project site.
- ▶ **El Centro Road** is a north-south arterial street that traverses the north Sacramento and Natomas neighborhoods west of I-5. El Centro Road originates south of the project site at an intersection with West El Camino Avenue near Interstate 5. El Centro Road is a fully improved four-lane arterial street in the vicinity of the Del Paso Road intersection, although the road narrows to two lanes near Hawkview Drive.
- ▶ **Hovnanian Drive** is a north-south collector street that intersects Del Paso Road where the project proposes its primary access point. Hovnanian Drive extends southeasterly from Del Paso Road along the south side of Natomas Middle School to Natomas Center Drive.

¹ Other impact topics are addressed in Sections 3.1 through 3.15, cumulative impacts, including cumulative traffic and transportation impacts, are addressed in Chapter 5 of this EIR.

**Table 3.13-1.
Study Area Roadway Intersections and Segments**

Number	Name	Jurisdiction
Intersections		
1	Del Paso Road/Powerline Road	Sacramento County
2	Del Paso Road/Hovnanian Drive	Sacramento County
3	Del Paso Road/Wyndview Way	City of Sacramento
4	Del Paso Road/Broadgate Drive /Natomas Central Drive	City of Sacramento
5	Del Paso Road/El Centro Road	City of Sacramento
6	Del Paso Road/I-5 southbound off-ramp	City of Sacramento and Caltrans
7	Del Paso Road /I-5 northbound ramps	City of Sacramento and Caltrans
8	Del Paso Road /East Commerce Way	City of Sacramento
9	Hovnanian Drive /Natomas Central Drive	City of Sacramento
Roadway Segments		
1	Del Paso Road between Power Line Road and Hovnanian Drive	Sacramento County
2	Del Paso Road between Hovnanian Drive and Natomas Central Drive	City of Sacramento
3	Del Paso Road between Wyndview Way and Natomas Central Drive	City of Sacramento
4	Del Paso Road between Natomas Central Drive and El Centro Road	City of Sacramento
5	Del Paso Road between El Centro Road and I-5	City of Sacramento
6	Del Paso Road between I-5 and East Commerce Way	City of Sacramento
7	Hovnanian Drive between Del Paso Road and Natomas Central Drive	City of Sacramento
Interstate 5 Mainline		
	State Route 99 to Del Paso Road	Caltrans
	Del Paso Road to Arena Boulevard	Caltrans
	Arena Boulevard to Del Paso Road	Caltrans
	Del Paso Road to State Route 99	Caltrans
Interstate 5 Ramps (Southbound)		
	Del Paso Road off ramp	Caltrans
	Westbound Del Paso Road on ramp	Caltrans
	Eastbound Del Paso Road on ramp	Caltrans
Interstate 5 Ramps (Northbound)		
	Del Paso Road off ramp	Caltrans
	Westbound Del Paso Road on ramp	Caltrans
	Eastbound Del Paso Road on ramp	Caltrans
Notes: Caltrans = California Department of Transportation; I-5 = Interstate 5		
Source: Data compiled by AECOM in 2017		

- ▶ **Natomas Central Drive** is a collector street that links Del Paso Road with the Westlake residential development to the north and another residential development to the south. Natomas Central Drive is a divided two-lane road that extends south of Del Paso Road to the Arena Boulevard interchange on I-5. The Natomas Central Drive intersection with Del Paso Road is controlled by a traffic signal.
- ▶ **East Commerce Way** is a two-lane collector street that intersects with Del Paso Road east of I-5. East Commerce Way provides access to the Creekside development to the north and commercial area to the south.
- ▶ **Wyndview Way** is a two-lane local street that links the Westlake residential development with Del Paso Road. Access to Del Paso Road at the Wyndview Way intersection prohibits eastbound left turns by a raised median.
- ▶ **Westlake Parkway** is a two-lane collector street that serves as the internal backbone of the Westlake residential development. The road extends in a counterclockwise direction from an intersection with Snelling Lane near the project site to an intersection with Callison Drive at the Westlake residential development's northeast corner.
- ▶ **Broadgate Drive** is a collector street that links Del Paso Road with the Westlake residential development to the north and another residential development to the south. Broadgate Drive is a divided two-lane street that extends to Westlake Parkway.

VEHICLE MILES TRAVELED (VMT)

Under Senate Bill 743 (SB 743), the focus of transportation analysis shifted from driver delay to travel demand. Measurements of transportation impacts may include vehicle miles traveled, vehicle miles traveled per capita, automobile trip generation rates, or automobile trips generated. SB 743 directs the Governor's Office of Planning and Research (OPR) to develop guidelines for assessing transportation-related impacts that "promote the reduction of greenhouse gas emissions, the development of multimodal transportation networks, and a diversity of land uses" (Public Resources Code Section 21099[b][1]). Vehicle miles traveled, or VMT, has long been a common metric to use to measure travel demand. A VMT is one vehicle traveling on a roadway for one mile. For this section and most of Sacramento Area Council of Governments' (SACOG's) technical analysis, VMT is estimated and projected for a typical weekday, as defined in Chapter 5A of the 2036 Metropolitan Transportation Plan (MTP)/Sustainable Communities Strategy (SCS). Many communities have been estimating and developing policy related to VMT for years, including estimates and goals for VMT per person, VMT per employee, or other methods of normalization. SB 743 directs revisions to the CEQA Guidelines that would create criteria for assessing travel demand, such as "vehicle miles traveled, vehicle miles traveled per capita, automobile trip generation rates, or automobile trips generated" (Public Resources Code Section 21099[b][1]). Once the CEQA Guidelines are amended to include guidance for measuring travel demand, the Guidelines will recommend that delay related to congestion no longer be considered a significant impact under CEQA (OPR 2016). VMT has been a primary indicator of travel demand for decades for several reasons, including:

"First, it is relatively easy to measure by counting traffic on roadways at different locations. It is one of the few measures of transportation performance that has been consistently and comprehensively monitored and documented over time in the region... Second, VMT bears a direct relationship to vehicle emissions... Third, VMT can be influenced by policy in a number of different ways. By providing more attractive alternatives to driving alone, VMT can be reduced by shifting from vehicle

to non-vehicle modes... or from low occupancy to higher occupancy... VMT can be influenced by land use patterns as well. A better mix of residential, employment, education, and service uses in an area can allow people to accomplish their daily activities with less driving, and consequently, less VMT. Fourth, VMT correlates with congestion... Finally, VMT correlates with frequency of traffic accidents” (SACOG 2016, Chapter 5b, page 76).

SACOG prepared a regional analysis of VMT and found average daily VMT for Sacramento County to be approximately 32,937,000. This travel demand is forecast to increase to 37,092,000 in 2020 and to 43,669,000 in 2036 under the MTP/SCS (SACOG 2016).

LEVEL OF SERVICE

Roadway operating conditions are described using the concept of level of service (LOS). LOS is a qualitative measure of the effect of a number of factors, including speed, travel time, traffic interruptions, freedom to maneuver, safety, driving comfort/convenience, and operation costs. LOS ranges from A to F, from the best to worst, which covers the entire range of traffic operations that might occur. In general, LOS A represents free-flow conditions with no congestion, LOS E describes conditions approaching or at maximum capacity, and LOS F represents severe congestion and delay under stop-and-go conditions.

Sacramento County and the City of Sacramento use similar methodologies for assessing LOS at un-signalized intersections. At stop-sign-controlled un-signalized intersections (side street stop or one-way stop T intersections), the LOS is based on the length of the average delay experienced by motorists on the worst single movement, which is typically a left turn made from the stop-sign-controlled approach to the intersection. The capacity thresholds for arterials and rural facilities are from the Sacramento County Traffic Impact Analysis Guidelines (2004) and City of Sacramento Revised Guidelines for the Preparation of Traffic Impact Analysis Study (1996). These thresholds are used to identify the need for new or upgraded facilities.

The goal of Sacramento County and the City of Sacramento is to maintain a LOS D or better on all roads and intersections. Therefore, all projects must be designed to maintain a LOS D, unless the existing level of service is already below D, in which case the project must be designed such that there would be no decrease in the existing LOS. Tables 3.13-2 and 3.13-3 show daily volume thresholds for each LOS threshold for arterial, collector, rural, and residential streets.

**Table 3.13-2.
Sacramento County Roadway Level of Service Threshold**

Facility Type	No. of Lanes	Maximum Volume for Given Service Level				
		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	32,000	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	42,000	48,000	54,000	60,000
Rural two-lane highway	2	2,400	4,800	7,900	13,500	22,900
Residential Streets	2	600	1,200	2,000	3,000	4,500
Residential Collector with frontage	2	1,600	3,200	4,800	6,400	8,000
Residential Collector without frontage	2	6,000	7,000	8,000	9,000	10,000

Source: KD Anderson and Associates 2017

**Table 3.13-3.
City of Sacramento Roadway Level of Service Threshold**

Facility Type	No. of Lanes	Maximum Volume for Given Service Level				
		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	32,000	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	42,000	48,000	54,000	60,000
Collector Street – Major	2	10,500	12,250	14,000	15,750	17,500
Collector Streets – Minor	2	5,250	6,125	7,000	7,875	8,750
Residential	2	3,000	3,500	4,000	4,500	5,000

Source: KD Anderson and Associates 2017

Existing No-Project Conditions

Existing traffic volumes in the vicinity of the project site were determined by collecting weekday AM peak period (7:00 AM – 9:00 AM) and PM peak period (4:00 PM – 6:00 PM) turning movement counts at the study intersections and roadway segments as well as I-5 listed in Table 3.13-1. The traffic counts were collected in April 2016, while area schools were in session.

Tables 3.13-4 and 3.13-5 show the LOS for project study area intersections and roadway segments during weekday AM and PM peak hours under Existing No-Project conditions. As shown in Table 3.13-4, all of the project study area intersections are currently operating at LOS D or better during both the AM and PM peak hours. Table 3.13-5 shows all project study area roadway segments (as opposed to intersections) are operating at LOS B or better during both the AM and PM peak hours. Therefore, all project study area intersections and roadway segments are operating at acceptable LOS. No unsignalized intersections warrant a traffic signal.

**Table 3.13-4.
Intersection Levels of Service – Existing No-Project Conditions**

Intersection	Traffic Control Type	LOS Standard	Weekday AM Peak Hour		Weekday PM Peak Hour	
			LOS	Delay (sec/veh)	LOS	Delay (sec/veh)
1 Del Paso Road/Powerline Road (overall) Westbound Approach	Westbound Stop	D	A	4.0	A	4.0
			A	9.0	A	9.0
2 Del Paso Road/Hovnanian Drive	Signal	D	A	6.0	A	6.0
3 Del Paso Road/Wyndview Way (overall) Southbound Approach	Southbound Stop	D	A	3.0	A	2.0
			B	11.0	B	10.0
4 Del Paso Road/Broadgate Drive / Natomas Central Drive	Signal	D	C	21.0	C	16.0
5 Del Paso Road/El Centro Road	Signal	D	C	27.0	C	22.0
6 Del Paso Road/I-5 SB off-ramp	Signal	D	B	13.0	B	11.0
7 Del Paso Road /I-5 NB ramps	Signal	D	B	10.0	C	27.0
8 Del Paso Road /East Commerce Way	Signal	D	D	47.0	D	38.0
9 Hovnanian Drive /Natomas Central Drive	All-Way Stop Control	D	A	9.0	A	8.0

Notes: LOS = level of service; I-5 = Interstate 5; NB = northbound' SB = southbound; sec/veh = seconds per vehicle
Source: KD Anderson and Associates 2017

Segment	Lanes	Volume	LOS
1 Del Paso Road between Power Line Road and Hovnanian Drive	2	500	A
2 Del Paso Road between Hovnanian Drive and Natomas Central Drive	4	2,056	A
3 Del Paso Road between Wyndview Way and Natomas Central Drive	4	2,353	A
4 Del Paso Road between Natomas Central Drive and El Centro Road	4	10,649	A
5 Del Paso Road between El Centro Road and I-5	4	18,050	A
6 Del Paso Road between I-5 and East Commerce Way	6	39,321	B
7 Hovnanian Drive between Del Paso Road and Natomas Central Drive	2	733	A

Notes: LOS = level of service; I-5 = Interstate 5
Source: AECOM 2017

Tables 3.13-6 and 3.13-7 show the LOS for I-5 mainline segments and I-5 ramp-mainline junctions during weekday AM and PM peak hours under Existing No-Project conditions. As shown in Table 3.13-6, all of the mainline I-5 segments are currently operating at LOS C or better during both the AM and PM peak hours. Table 3.13-7 shows all I-5 ramp-mainline junctions are operating at LOS D or better during both the AM and PM peak hours. Therefore, all I-5 mainline segments and I-5 ramp-mainline junctions are operating at acceptable LOS.

Segment	Lanes	Weekday AM Peak Hour			Weekday PM Peak Hour		
		Volume (vph)	Density (veh/ mi/lane)	LOS	Volume (vph)	Density (veh/ mi/lane)	LOS
Southbound							
State Route 99 to Del Paso Road	4	4,510	18	C	4,011	16	B
Del Paso Road to Arena Boulevard	4	5,524	23	C	4,487	18	B
Northbound							
Arena Boulevard to Del Paso Road	4	3,653	15	B	4,011	16	B
Del Paso Road to State Route 99	3	3,227	17	B	4,487	18	B

Notes: LOS = level of service; I-5 = Interstate 5; vph = volume per hour; veh/mi/lane = vehicle per mile per lane
Source: KD Anderson and Associates 2017

**Table 3.13-7.
I-5 Ramps Levels of Service – Existing No-Project Conditions**

Ramp	Type	Weekday AM Peak Hour			Weekday PM Peak Hour		
		Volume (vph)	Density (veh/mi/lane)	LOS	Volume (vph)	Density (veh/mi/lane)	LOS
Southbound							
Del Paso Road off ramp	Weave	441	22	C	348	20	C
Westbound Del Paso Road on ramp	Merge	973	21	C	602	14	B
Eastbound Del Paso Road on ramp	Weave	482	17	B	202	13	B
Northbound							
Del Paso Road off ramp	Major Diverge	872	16	B	1,309	24	D
Eastbound Del Road on ramp	Merge	172	16	B	145	22	C
Westbound Del Paso Road on ramp	Merge	274	16	B	281	23	C

Notes: LOS = level of service; I-5 = Interstate 5; veh/mi/lane = vehicle per mile per lane
Source: KD Anderson and Associates 2017

BICYCLE AND PEDESTRIAN FACILITIES

Bicycle facilities are classified as Class I, II, or III. Bike paths (Class I) provide a right-of way that is completely separated from any street. Bike lanes (Class II) are separate lanes on roadways that are designated for use by bicycles via striping, pavement legends, and signs. Bike routes (Class III) are located on streets where bicyclists and vehicles share the traveled way, and are marked only by signs. Class II bike lanes are present along Del Paso Road, El Centro Road, Hovnanian Drive, Broadgate Drive, and Natomas Central Drive. Bike lanes are also provided throughout the adjacent Westlake residential development.

Pedestrian facilities include sidewalks, crosswalks, and pedestrian signals. Sidewalks are available on along Del Paso Road, El Centro Road, Hovnanian Drive, Broadgate Drive, Wyndview Way, and Natomas Central Drive.

TRANSIT FACILITIES

The project area is served by routes operated by the Sacramento Regional Transit District (RT). The closest route to the project site follows Del Paso Road to Wyndview Way into the Westlake residential development on the west side of I-5. Service is provided Monday through Friday.

In addition, the North Natomas Transportation Management Association operates the Natomas Flyer Route 171. This routes operates along Del Paso Road in the vicinity of the project site. There is a stop that would be less than a half mile walk to the school.

3.17.2 REGULATORY CONTEXT

STATE PLANS, POLICIES, LAWS, AND REGULATIONS

California Department of Transportation

Caltrans is responsible for planning, designing, constructing, operating, and maintaining State-owned roadways. Federal highway standards are implemented in California by Caltrans. Any improvements or modifications to the State highway system within Sacramento County or the City of Sacramento need to be approved by Caltrans.

Caltrans operates and maintains I-5, which provides regional access to the City and the project site. Additionally, the Caltrans Division of Planning has four major functions: the Office of Advance Planning, Regional Planning/Metropolitan Planning Organization, Local Assistance/IGR/CEQA, and System Planning Public Transportation. The Office of System Planning Public Transportation prepares Transportation Concept Reports in coordination with the regional planning partners and other district divisions. The Transportation Concept Reports (TCRs) are long-term planning documents, which evaluate current and projected conditions along specified routes. The TCRs establish 20-year planning visions and concepts and recommend long-term improvements to achieve the concept. The TCRs also reflect the plans of the applicable Regional Transportation Planning Agencies and Metropolitan Planning Organizations (MPOs, such as the Sacramento Area Council of Governments [SACOG] for the Sacramento region) for managing local and regional travel demand on State routes.

Caltrans has established a Concept Level of Service for all roadways under its jurisdiction. The Concept LOS assumes a 20-year horizon and improvements to the identified facility. For planning purposes, Caltrans has established LOS D as the minimal acceptable level of service for all roadways under its jurisdiction. However, Caltrans has determined it is not possible to maintain a LOS D standard in the Sacramento area, and determined that a project's impact is only considered significant if it results in LOS F.

REGIONAL AND LOCAL PLANS, POLICIES, LAWS AND REGULATIONS

SACOG Metropolitan Transportation Plan

SACOG is responsible for the preparation of, and updates to, the MTP and the corresponding Metropolitan Transportation Improvement Program (MTIP) for the six-county Sacramento region. The MTP provides a 20-year transportation vision and corresponding list of projects. The MTIP identifies short-term projects (7-year horizon) in more detail. The current MTP, the MTP/SCS 2036, was adopted in February 2016 (SACOG 2016). SACOG is also responsible for the oversight and distribution of most federal and State transportation funding sources.

Sacramento County General Plan

The following goal and policy from the *Sacramento County General Plan of 2005–2030* (County General Plan) (Sacramento County 2011) Circulation Element and Public Facilities Element relate to transportation:

Circulation Element

- ▶ **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.

Public Facilities Element

- ▶ **Policy PF-30:** New elementary schools in the urban area should be planned whenever possible so that almost all residences will be within walking distance of the school (one mile or less) and all residences are within two miles of a school.
- ▶ **Policy PF-31:** Schools shall be planned adjacent to neighborhood parks whenever possible and designed to promote joint use of appropriate facilities. The interface between the school and park shall be planned with an open design and offer unobstructed views to promote safety.
- ▶ **Policy PF-34:** All school site plans shall be designed to minimize traffic speed and maximize traffic flow around the school, allowing for several access points to and from the site.

City of Sacramento General Plan

The following policy from the *Sacramento 2035 General Plan* (City General Plan) (City of Sacramento 2015) Mobility Element relates to transportation.

- ▶ **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: Core Area (Central City Community Plan Area) where LOS F is allowed, Priority Investment Areas where LOS F is allowed and LOS E Roadways which are specific roadways where LOS E is allowed because expansion of the roadways would cause undesirable impacts or conflict with other community values. LOS D is the minimum standard on city streets in the study area.

3.17.3 ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

ANALYSIS METHODOLOGY

Impacts to traffic were determined based on trip generation and a LOS analysis. LOS was calculated for signalized and unsignalized intersections using the 2010 *Highway Capacity Manual* published by the Transportation Research Board. The methodology used to prepare this traffic analysis follows an approach that is recognized by members of the traffic engineering profession, is consistent with CEQA guidelines, and conforms to City of Sacramento Revised Guidelines for the Preparation of Traffic Impact Analysis Study, Sacramento County Traffic Impact Study guidelines, and Caltrans guidelines for Traffic Impact Studies.

Analysis Scenarios

As described previously in this section, the following scenarios were reviewed at a full and equal level of quantitative analysis:

- ▶ Existing No-Project Conditions
- ▶ Existing Plus Project Conditions
- ▶ Cumulative (2035) No-Project Conditions
- ▶ Cumulative (2035) Plus Project Conditions

The analysis of Cumulative (2035) No-Project Conditions and Cumulative (2035) Plus Project Conditions is provided in Section 5.1, “Cumulative Impacts,” in Chapter 5.0, “Other CEQA,” of this EIR.

Roadway Networks

The roadway system associated with the proposed project was added to the existing roadway system for analysis purposes. The proposed project includes construction of roadway improvements shown on Exhibit 2-6 in Chapter 2.0, “Project Description.” The school will have primary access via a connection to Del Paso Road at the Hovnanian Drive intersection. A pedestrian – bicycle connection from the project site to the Westlake residential development at the Westlake Boulevard and/ Snelling Drive intersection would also provide emergency access.

Level of Service

The operation of I-5 mainline segments and ramps assumed a maximum service flow rates of 2,200 vehicles per lane per hour for typical freeway lanes and 1,600 vehicles per lane per hour for auxiliary lanes were used, based upon data collected by the Caltrans in the Sacramento urban area.

I-5 ramp operating conditions are dependent upon traffic volumes and the ramp characteristics. These characteristics include the length and type of acceleration / deceleration lanes; free-flow speed of the ramps; number of lanes; grade; and types of facilities that the ramps interconnect.

Caltrans strives to maintain LOS D on freeways. However, because it is not possible to maintain that standard in the Sacramento area, a project’s impact is only considered significant if it results in LOS F on the mainline or adds appreciable traffic to a location that is projected to operate at LOS F.

Travel Forecasts

Impacts on the roadway system from the proposed project for Existing and Cumulative (2035) conditions were determined by calculating the increase in daily and peak-hour traffic volumes that would occur with implementation of the proposed project and planned future projects, and then assigning the traffic to area roadways. The travel demand forecasting process entailed the following four steps:

- ▶ Trip generation – Trip generation relates land uses to the number of persons or vehicles entering or exiting the site. The trip generation for this analysis was based on the provided land use information using standard trip generation rates from the ITE’s *Trip Generation Manual 9th Edition* (2012). These generation rates were supplemented with consideration of NUSD bussing policy and the modal choices available within the NUSD’s service area to create site specific trips generation rates that reflected the availability of facilities for

pedestrians and bicycles, as well as proximity to existing and planned residences. In addition, the analysis considered trips that could occur during a regular school day (8:00 AM to 3:00 PM) and an extended school day (3:00 to 6:00 PM).

- ▶ Trip distribution –Distribution of trips associated with this analysis was derived using data from the NUSD, as well as the general population distribution in the NUSD’s boundary area. A preliminary attendance area boundary was identified for the Paso Verde School, and it is also assumed that 20 percent of the students could be drawn to the campus from throughout the NUSD. Inbound and outbound distribution patterns are shown in Table 3.13-8.

Direction	Roadway	Percent of Total AM Peak hour Vehicle Trips ²	
		Inbound (percent)	Outbound (percent)
North	Power Line Road	1.0	2.5
	Wyndview Way	2.5	1.25
	Broadgate Drive	3.0	1.5
	El Centro Road	2.0	1.0
	Interstate 5	8.5	12.0
	East Commerce Way	12.5	7.5
East	Del Paso Road east of East Commerce Way	9.0	7.0
South	Power Line Road	0.5	0.25
	Hovnanian Drive	2.5	1.25
	Natomas Central Drive	4.0	7.0
	El Centro Road	30.5	30.0
	Interstate 5	23.0	25.25
	East Commerce Way	1.0	3.50
Total		100	100

¹ Peak hour trips to the school in the morning were assumed to originate at student residences, but it was assumed that some of these trips would be made by parents as part of commute trips with ultimate destinations throughout the Sacramento metropolitan area. This analysis further assumes that half of the trips exiting the site during AM peak hour would return to student residences and the other half would be trips throughout the Sacramento metropolitan area.

² Both inbound and outbound trips generated in the PM peak hour were assumed to be the same as the inbound AM distribution.

Source: KD Anderson and Associates 2017

- ▶ Mode choice –Trips generated by the proposed project can be expected to be split amongst the auto, transit, walk, and bicycle modes of travel. The transit, walk, and bicycle trips for the proposed project are assumed to be much less than the share of vehicle trips.
- ▶ Trip assignment – Given the distributed trips by mode, the travel demand forecasting process predicted the routes that people making these trips would select, resulting in traffic forecasts for specific elements of the roadway system. The trip assignment for the proposed project assumes that all vehicular traffic would use the project site’s access on Del Paso Road.

Table 3.13-9 shows the estimated trip generation forecast for the proposed project based on trip generation, trip distribution, mode choice, and trip assignment.

**Table 3.13-9.
Estimated Trip Generation Forecast**

Description	Mode	Quantity	Auto Occupancy Rate	Auto's	Trip Generation						
					Daily	AM Peak Hour			Afternoon Peak Hour		
						In	Out	Total	In	Out	Total
Staff	Auto	50	1.10	45	180	45	0	45	0	30	30
K-8 students regular day	Auto (75%)	683	1.75	390	1,560	390	390	780	390	390	780
	Bike / Ped (25%)	227	N/A	N/A	--	--	--	--	--	--	--
K-8 students extended day	Auto (75%)	22	1.75	13	52	13	13	26	0	0	0
	Bike / Ped (25%)	8	N/A	N/A	--	--	--	--	--	--	--
TK students	Auto (100%)	60	1.25	48	192	48	48	96	0	0	0
	Bike / Ped (0%)	0	N/A	N/A	--	--	--	--	--	--	--
Volunteers / visitors	Auto	25	1.00	0	50	5	0	5	0	5	5
Total					76	81	56	60	60	15	15
Equivalent trip generation rate per student					2.03	53%	47%	0.95	48%	52%	0.82
Notes: TK = Transitional kindergarten											

THRESHOLDS OF SIGNIFICANCE

Based on Appendix G of the CEQA Guidelines, the proposed project would have a significant impact related to traffic and transportation if it would:

- ▶ conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit;
- ▶ conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways;
- ▶ result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks.
- ▶ substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment);
- ▶ result in inadequate emergency access; or
- ▶ conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance of safety of such facilities.

In addition to the thresholds above, the following thresholds from the Sacramento County Traffic Impact Analysis Guidelines and City of Sacramento Revised Guidelines for the Preparation of Traffic Impact Analysis Study have also been applied, as well as thresholds identified in the traffic analysis for bicycle, pedestrian, and transit facilities. The proposed project would result in a significant impact related to traffic and transportation if it would do any of the following:

- ▶ cause an intersection or roadway found within the jurisdiction of Sacramento County that presently operates at LOS D or better to degrade to LOS E or F, or cause a decrease in LOS for those intersections or roadways that presently operate at LOS E or F;
- ▶ increase the v/c ratio by 0.05 or more at a roadways or signalized intersection within the Sacramento County jurisdiction already operating at LOS E or better;
- ▶ cause an intersection found within the City of Sacramento jurisdiction that presently operates at LOS D or better to degrade to LOS E or F; or
- ▶ increase the average delay by 5 seconds or the v/c ratio by 0.02 or more at an intersection within the City of Sacramento jurisdiction already operating at LOS E or LOS F.

ISSUES NOT DISCUSSED FURTHER

Result in a Change in Air Traffic Patterns, Including Either an Increase in Traffic Levels or a Change in Location that Results in Substantial Safety Risks—Implementation of the proposed project would not result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks. The project site is located approximately 2 miles southwest of the Sacramento International Airport. However, the proposed project would accommodate students within the NUSD boundary would not result in an increase in traffic levels to or from the Sacramento International Airport. Further, the proposed project does not include features that would conflict with Federal Aviation Administration related to objects affecting navigable airspace (see Section 3.8, “Hazards and Hazardous Materials,” and Section 3.10, “Land Use, Planning, Population, and Housing,” for further discussion). Therefore, there would be no impact, and this issue is not discussed further in this EIR.

Potential Increase in Travel Demand and Vehicle Miles Traveled—Based on the average distance from the project site to residences within the school’s anticipated attendance boundary on a daily basis the school would have the effect of contributing 1,525 VMT. It is anticipated that the proposed project would reduce the travel that might otherwise occur if the Paso Verde School was not constructed and students were required to travel to other NUSD schools. The Natomas Middle School, H. Allen Hight Elementary School, Heron K-8 School, and Witter Ranch Elementary School would likely accommodate students from this area. Travel to Natomas Middle School, H. Allen Hight Elementary School, Heron K-8 School, and Witter Ranch Elementary School could result in 2,544 daily VMT and 1,120 daily VMT, respectively. In total, travel to these alternative school sites could result in 3,664 daily VMT, which would be 2,139 more VMT than anticipated as a result of the proposed project.

IMPACT ANALYSIS

IMPACT 3.13-1 Existing Plus Project Intersection Operations. *The addition of project-generated traffic to existing traffic would not cause the LOS to degrade below the applicable thresholds and would not result in the need for installation of traffic signals at study area intersections. This impact would be less than significant.*

The proposed project is projected to generate a total of 2,034 daily trips, 952 of which would occur during the weekday AM peak hour and 815 of which would occur during the weekday PM peak hour (Table 3.13-8). Because bicycle and pedestrian connections would be provided from the Westlake residential development and from Del Paso Road, it is likely that some trips would occur by either pedestrian or bicycle and it is also likely

that some trips will be carpools or shared rides with siblings (see Impact 3.13-9 below for further discussion of bicycle and pedestrian facilities). The District also plans to provide a pedestrian and bicycle connection to Egret Park and adjacent residential areas northeast of the project site. It is assumed approximately 25 percent of K–8 students would bike or walk to school and the remaining 75 percent would travel by car, and 100 percent of transitional kindergarten students would travel by car.

Table 3.13-10 summarizes the LOS results for the study area intersections under Existing Plus Project conditions. The addition of project-generated traffic to existing traffic would not cause the LOS to degrade below the applicable thresholds for the County or City. In addition, no unsignalized intersections warrant a traffic signal. Therefore, this impact would be **less than significant**.

Table 3.13-10. Intersection Levels of Service – Existing Plus Project Conditions										
Intersection		Traffic Control Type	Existing No-Project Conditions				Existing Plus Project Conditions			
			Weekday AM Peak Hour		Weekday PM Peak Hour		Weekday AM Peak Hour		Weekday PM Peak Hour	
			LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)
1	Del Paso Road/Powerline Road (overall) Westbound Approach	Westbound Stop	A A	4 9	A A	4 9	A A	4 9	A A	4 9
2	Del Paso Road/Hovnanian Drive	Signal	A	6	A	6	B	16	B	14
3	Del Paso Road/Wyndview Way (overall) Southbound Approach	Southbound Stop	A B	3 11	A B	2 10	A C	3 16	A C	2 16
4	Del Paso Road/Broadgate Drive/ Natomas Central Drive	Signal	C	21	C	16	C	23	B	20
5	Del Paso Road/El Centro Road	Signal	C	27	C	22	D	36	C	25
6	Del Paso Road/I-5 SB off-ramp	Signal	B	13	B	11	B	13	B	11
7	Del Paso Road /I-5 NB ramps	Signal	B	10	C	27	B	10	C	26
8	Del Paso Road /East Commerce Way	Signal	D	47	D	38	D	47	D	39
9	Hovnanian Drive /Natomas Central Drive	All-Way Stop Control	A	9	A	8	A	10	A	8

Notes: LOS = level of service; I-5 = Interstate 5; sec/veh = seconds per vehicle
Source: KD Anderson and Associates 2017

Mitigation Measures

No mitigation measure is required.

IMPACT 3.13-2 Existing Plus Project Roadway Segment Operations. *The addition of project-generated traffic to existing traffic would not cause the LOS to degrade below the applicable thresholds on any study area roadway. This impact would be less than significant.*

Existing Plus Project roadway segment operations are summarized in Table 3.13-11. As shown, all study area roadway segments would continue to operate at existing, acceptable LOS A and B conditions. Therefore, project-generated traffic would not cause the LOS to degrade below the applicable County and City thresholds on any study area roadway and this impact would be **less than significant**.

Mitigation Measures

No mitigation measure is required.

Table 3.13-11. Roadway Segment Level of Service – Existing Plus Project Conditions					
Segment	Lanes	Existing Conditions		Existing Plus Project Conditions	
		Volume	LOS	Volume	LOS
1 Del Paso Road between Power Line Road and Hovnanian Drive	2	500	A	520	A
2 Del Paso Road between Hovnanian Drive and Natomas Central Drive	4	2,056	A	3,696	A
3 Del Paso Road between Wyndview Way and Natomas Central Drive	4	2,353	A	3,953	A
4 Del Paso Road between Natomas Central Drive and El Centro Road	4	10,649	A	11,749	A
5 Del Paso Road between El Centro Road and I-5	4	18,050	A	11,385	A
6 Del Paso Road between I-5 and East Commerce Way	6	39,321	B	39,591	B
7 Hovnanian Drive between Del Paso Road and Natomas Central Drive	2	733	A	1,083	A

Notes: LOS = level of service; I-5 = Interstate 5
Source: KD Anderson and Associates 2017

IMPACT 3.13-3 Existing Plus Project I-5 Mainline and Ramp Operations. *The addition of project-generated traffic to existing traffic would not cause the LOS to degrade below the applicable thresholds on the I-5 mainline or ramp-mainline junctions in the study area. This impact would be less than significant.*

Existing Plus Project I-5 mainline and ramp operations are summarized in Tables 3.13-12 and 3.13-13, respectively. As shown on Table 3.13-12, the LOS of the I-5 mainline segments in the study area would not change during the AM or PM peak hours. As stated previously, Caltrans has determined it is not possible to maintain a LOS D standard in the Sacramento area, and determined that a project’s impact is only considered significant if it results in LOS F. Therefore, this mainline segment would operate acceptably.

Table 3.13-13 shows that project-generated traffic would not change the LOS on any I-5 ramps in the study area. Thus, project-generated traffic would not cause the LOS to degrade on the I-5 mainline or ramp-mainline junctions below the applicable Caltrans goals. This impact would be **less than significant**.

Mitigation Measures

No mitigation measure is required.

Table 3.13-12. Mainline I-5 Levels of Service – Existing Plus Project Conditions												
Segment	Existing No-Project Conditions						Existing plus Project Conditions					
	Weekday AM Peak Hour			Weekday PM Peak Hour			Weekday AM Peak Hour			Weekday PM Peak Hour		
	Volume (vph)	Density (veh/ mi/lane)	LOS	Volume (vph)	Density (veh/ mi/lane)	LOS	Volume (vph)	Density (veh/ mi/lane)	LOS	Volume (vph)	Density (veh/ mi/lane)	LOS
Southbound												
State Route 99 to Del Paso Road	4,510	18	C	4,011	16	B	4,535	18	C	4,031	16	B
Del Paso Road to Arena Boulevard	5,524	23	C	4,487	18	B	5,626	23	C	4,508	18	B
Northbound												
Arena Boulevard to Del Paso Road	3,653	15	B	5,259	21	C	3,678	15	B	5,279	21	C
Del Paso Road to State Route 99	3,227	17	B	4,376	24	C	3,272	17	B	4,397	0.86	C
Notes: LOS = level of service; I-5 = Interstate 5; sec/veh = seconds per vehicle Source: KD Anderson and Associates 2017												

Table 3.13-13. I-5 Ramps Levels of Service – Existing Plus Project Conditions												
Ramp	Existing No-Project Conditions						Existing Plus Project Conditions					
	Weekday AM Peak Hour			Weekday PM Peak Hour			Weekday AM Peak Hour			Weekday PM Peak Hour		
	Volume (vph)	Density (veh/ mi/lane)	LOS	Volume (vph)	Density (veh/ mi/lane)	LOS	Volume (vph)	Density (veh/ mi/lane)	LOS	Volume (vph)	Density (veh/ mi/lane)	LOS
Southbound												
Del Paso Road off ramp	441	22	C	348	20	C	466	22	C	368	20	C
Westbound Del Paso Road on ramp	973	21	C	602	14	B	973	21	C	602	14	B
Eastbound Del Paso Road on ramp	482	17	B	202	13	B	584	18	B	223	13	B
Northbound												
Del Paso Road off ramp	872	16	B	1,309	24	D	897	18	B	1,329	29	D
Eastbound Del Road on ramp	172	16	B	145	22	C	217	17	B	166	22	C
Westbound Del Paso Road on ramp	274	16	B	281	23	C	274	16	B	281	23	C
Notes: LOS = level of service; I-5 = Interstate 5; vph = volume per hour; veh/mi/lane = vehicle per mile per lane Source: KD Anderson and Associates 2017												

IMPACT 3.13-4 **Potential for Creation of Substantial Traffic-Related Hazards due to a Design Feature.** *Roadway improvements would adhere to design standards set forth in the City of Sacramento Design and Procedures Manual and Sacramento County Improvement Standards. Compliance with the County's and City's design standards would ensure roadway improvements would not increase hazards due to a design feature This impact would be **less than significant**.*

As shown in Exhibit 2-2 in Chapter 2.0, "Project Description," the project site's main access via a connection to Del Paso Road at the Hovnanian Drive intersection. The main access road would connect to on-site parking and student drop-off areas. The traffic signal at the Del Paso Road and Hovnanian Drive intersection would be modified to accommodate the school's fourth leg of the intersection. Del Paso Road would be widened to create a separate westbound right turn lane that extends easterly to the end of the westbound Del Paso Road through lane near Wyndview Way. Del Paso Road would be restriped to create an eastbound left turn.

The project site's exit would include two lanes: a separate southbound left turn lane and a combined right turn through lane and left turn lane. The existing traffic signal Del Paso Road and Hovnanian Drive intersection would be configured to include an "overlap" that allows the right turn lane to proceed at the same time that southbound traffic turns left.

Roadway improvements would adhere to roadway design standards set forth in Section 15, "Street Design Standards," of the *City of Sacramento Design and Procedures Manual* (2009) and Section 4, "Street Design," of the *Sacramento County Improvement Standards* (2018). Improvement plans would be reviewed and approved by the City of Sacramento Public Works Department and Sacramento County Department of Transportation. Compliance with the City's and County's design standards would ensure roadway improvements would not increase hazards due to a design feature (e.g., sharp curves or dangerous intersections due to inadequate sight distance). Therefore, this impact would be **less than significant**.

Mitigation Measures

No mitigation measure is required.

IMPACT 3.13-5 **Interference with Emergency Access.** *Short-term, temporary, construction-related traffic could result in an increase in emergency response times and impede emergency services. Compliance with the California Building Code, City, and County design standards would ensure operation of the proposed project would provide adequate emergency access. Construction-related impacts would be **potentially significant**.*

Construction of the proposed project could require temporary lane, street closures, or detours, which could affect emergency access. In addition, it may be necessary to restrict or redirect pedestrian, bicycle, or vehicular movements around the site to accommodate material hauling, construction, staging, and modifications to existing infrastructure. Lane restrictions, closures, and/or detours could cause an increase in traffic volumes or delays on adjacent roadways. In the event of an emergency, emergency response access or response times could be adversely affected.

Emergency access to the project site would be from Del Paso Road and the project site would also have an auxiliary emergency vehicle access from the adjacent cul-de-sac at the intersection of Westlake Boulevard and

Snelling Drive in the Westlake development. The auxiliary emergency access would be gated and regular vehicle traffic would be prohibited. Emergency access to the project site would meet design standards set forth by the California Fire Code, the *City of Sacramento Design and Procedures Manual* (2009), and the *Sacramento County Improvement Standards* (2018).” These standards address access road length, dimensions, and finished surfaces for firefighting equipment; security gate design requirements; fire hydrant placement; and fire flow availability and requirements. Improvement plans would be reviewed and approved by the City of Sacramento Public Works Department and Sacramento County Department of Transportation.

Compliance with the California Fire Code, City of Sacramento, and Sacramento County design standards would ensure operation of the proposed project would provide adequate emergency access. However, ongoing construction activities could temporarily increase response times and impede emergency services. Construction-related impacts would be **potentially significant**.

Mitigation Measure 3.13-5: Prepare and Implement a Construction Traffic Control Plan.

The NUSD shall prepare and implement a traffic control plan for construction activities that may affect road rights-of-way, in order to facilitate travel of emergency vehicles on affected roadways. The traffic control plan must illustrate the location of the proposed work area; provide a diagram showing the location of areas where the public right-of-way would be closed or obstructed and the placement of traffic control devices necessary to perform the work; show the proposed phases of traffic control; and identify any time periods when traffic control would be in effect and the time periods when work would prohibit access to private property from a public right-of-way. Measures typically used in traffic control plans include advertising of planned lane closures, warning signage, and a flag person to direct traffic flows when needed. During construction, access to the existing surrounding land uses shall be maintained at all times, with detours used, as necessary, during road closures. The plan may be modified by to eliminate or avoid traffic conditions that are hazardous to the safety of the public.

Significance after Mitigation

Implementation of Mitigation Measure 3.13-5 would reduce the potentially significant impacts associated with decreased emergency response times during construction and operation to a **less-than-significant** level by requiring preparation and implementation of a construction traffic control plan that would provide for adequate emergency access during construction activities.

IMPACT 3.13-6 *Decrease in Performance or Safety of Public Transit, Bicycle, or Pedestrian Facilities. Potential increased RT ridership would not necessitate a change to existing RT routes. Bicycle lanes and sidewalks are proposed on the north side of Del Paso Road and a pedestrian/bicycle connection to the project site is planned from the Westlake residential development. These improvements would ensure safe conditions for bicyclists and pedestrians. This impact would be less than significant.*

While the RT’s Natomas Westside shuttle has a stop at the Wyndview Way and Candela Circle intersection; however, this service does not coincide with the school’s start and end times for students. Some school employees could elect to use the shuttle. The new school is projected to have a total of 60 staff, and if the average modal split for Sacramento area employees was achieved, then 5 percent of staff might elect to use transit, or 2 to 3 transit trips. This potential increased ridership would not necessitate a change to existing RT routes. Natomas Jibe.

Bicycle lanes and sidewalks are present east and south of the project site along Del Paso Road, Hovnanian Drive, Broadgate Drive, and throughout the adjacent Westlake residential development. Pedestrian and bicycle access will be provided from an existing traffic circle at the intersection of Westlake Parkway and Snelling Lane (see Exhibit 2-6 in Chapter 2, “Project Description”). In addition, the project includes pedestrian/bicycle improvements along the frontage of Del Paso Road and along the new roadway extending south from the school site. These improvements would ensure safe access to the project site. The District also plans to provide a pedestrian and bicycle connection to Egret Park and adjacent residential areas northeast of the project site. This impact would be **less than significant**.

Mitigation Measures

No mitigation measure is required.

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3.14 UTILITIES AND SERVICE SYSTEMS

This section provides an overview of existing utilities and service systems as relevant to the proposed project, including water supply, wastewater service, and solid waste disposal. Impacts are evaluated in relation to increased demand for utilities and public services associated with the proposed project and actions needed to provide the infrastructure that could potentially lead to physical environmental effects.

Section 3.15 of this Draft EIR, “Energy” addresses energy demand and facilities. Potential environmental impacts associated with water quality and construction of new stormwater drainage facilities are addressed in Section 3.9, “Hydrology and Water Quality.”

3.14.1 EXISTING SETTING

Utilities and service systems would be provided to the school by the City of Sacramento for water, and the Sacramento Area Sewer District (SASD) (formerly known as County Sanitation District-1) and Sacramento Regional County Sanitation District (SRCSD) for wastewater collection and treatment. The following discussion provides an overview of these utility service providers.

WATER SUPPLY

The proposed school site has no public water supply facilities. Agricultural irrigation was previously provided by the Natomas Central Mutual Water Company through diversion of surface water from the West Drainage Canal.

The project site is immediately adjacent to the northwestern boundary of the City of Sacramento’s water service area (West Yost Associates 2016: Figure 3-1). The City will provide water through an agreement with NUSD, along with encroachment permit conditions, maintenance easements, and compliance with relevant City improvement standards. With approval of the City’s Director of Utilities, irrigation water will also be provided by the City (Joyce, pers. comm. 2017).

Water Supply Sources

The City’s water supply is obtained from groundwater from the North American and South American Subbasins and surface water from the American and Sacramento Rivers. The following discussion summarizes the City’s groundwater and surface water supplies.

Groundwater Supply

Groundwater extracted from the North American and South American Subbasins of the Sacramento Valley Groundwater Basin (see Section 3.9, “Hydrology and Water Quality,” for further discussion). The City operates 20 active municipal supply wells and five irrigation wells north of the American River, and operates two active municipal supply wells and nine irrigation wells south of the American River (West Yost Associates 2016:6-4). Thus, the City pumps groundwater from both subbasins, although more than 90 percent of the groundwater pumped by the City is extracted from the North American subbasin (West Yost Associates 2016:6-5).

The City’s safe yield for groundwater pumping is 25,205 afy (West Yost Associates 2016:6-19). This total is based on the City’s firm capacity, which is 90 percent of the total well capacities (West Yost Associates 2016:6-

19). Table 3.14-1 shows historic groundwater pumping from 2011 to 2015. As shown in Table 3.14-1, groundwater pumping did not exceed 25,205 afy in any year over the 5-year period.

Subbasin	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
Total	17,811	14,363	12,568	14,393	13,479
Notes: afy = acre-feet per year					
Source: West Yost Associates 2016:6-5					

Surface Water Supply

Surface water is currently diverted at two locations: from the American River downstream of the Howe Avenue Bridge and from the Sacramento River downstream of the confluence of the American and Sacramento Rivers. The City’s current authorized place of use (POU) for water diverted under the Sacramento River permit includes all the land within the City limits, which may change over time with annexations. The POU for water diverted under the American River permits includes the City limits and areas adjacent to the City that include portions of service areas of several other water purveyors (West Yost Associates 2016:6-5).

The City has multiple surface water entitlements, consisting of five appropriative water right permits issued by the State Water Resources Control Board and pre-1914 rights. In 1957, the City entered into a water rights settlement agreement with the U.S. Bureau of Reclamation to limit its diversion of Sacramento River water to a 81,800 acre-feet per year (afy) and to limit its diversion of American River water to 245,000 afy in the year 2030. In return, the U.S. Bureau of Reclamation agreed to operate its facilities to ensure the City a reliable supply of surface water under the City’s permits. This agreement results in a highly reliable surface water supply to the City (West Yost Associates 2016:7-2) Table 3.14-2 shows the maximum annual surface water diversions.

Source	2015	2020	2025	2030	2035	2040
Sacramento River	81,800	81,800	81,800	81,800	81,800	81,800
American River	189,000	208,500	228,000	245,000	245,000	245,000
Total	252,000	278,000	304,000	326,800	326,800	326,800
Notes: afy = acre-feet per year						
Sources: West Yost Associates 2016:6-8						

City of Sacramento Water Supply and Demand

The City’s Urban Water Management Plan (UWMP) addresses water supply and demand issues, water supply reliability, water conservation, water shortage contingencies, and recycled-water usage for the areas within served by the City. In accordance with Senate Bill (SB) x7-7, the City UWMP estimates water demands are based on an estimated gallons per-capita, per-day target chosen by the City. Water supplies and demands within the City’s service area would be the same during normal, single-dry, and multiple-dry years. Table 3.14-3 identifies surface water and groundwater supply and demand within the City’s service area from 2020 to 2040 in normal, single dry,

and multiple dry years. As shown in Table 3.14-3, the City would have water supplies that exceed demands in all water years.

Table 3.14-3. Comparison of Water Supply and Demand in the City of Sacramento (2020–2040)						
Water Year	Source	Projected Demands (afy)				
		2020	2025	2030	2035	2040
Normal Year	Supply					
	Groundwater	21,749	20,169	19,912	19,912	19,912
	Surface water (Sacramento River)	81,800	81,800	81,800	81,800	81,800
	Surface water (American River)	171,368	185,319	191,707	191,707	191,707
	Recycled water	1,000	1,000	1,000	1,000	1,000
	Total Supply	275,917	288,288	294,419	294,419	294,419
	Total Demand	123,229	130,548	139,882	149,213	162,029
Difference (Supply minus Demand)	152,688	157,740	154,537	145,206	132,390	
Single-Dry Year	Supply					
	Groundwater	21,749	20,169	19,912	19,912	19,912
	Surface water (Sacramento River)	81,800	81,800	81,800	81,800	81,800
	Surface water (American River)	171,368	185,319	191,707	191,707	191,707
	Recycled water	1,000	1,000	1,000	1,000	1,000
	Total Supply	275,917	288,288	294,419	294,419	294,419
	Total Demand	123,229	130,548	139,882	149,213	162,029
Difference (Supply minus Demand)	152,688	157,740	154,537	145,206	132,390	
Multiple-Dry Year 1	Supply					
	Groundwater	21,749	20,169	19,912	19,912	19,912
	Surface water (Sacramento River)	81,800	81,800	81,800	81,800	81,800
	Surface water (American River)	171,368	185,319	191,707	191,707	191,707
	Recycled water	1,000	1,000	1,000	1,000	1,000
	Total Supply	275,917	288,288	294,419	294,419	294,419
	Total Demand	123,229	130,548	139,882	149,213	162,029
Difference (Supply minus Demand)	152,688	157,740	154,537	145,206	132,390	
Multiple-Dry Year 2	Supply					
	Groundwater	21,749	20,169	19,912	19,912	19,912
	Surface water (Sacramento River)	81,800	81,800	81,800	81,800	81,800
	Surface water (American River)	171,368	185,319	191,707	191,707	191,707
	Recycled water	1,000	1,000	1,000	1,000	1,000
	Total Supply	275,917	288,288	294,419	294,419	294,419
	Total Demand	123,229	130,548	139,882	149,213	162,029
Difference (Supply minus Demand)	152,688	157,740	154,537	145,206	132,390	
Multiple-Dry Year 3	Supply					
	Groundwater	21,749	20,169	19,912	19,912	19,912
	Surface water (Sacramento River)	81,800	81,800	81,800	81,800	81,800
	Surface water (American River)	171,368	185,319	191,707	191,707	191,707
	Recycled water	1,000	1,000	1,000	1,000	1,000
	Total Supply	275,917	288,288	294,419	294,419	294,419
	Total Demand	123,229	130,548	139,882	149,213	162,029
Difference (Supply minus Demand)	152,688	157,740	154,537	145,206	132,390	

Notes: afy = acre-feet per year
Source: West Yost Associates 2016; Data compiled by AECOM 2018

The City's groundwater and surface water supplies are highly reliable. The City has a firm groundwater supply of 25,205 afy (West Yost Associates 2016:6-19). As shown on Table 3.14-2, groundwater demand would be less than 25,205 afy in all water years. Under the settlement agreement with the U.S. Bureau of Reclamation, the City agreed to limit its rate and amount of diversion from the Sacramento and American Rivers under its water rights permits in exchange for the U.S. Bureau of Reclamation's agreement to operate its facilities to assure the City a reliable supply of surface water under the City's permits (West Yost Associates 2016:7-2).

WATER CONVEYANCE AND TREATMENT FACILITIES

The City's water distribution system is a pipeline network in which surface water and groundwater are mixed. The City Department of Utilities operates and maintains the City's two water treatment plants. Water diverted from the Sacramento River is treated at the Sacramento River Water Treatment Plant (SRWTP), located along the Sacramento River just downstream of its confluence with the American River. Renovations at the SRWTP were completed in 2016 and the current capacity of the SRWTP is 160 mgd.

Water diverted from the American River is treated at the E. A. Fairbairn Water Treatment Plant (FWTP), located along the American River approximately 7 miles upstream of the confluence of the Sacramento and American Rivers. The design capacity of the FWTP is 200 mgd, but the current permitted capacity at the FWTP is 160 mgd (West Yost Associates 2016:3-4).

The City maintains high-lift service pumps at the SRWTP and FWTP, 12 storage reservoirs located throughout the city, five clearwells at the SRWTP and FWTP, and a transmission and distribution system that includes more than 1,600 miles of system mains ranging in size from 2 to 72 inches in diameter (West Yost Associates 2016:3-5).

There are several major points of connection to major City infrastructure near the project site boundaries. The City's nearest water transmission mains are located along Del Paso Road, along Clarewood Way, and at the intersection of Westlake Parkway and Snelling Lane. These water transmission mains range in size from 8 to 12 inches.

WASTEWATER COLLECTION, AND CONVEYANCE, TREATMENT FACILITIES

The project site is not served by any municipal wastewater collection and treatment systems. The project site is within the service boundaries of the SASD and SRCSD, and both SASD and SRCSD have stated they will serve the property and connect it to the existing sewer system (Singh, pers. comm., 2016).

Sacramento Area Sewer District

SASD provides local wastewater collection and conveyance services and infrastructure throughout the Sacramento region. SASD maintains and provides wastewater collection and conveyance from the local residences and businesses in the urbanized, unincorporated areas of Sacramento County; the cities of Elk Grove, Rancho Cordova, and Citrus Heights; portions of the city of Sacramento; and a very small area in the city of Folsom. The service area covers approximately 270 square miles and has a population of over 750,000. The smaller local pipelines that SASD operates connect to the larger regional interceptors maintained by SRCSD.

The project site is located in the Natomas Trunk Shed (SASD 2011). The Natomas Trunk Shed is located north of San Juan Road, south of West Elkhorn Boulevard, and east and west of El Centro Road. SASD's sewer system

capacity plan update indicates all planned trunks within the Natomas Trunk Shed have been constructed (SASD 2011). SASD's 12-inch sewer line in Del Paso Road was designed to provide service to the property and would be connected to the school via the main access road.

Sacramento Regional County Sanitation District

SRCSO is responsible for collection by interceptors (sanitary sewers that are designed to carry flows in excess of 10 million gallons per day [mgd]) and for wastewater treatment in Sacramento County. This district owns, operates, and is responsible for the collection, trunk, and interceptor sewer systems throughout Sacramento County, as well as the Sacramento Regional Wastewater Treatment Plant (SRWTP) located west of Elk Grove.

SRCSO has completed an Interceptor Sequencing Study that will aid in planning and implementing regional conveyance projects and assisting contributing agencies in coordination of collection system facilities. The project site is within the SRCSO service area and the on-site and off-site wastewater facilities to serve the project site have been constructed (SRCSO 2013).

Sacramento Regional Wastewater Treatment Plant

Wastewater flows collected from SRCSO interceptors are ultimately transported into the Sacramento Regional Wastewater Treatment Plant (SRWTP). The SRWTP is located west of Elk Grove and is owned and managed by SRCSO. Currently, the SRWTP has a National Pollutant Discharge Elimination System (NPDES) permit issued by the Central Valley Regional Water Quality Control Board (RWQCB) for discharge of up to 181 mgd average dry-weather flow of treated effluent into the Sacramento River. The SRWTP has the potential for expansion to 218 mgd. As of 2016, the SRWTP receives and treats an average of 127 mgd each day and the SRWTP discharge constituents are below permitted discharge limits specified in the NPDES permit (SRCSO 2016). Currently, the SRWTP's discharge constituents are below permitted discharge limits specified in the Central Valley RWQCB's NPDES permit (SRCSO 2016).

In 2005, the SRCSO sought an expansion to increase the design capacity of the SRWTP to 218 mgd. In June 2010 the SRCSO removed its formal request to the Central Valley RWQCB for an increase in permitted wastewater discharge capacity. Water conservation and a reduction in water-using industries reversed the growth in wastewater capacity use, despite the substantial growth in its service area. The SRCSO expects per capita consumption to fall 25 percent over the next 20 or more years through the ongoing installation and use of water meters, as well as compliance with conservation mandates such as the state Water Conservation Act of 2009 (Senate Bill [SB] x7- 7). As such, substantial additional conservation is expected throughout the service area, allowing the existing 181 mgd average dry-weather flow capacity to be adequate for at least 20 more years (SRCSO 2014:6-2).

SOLID WASTE

Solid waste collection service would be provided by the Sacramento County Department of Waste Management and Recycling. Refuse would be transported and disposed of at the Kiefer Landfill.

Sacramento County owns and operates the Kiefer Landfill, and the landfill is the primary solid waste disposal facility in the county. The Kiefer Landfill is classified as a Class III municipal solid waste landfill facility and is permitted to accept general residential, commercial, and industrial refuse for disposal, including municipal solid waste, construction and demolition debris, green materials, agricultural debris, and other nonhazardous designated

debris. According to the California Department of Resources Recycling and Recovery (CalRecycle), the Kiefer Landfill has a maximum permitted throughput of 10,815 tons per day (tpd), a total maximum permitted capacity of 117.4 million cubic yards, a remaining capacity of approximately 112.9 million cubic yards, and an anticipated closure date of January 1, 2064 (CalRecycle 2018).

3.14.2 REGULATORY CONTEXT

FEDERAL PLANS, POLICIES, REGULATIONS, AND LAWS

No federal plans, policies, regulation, or laws pertaining to utilities and service systems are applicable to the proposed project.

STATE PLANS, POLICIES, REGULATIONS, AND LAWS

California Integrated Waste Management Act

The California Integrated Waste Management Act (CIWMA) of 1989 is the result of two pieces of legislation, Assembly Bill (AB) 939 and SB 1322. The CIWMA was intended to minimize the amount of solid waste that must be disposed of by transformation and land disposal by requiring all cities and counties to divert 25 percent of all solid waste from landfill facilities by January 1, 1995, and 50 percent by January 1, 2000.

The CIWMA created the California Integrated Waste Management Board (now known as CalRecycle). CalRecycle is the agency designated to oversee, manage, and track California's 92 million tons of waste generated each year. CalRecycle provides grants and loans to help cities, counties, businesses, and organizations meet the state's waste reduction, reuse, and recycling goals. In addition to many programs and incentives, CalRecycle promotes the use of new technologies for the practice of diverting resources away from landfills. CalRecycle is responsible for ensuring that waste management programs are primarily carried out through local enforcement agencies (LEAs).

The State Water Resources Control Board and the Central Valley RWQCB also regulate waste disposal (the latter regulated solid waste prior to CalRecycle). In Sacramento County, the County is responsible for municipal solid waste management planning and compliance efforts required by CalRecycle.

California Green Building Standards Code

The standards included in the 2016 California Green Building Standards Code (CALGreen Code) (Title 24, Part 11 of the California Code of Regulations) became effective on January 1, 2017. The CALGreen Code was developed to enhance the design and construction of buildings, and the use of sustainable construction practices, through planning and design, energy efficiency, water efficiency and conservation, material conservation and resource efficiency, and environmental air quality (California Building Standards Commission 2016).

Chapter 6 of the 2016 CALGreen Code describes measures to reduce indoor demand for potable water by 20 percent and to reduce landscape water usage by 50 percent. It also requires separate water meters for nonresidential buildings' indoor and outdoor water use, with a requirement for moisture-sensing irrigation systems for larger landscape projects.

Chapter 7, Section 708, of the 2016 CALGreen Code requires all construction contractors to reduce construction waste and demolition debris by 65 percent. Code requirements include preparing a construction waste management plan that identifies the materials to be diverted from disposal by efficient usage, recycling, reuse on the project, or salvage for future use or sale; determining whether materials will be sorted on-site or mixed; and identifying diversion facilities where the materials collected will be taken. The code also specifies that the amount of materials diverted should be calculated by weight or volume, but not by both. In addition, the 2016 CALGreen Code requires that 100 percent of trees, stumps, rocks, and associated vegetation and soils resulting primarily from land clearing be reused or recycled.

REGIONAL AND LOCAL PLANS, POLICIES, REGULATIONS, AND ORDINANCES

Sacramento County General Plan

The following Sacramento County General Plan of 2005–2030 (General Plan) policies from the Conservation Element are related to utilities and service systems:

- ▶ **Policy CO-16.** Ensure developments are consistent with the County Water Efficient Landscape Ordinance, which shall be updated as needed to conform to state law.
- ▶ **Policy CO-34.** Development applications shall be subject to compliance with applicable sections of the California Water Code and Government Code to determine the availability of an adequate and reliable water supply through the Water Supply Assessment and Written Verification processes.
- ▶ **Policy CO-35.** New development that will generate additional water demand shall not be approved and building permits shall not be issued if sufficient water supply is not available, as demonstrated by Water Supply Assessment and Written Verification processes.

Sacramento County Water Use and Conservation Ordinance

The County's Water Use and Conservation ordinance (Chapter 4.10 of the Sacramento County Municipal Code) requires submittal of a landscape plan that identifies landscape materials, trees, shrubs, groundcover, and turf; an irrigation plan that show irrigation system design criteria; a soils reports that identifies soil infiltration, soil texture, soil fertility, and amendments required to correct for soil problems; estimated water use; and an irrigation schedule. Landscape plans must be approved by the Sacramento County Department of Public Works before approval of improvement plans and issuance of building permits.

Sacramento County Construction and Demolition Ordinance

The County requires contractors to comply with the Construction and Demolition Ordinance (Title 6, Chapter 6.20 of the Sacramento County Code) by reducing project waste entering landfill facilities by 65 percent by weight through recycling (Sacramento County's Department of Waste Management and Recycling 2018). This ordinance applies to all new commercial, office, industrial, multi-family residential, and public/quasi-public building permits over \$250,000 in value. The County requires contractors to prepare a waste management plan that identifies the sources of recyclable materials, outlines a recycling method (i.e., self-separation or mixed recovery), and identifies a self-haul or franchise waste hauler. Furthermore, the contractor must prepare a waste management log documenting 65 percent diversion. The waste management plan must be submitted to and approved by Sacramento County's Department of Waste Management and Recycling before the County's

Community Development Department may issue a building permit and waste management logs must be submitted to the Sacramento County's Department of Waste Management and Recycling before final inspections.

Assembly Bill 341

In an effort to reduce greenhouse gas emissions from disposing of recyclables in landfills, Assembly Bill (AB) 341 requires local jurisdictions to implement commercial solid waste recycling programs. Businesses and public entities, including schools and school districts, that generate four cubic yards or more of solid waste per week or multifamily dwellings of five units or more must arrange for recycling services.

In order to comply with AB 341, jurisdictions' commercial recycling programs must include education, outreach and monitoring of commercial waste generators and report on the process to CalRecycle. For businesses and public entities to comply with AB 341, they must arrange for recyclables collection through self-haul, subscribing to franchised haulers for collection, or subscribing to a recycling service that may include mixed waste processing that yields diversion results comparable source separation.

Assembly Bill 1826

AB 1826 requires businesses and public entities, including schools and school districts, that generate 4 cubic yards or more of waste per week are required to recycle organic wastes.¹ Schools and districts are required to implement one or any combination of the following steps to recycle their organics:

- ▶ separate organics from other waste on-site and subscribe to service through a waste hauler that includes the collection and recycling of organic waste;
- ▶ subscribe to an organics recycling service that may include mixed-waste processing; and
- ▶ recycle organics on site, self-haul organics off-site for recycling, and/or donate organic material.

3.14.3 ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

ANALYSIS METHODOLOGY

Impacts related to utilities and service systems that would result from the proposed project were identified by comparing existing service capacity against future demand associated with implementation of the proposed project. Environmental impacts related to constructing the infrastructure to serve the future development are analyzed throughout the various environmental topic specific sections of this EIR. The placement of these utilities has been considered in the other sections of this EIR, such as Section 3.3 of this EIR, "Air Quality," Section 3.4, "Biological Resources," Section 3.5, "Cultural Resources," and other sections, which specifically analyze the potential for future development. Impacts related to stormwater management are addressed in Section 3.10, "Hydrology and Water Quality."

Evaluation of potential utility and service system impacts was based on a review of the following documents pertaining to the proposed project and surrounding area:

¹ Organic waste refers to food waste, green waste, landscaping and pruning waste, nonhazardous wood waste, and food-soiled paper that is mixed with food waste.

- ▶ *Sacramento County General Plan of 2005-2030* (Sacramento County 2011),
- ▶ *2015 City of Sacramento Urban Water Management Plan* (West Yost Associates 2016),
- ▶ *Sewer System Capacity Plan 2010 Update* (SASD 2011), and
- ▶ *Sacramento Regional County Sanitation District Interceptor Sequencing Study* (SRCSD 2013).

Additional background information on current services, staffing, and equipment was obtained through consultation with appropriate agencies.

THRESHOLDS OF SIGNIFICANCE

Based on Appendix G of the CEQA Guidelines, the proposed project would have a significant impact on utilities and service systems if implementation of the proposed project would:

- ▶ exceed wastewater treatment requirements of the applicable RWQCB;
- ▶ 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;
- ▶ result in a determination by the wastewater treatment provider that 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;
- ▶ have insufficient water supplies available to serve the project from existing or permitted entitlements and resources, or require new or expanded entitlements;
- ▶ generate solid waste beyond the capacity of existing landfills; or
- ▶ violate federal, State, or local statutes or regulations related to solid waste.

IMPACT ANALYSIS

IMPACT 3.14-1 *Increased Demand for Water Supplies. Implementation of the proposed project would result in an increased demand for water supplies. The City will provide water for the school facilities through an agreement with NUSD. The City's UWMP demonstrates that the City's water supplies would exceed demands in all water years through 2040. This surplus water supply would be sufficient to meet the water supply demands of the proposed project. This impact would be less than significant.*

Development of the proposed project would increase the demand for municipal water supplies. The estimated water supply demand for the school facilities would be 180.2 afy and water supply demand for landscape irrigation would be 42.3 afy.² The City will provide water for the school facilities through an agreement with

² Based on the City's Water Supply Assessment worksheet, the City's water demand estimate for public uses (including school uses) is 0.17 afy per employee (City of Sacramento 2013). The school would accommodate up to approximately 1,000 students and approximately 60 staff members; therefore water demand for the proposed school uses would be 180.2 afy (1,060 employees/students x 0.17 afy). The City estimates water demand for landscape irrigation as approximately 6.6 afy per acre. The landscaped portion of the

NUSD. With approval of the City’s Director of Utilities, irrigation water will also be provided by the City (Joyce, pers. comm. 2017).

The proposed project would be required to implement measures described in Chapter 6 of the 2016 CALGreen Code (Title 24, Part 11 of the California Code of Regulations) to reduce indoor demand for potable water by 20 percent and to reduce landscape water usage by 50 percent.

The City’s groundwater and surface water supplies are highly reliable. As shown on Table 3.14-3, groundwater demand would be less than the City’s safe yield (25,205 afy) in all water years. Under the settlement agreement, the City agreed to limit its rate and amount of diversion under its water rights permits in exchange for the U.S. Bureau of Reclamation’s agreement to operate its facilities to assure the City a reliable supply of surface water under the City’s permits (West Yost Associates 2016:7-2).

Table 3.14-3 identifies groundwater and surface water supplies and demand within the City over the UWMP’s planning period in normal, single-dry, and multiple-dry years. The project site is not within the City of Sacramento’s service area, and water supply demands for the proposed project were not accounted for in water demand projections contained in the City’s UWMP. As shown in the Table 3.14-3, the City would have water supplies that exceed the demands of existing and future development in all water years through 2040. Therefore, this surplus water supply would be sufficient to meet the water supply demands of the proposed project (222.5 afy) in all water years. This impact would be **less than significant**.

Mitigation Measures

No mitigation measure is required.

IMPACT 3.14-2 **Increased Demand for Water Supply Conveyance Facilities.** *Implementation of the proposed project would require construction of on-site water supply conveyance facilities. Physical impacts associated with construction and operations of utilities are evaluated throughout this EIR. There are no additional significant impacts beyond those comprehensively considered throughout the other sections of this EIR. The impact would be less than significant.*

Implementation of the proposed project would require construction of on-site water supply conveyance facilities. Potable and fire protection water supply are available to the school by connecting to existing infrastructure in Westlake Parkway along the eastern border of the project site (see Exhibit 2-5 in Chapter 2, “Project Description”). Off-site water conveyance facilities have the capacity to provide water supplies to the project site and no new off-site water conveyance infrastructure would be required (Joyce, pers. comm., 2017). The City will provide water through an agreement with NUSD, along with encroachment permit conditions, maintenance easements, and compliance with relevant City improvement standards (Joyce, pers. comm. 2017).

Existing City regulations require submittal, review, and compliance with City standards for water conveyance. The NUSD would be required to submit a water conveyance infrastructure improvement plan that depicts the locations and appropriate sizes of all required conveyance infrastructure, in conjunction with other site-specific improvement plans. Proposed on-site water facilities would be required to be designed and sized to provide

project site would be approximately 6.4 acres; therefore the water demand for landscape irrigation would be 42.3 afy (6.4 acres x 6.6 afy per acre).

adequate service to the project site for the amount and type of proposed development, based on the City's Standards and Specifications for Public Construction (June 2007), and the Standards and Specifications for Public Construction Addendum No. 2 (April 2012), or the most current versions of this plan. A final water conveyance infrastructure improvement plan must be approved by the Department of Utilities. In addition, the project is required to pay applicable water connection fees as determined by the Department of Utilities.

Physical impacts associated with construction and operation of utilities is evaluated throughout this EIR. The placement of these utilities has been considered in the other sections of this EIR, such as Air Quality, Biological Resources, and other sections, which specifically analyze the potential for project construction and implementation. There are no additional significant impacts beyond those comprehensively considered throughout the other sections of this EIR. The impact would be **less than significant**.

Mitigation Measures

No mitigation measure is required.

IMPACT 3.14-3 *Increased Demand for Wastewater Collection and Conveyance Facilities. Implementation of the proposed project would require construction of on-site wastewater collection and conveyance facilities. On-site wastewater collection and conveyance facilities would be designed and sized to provide adequate service to the project site per SASD's Standards and Specifications. Physical impacts associated with construction and operations of utilities are evaluated throughout this EIR. There are no additional significant impacts beyond those comprehensively considered throughout the other sections of this EIR. Therefore, impacts associated with increased demand for wastewater collection and conveyance facilities would be less than significant.*

No existing wastewater collection and conveyance facilities are located within the project site. The proposed project would require construction of on-site wastewater collection and conveyance facilities. SASD's off-site 12-inch sewer line in Del Paso Road was designed to provide service to the property and would be connected to the school via the main access road.

The NUSD would be required to prepare and submit a detailed wastewater infrastructure improvement plan that depicts the locations and appropriate sizes of all required conveyance infrastructure. Proposed on-site wastewater facilities must be designed and sized to provide adequate service to the project site for the amount of wastewater generated by the school facilities based on SASD's Standards and Specifications.

In addition, SASD requires design of the wastewater infrastructure improvement plans meet the design requirements described in the SASD Standards and Specifications. Wastewater infrastructure to serve properties within the SASD cannot be constructed until the wastewater infrastructure improvement plans have been approved by SASD. The project is required to pay applicable SASD wastewater connection fees before building permits are issued.

As stated above, SASD's existing sewer line in Del Paso Road was sized to accommodate wastewater flows generated by the proposed project. Both SASD and SRCSD have stated they will serve the property and connect it to the existing sewer system (Singh, pers. comm. 2016). Therefore, SASD and SRCSD wastewater collection and conveyance facilities would be available to serve the project site.

Physical impacts associated with construction and operation of utilities is evaluated throughout this EIR. The placement of these utilities has been considered in the other sections of this EIR, such as Air Quality, Biological Resources, and other sections, which specifically analyze the potential for project construction and implementation. There are no additional significant impacts beyond those comprehensively considered throughout the other sections of this EIR. This impact would be **less than significant**.

Mitigation Measures

No mitigation measures are required.

IMPACT 3.14-4 **Increased Demand for the Sacramento Regional Wastewater Treatment Plant Facilities.** *The SRWTP would have adequate capacity to treat wastewater flows generated by the proposed project as well as future development within the SRCSD service area. Therefore, this impact would be less than significant.*

SASD assumes that an elementary school would generate the same wastewater treatment demand as six equivalent single-family dwellings (ESDs) per gross acre (SASD 2013). Based on this estimate, the 18.3-acre project footprint would generate 0.03 mgd average dry-weather flow that would be conveyed to the SRWTP. The SRWTP has a design capacity of 181 mgd with the potential to expand to 218 mgd. As of 2016, the SRWTP receives and treats an average of 127 mgd each day. The SRCSD expects that substantial water conservation measures throughout the service area would allow the existing 181 mgd average dry-weather flow capacity to be adequate for at least 20 more years (SRCSD 2014:6-2). The SRWTP would have adequate capacity to treat wastewater flows generated by the proposed project as well as future development within the SRCSD service area. Furthermore, SASD and SRCSD have stated they will serve the property and connect it to the existing sewer system (Singh, pers. comm. 2016). This impact would be **less than significant**.

Mitigation Measures

No mitigation measure is required.

IMPACT 3.14-5 **Increased Generation of Solid Waste and Compliance with Solid Waste Regulations.** *Implementation of the proposed project would result in the increase generation of solid waste. The Kiefer Landfill has sufficient permitted capacity to accommodate solid-waste disposal needs. Therefore, impacts associated with increased generation of solid waste that exceeds the capacity of existing landfills and compliance with solid waste regulations would be less than significant.*

Construction of the proposed project would generate various construction-related wastes, including scrap lumber, scrap finishing materials, various scrap metals, and other recyclable and non-recyclable construction-related wastes. The 2016 CALGreen Code (Title 24, Part 11 of the California Code of Regulations) requires all construction contractors to reduce construction waste and demolition debris by 65 percent. Code requirements include preparing a construction waste management plan that identifies the materials to be diverted from disposal by efficient usage, recycling, reuse on the project, or salvage for future use or sale; determining whether materials will be sorted on-site or mixed; and identifying diversion facilities where the materials collected will be taken. The code also specifies that the amount of materials diverted should be calculated by weight or volume, but not by both (California Building Standards Commission 2016). In addition, the 2016 CALGreen Code requires that

100 percent of trees, stumps, rocks, and associated vegetation and soils resulting primarily from land clearing be reused or recycled. Any non-recyclable material would be disposed of at the Kiefer Landfill.

Development of the proposed project would result in increased long-term generation of solid waste. The County provides recycling programs, such as recycling of paper, plastics, and bottles, to reduce the volume of solid waste transported to landfills. In addition, the proposed project would comply with AB 1826, which requires recycling of organic waste.

The community school would accommodate up to approximately 1,000 students and 60 staff members. It is estimated that the proposed project would generate 0.2 tpd of solid waste.³ These totals do not account for recycling programs required by AB 1826 or other County recycling programs. Therefore, the actual amount of solid waste generated by the proposed project would be less than this estimate.

Solid waste collected from the proposed project site would be hauled to the Kiefer Landfill. The Kiefer Landfill has a maximum permitted throughput of 10,815 tpd, a remaining capacity of approximately 112.9 million cubic yards, and an expected closure date of 2064 (CalRecycle 2018). The estimated 0.2 tpd of solid waste generated by the proposed project would be less than one percent of the maximum tpd that could be received at the landfill. Therefore, sufficient landfill capacity would be available to accommodate solid-waste disposal needs for the proposed project.

The proposed project would comply with all applicable statutes and regulations related to solid waste. Compliance with the CalGreen Code, AB 1826, and other applicable requirements would ensure that sufficient landfill capacity would be available to accommodate solid-waste disposal needs for future development. This impact is considered **less than significant**.

Mitigation Measures

No mitigation measure is required.

³ Based on CalRecycle's 2014 waste characterization study, the education sector generated 0.5 tons of solid waste per employee per year and 3.67 tons of solid waste per 100 students per year. (CalRecycle 2015).

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3.15 ENERGY

Section 3.15 of this EIR considers the primary energy use needs for the proposed project; the benefit of existing regulations that require energy-efficient construction and operation; and the potential for the proposed project to result in the wasteful, inefficient, and unnecessary consumption of energy. Section 3.14 of this EIR addresses electricity- and natural gas-related infrastructure needed to serve the proposed project.

3.15.1 ENVIRONMENTAL SETTING

ELECTRICAL SERVICE

The Sacramento Metropolitan Utility District (SMUD) generates, transmits, and distributes electrical service to approximately 628,952 customers through its approximately 900-square mile service area, which covers the majority of Sacramento County, including the City of Sacramento, and a very small southwest portion of Placer County (SMUD 2018). SMUD’s service area currently serves a population of approximately 1.5 million (SMUD 2018).

SMUD has electrical infrastructure near the project site. SMUD owns and operates a 69-kV transmission line along the north side of Del Paso Road, approximately 1,500 feet south of the southern boundary of the project site (Wallace-Kuhl & Associates 2005). In addition, two electrical transformers mounted on concrete pads are located east of the project site, near the entrance to the Sterling Cove section of the Westlake residential development (Wallace-Kuhl & Associates 2005). In 2016, SMUD delivered approximately 10,486 gigawatt-hours (GWh) of electricity to its customers (CEC 2018a).

**Table 3.15-1.
SMUD Electrical Power Mix, 2016**

Electrical Sources ¹	Percent
Eligible Renewable	25
<i>Biomass & biowaste</i>	2
<i>Geothermal</i>	4
<i>Eligible hydroelectric</i>	2
<i>Solar</i>	8
<i>Wind</i>	9
Coal	4
Large Hydroelectric	10
Natural Gas	37
Nuclear	9
Other Unspecified ²	15
Total	100

Notes:

¹ Percentages are estimated annually by the California Energy Commission based on the electricity sold to California consumers during the identified year.

² “Other unspecified” sources refer to electricity that is not traceable to specific generation sources by any auditable contract.

Source: SMUD 2017b

SMUD provides power from a variety of sources, including hydropower, natural-gas-fired generators, renewable energy, and purchases. SMUD’s power generating facilities include five local gas-fired power plants (1,012 megawatt [MW]), solar photovoltaic installations (3 MW), the Solano Wind Project (102 MW), the Upper American River Project (673 MW), which includes three storage reservoirs and eight powerhouses with eleven

turbines, and several power purchase agreements (SMUD 2018). SMUD's Upper American River Project provides enough power in a normal water year to serve about 180,000 homes. Through a program called Greenergy, SMUD offers customers the opportunity to pay an additional fee to have up to 100 percent of their electricity needs met with power sourced from renewable resources, such as biomass, hydropower, solar, and wind. In 2016, the Greenergy renewable resources portfolio included 23 percent biomass, 1 percent low impact hydroelectric, 41 percent solar, and 35 percent wind (SMUD 2017a).

NATURAL GAS SERVICE

Natural gas service is provided to Sacramento County and surrounding areas by Pacific Gas and Electric Company (PG&E) through portions of PG&E's approximately 42,800 miles of natural gas distribution pipelines. In 2016, PG&E generated approximately 33,525 GWh net electricity and purchased an additional 41,691 GWh of electricity. Total natural gas throughput for PG&E in 2016 was approximately 822,655 million cubic feet (PG&E 2017). Natural gas consumption within the PG&E service area was approximately 4,560 million therms in 2016 (CEC 2018b), approximately 6.27 percent (286 million therms) of which was provided to users in Sacramento County (CEC 2018c).

ENERGY USE FOR TRANSPORTATION

Transportation is the largest energy consuming sector in California, accounting for approximately 39 percent of all energy use in the state (U.S. Energy Information Administration 2016). More motor vehicles are registered in California than in any other state, and commute times in California are among the longest in the country (EIA 2017a). Since transportation accounts for more energy consumption than other end-use sectors, the travel demand reducing features of the project site and design are important for consideration in an assessment of energy efficiency.

Transportation fuel has, and will continue to diversify in California and elsewhere. While historically gasoline and diesel fuel accounted for nearly all demand, there are now numerous options, including ethanol, natural gas, electricity, and hydrogen. Currently, despite advancements in alternative fuels and clean vehicle technologies, gasoline and diesel remain the primary fuels used for transportation in California, consuming 15.1 billion gallons of gasoline and 4.2 billion gallons of diesel in 2015 (CEC 2017a, b).

The Sacramento Area Council of Governments (SACOG) prepared a regional analysis of vehicle miles traveled (VMT) and found average daily VMT for Sacramento County to be approximately 32,937,000. This travel demand is forecast to increase to 37,092,000 in 2020 and to 43,669,000 in 2036 under the MTP/SCS (SACOG 2016). Within the Sacramento Area Council of Governments (SACOG) Region (inclusive of Sacramento County), the population growth rate has been greater than the rate of increase of total VMT, resulting in a reduction in VMT per capita from the year 2000 through 2012. Per-capita VMT forecasts project a continuation of this declining per-capita VMT trend for the region through the year 2036 (SACOG 2016). As described within the SACOG 2016 Metropolitan Transportation Plan/Sustainable Communities Strategy, several policies and factors are identified as supporting this declining trend in per-capita VMT. Two factors specifically include the trend toward more compact development such that more residents are able to find jobs, schools, shopping, and other activities closer to their place of residence, as well as proposed improvements in transit and walkability that promote a shift away from reliance upon private vehicles for mode of transportation.

ENERGY USE IN SCHOOLS

School buildings (including elementary, middle, and high schools, as well as colleges) are the third biggest energy user of all commercial building types, accounting for 10 percent of total energy consumed by commercial buildings (EIA 2017b). Activity intensity and climate are typically correlated with energy consumption. Common uses of energy associated with this sector include space heating, water heating, lighting, space cooling, running office equipment, cooking, ventilation, and running a wide variety of other equipment. According to a 2011 U.S. Environmental Protection Agency (EPA) guide to energy efficiency in kindergarten through grade 12 (K-12) schools, space heating, lighting, and water heating are the top three energy consuming activities in K-12 schools (EPA 2011). In addition, energy-related costs are the second greatest expenditure for operating costs of K-12 schools, second to personnel costs; an estimated 25 percent of those costs could be saved through energy efficiency measures.

3.15.2 REGULATORY CONTEXT

FEDERAL PLANS, POLICIES, REGULATIONS, AND LAWS

Environmental Protection Agency and National Highway Traffic Safety Administration

The U.S. Environmental Protection Agency (EPA) and National Highway Traffic Safety Administration (NHTSA) are implementing national greenhouse gas (GHG) emission and fuel economy standards for light-duty cars and trucks in model years 2012 to 2016. The second phase of the standards includes GHG and fuel economy standards for model years 2017 to 2025. The 2017 to 2025 standards are anticipated to save approximately 4 billion barrels of oil and 2 billion metric tons of GHG emissions. In 2025, if all standards are met through fuel efficiency improvements, the average industry fleetwide fuel efficiency for light-duty cars and trucks would be approximately 54.5 miles per gallon (EPA 2012).

In addition to standards for light-duty cars and trucks, EPA and NHTSA are also currently implementing Phase 1 of the Medium- and Heavy-Duty Vehicle GHG Emissions and Fuel Efficiency Standards, which apply to model years 2014 to 2018. It is anticipated that medium- and heavy-duty vehicles built to these standards from 2014 to 2018 will reduce carbon dioxide (CO₂) emissions by approximately 270 million metric tons (EPA 2011). Phase 2 of these standards will apply to model years 2021 to 2027, and is anticipated to reduce GHG emissions by 1 billion metric tons (EPA 2015). In addition to the GHG reduction and fuel efficiency, the standards are anticipated to generate development and research jobs focused on advanced cost-effective technology for cleaner and more efficient commercial vehicles.

Renewable Fuel Standard Program

Created by the Energy Policy Act of 2005, which amended the CAA, the 2005 Renewable Fuel Standard Program (RFS) established requirements for volumes of renewable fuel used to replace petroleum-based fuels. The four renewable fuels accepted as part of RFS are biomass-based diesel, cellulosic biofuel, advanced biofuel, and total renewable fuel. The 2007 Energy Independence and Security Act expanded the program and its requirements to include long-term goals of using 36 billion gallons of renewable fuels and extending annual renewable fuel volume requirements to year 2022. The four renewable fuels have specific renewable fuel-blending requirements for obligated parties, such as refiners and importers of gasoline or diesel fuel. EPA implements the program in

consultation with U.S. Departments of Agriculture and Energy. Gasoline and diesel refiners and importers (Obligated Parties) are required to demonstrate compliance with the Renewable Fuel Standard program.

STATE PLANS, POLICIES, REGULATIONS, AND LAWS

Senate Bills 1078 (Chapter 516, Statutes of 2002) and 107 (Chapter 464, Statutes of 2006), Executive Orders S-14-08 and S-21-09, and Senate Bill 350

SB 1078 (Chapter 516, Statutes of 2002) required retail sellers of electricity, including investor-owned utilities and community choice aggregators, to provide at least 20 percent of their supply from renewable sources by 2017. SB 107 (Chapter 464, Statutes of 2006) changed the target date to 2010.

Executive Order S-14-08 expanded the State's Renewable Portfolio Standard to 33 percent renewable power by 2020. Executive Order S-21-09 directs ARB under its AB 32 authority to enact regulations to help the State meet its Renewable Portfolio Standard goal of 33 percent renewable energy by 2020.

The 33 percent-by-2020 goal was codified in April 2011 with SB X1-2. This new Renewable Portfolio Standard applies to all electricity retailers in the State, including publicly owned utilities, investor-owned utilities, electricity service providers, and community choice aggregators. Consequently, SMUD, which would be the electricity provider for the proposed project, must meet the 33 percent goal by 2020. SB 350 (2015) increased the renewable requirement to 50 percent by 2030.

These requirements reduce the carbon content of electricity generation, and would reduce GHG emissions associated with existing development, as well as new development, including new school projects.

In January 2016, the California Public Utilities Commission (CPUC) reported that California's three largest investor-owned utilities (IOUs) (i.e., Pacific Gas and Electric Company, Southern California Edison, and San Diego Gas and Electric Company) collectively provided 26.6 percent of their 2014 retail electricity sales using renewable sources and are continuing progress toward future 2020 requirements (CPUC 2016).

California Building Energy Efficiency Standards

The proposed project would be required to comply with Title 24 of the California Code of Regulations related to energy efficiency. Title 24 provides energy efficiency standards for both residential and nonresidential buildings. The Building Standards were most recently revised in 2016, and the standards went into effect January 1, 2017.

California Green Building Code

The Green Building Code (Part 11, Title 24) was developed to enhance the design and construction of buildings and sustainable construction practices through planning and design, energy efficiency, water efficiency and conservation, material conservation and resource efficiency, and environmental air quality. The current (2016) California Green Building Code requires mandatory inspections of energy systems (e.g., heat furnace, air conditioner, and mechanical equipment) for non-residential buildings over 10,000 square feet to ensure that all are working at their maximum capacity and according to their design efficiencies. In addition, the Green Building Code includes Nonresidential Voluntary Measures that address building energy efficiency, water efficiency and conservation, and material/resource efficiency. Energy efficiency measures for the Nonresidential Voluntary

Measures are related to lighting systems, water heating in restaurants, renewable energy, and operation of elevators, escalators, and equipment.

CEQA and CEQA Guidelines

Public Resources Code Section 21100(b)(3) requires EIRs to include a detailed statement setting forth mitigation measures proposed to minimize significant effects on the environment, including, but not limited to, measures to reduce the wasteful, inefficient, and unnecessary consumption of energy. CEQA Guidelines Section 15126.4(a)(1) suggests that an EIR describe feasible mitigation that could minimize significant adverse impacts, including, where relevant, inefficient and unnecessary consumption of energy, when relevant. CEQA Guidelines, Appendix F, requires the potentially significant energy implications of the project to be considered in an EIR to the extent feasible, and provides a list of energy impact possibilities and potential conservation mitigation measures.

REGIONAL AND LOCAL PLANS, POLICIES, REGULATIONS, AND ORDINANCES

Sacramento County General Plan

The Sacramento County General Plan's Energy Element includes the following goals related to energy.

- ▶ Reverse the historical trend of increasing per capita consumption of energy, and
- ▶ Shift toward using a greater share of renewable sources of energy, and
- ▶ Shift seasonal and daily peak energy demands to increase the load factor of electrical generating facilities, while,
- ▶ Maintaining or enhancing the general standard of living, the level of employment, and the quality of the environment.

The County's General Plan also includes policies related to energy, including the following:

- ▶ **EN-1.** Develop standards which would reduce the energy required to maintain interior spaces in the comfort zone, including such standards as tree planting and proper orientation of dwellings.
- ▶ **EN-16.** Promote the use of passive and active solar systems in new and existing residential, commercial, and institutional buildings as well as the installation of solar swimming pool heaters and solar water and space heating systems.

In addition to the Energy Element, other elements of the General Plan include policies and implementation measures that could result in energy conservation for the region. These include the following:

- ▶ **Land Use Implementation Measure J:** Update the Energy Element and/or the Public Facilities Element of the General Plan to include policies related to alternative energy production within the County, which may include a General Plan Land Use Diagram overlay designation reflecting prime or allowable areas for alternative energy production (such as solar or wind farms).

- ▶ **Policy AQ-1.** New development shall be designed to promote pedestrian/bicycle access and circulation to encourage community residents to use alternative modes of transportation to conserve air quality and minimize direct and indirect emission of air contaminants.
- ▶ **Policy CI-5.** Land use and transportation planning and development should be cohesive, mutually supportive, and complement the objective of reducing per capita vehicle miles travelled (VMT).

3.15.3 ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

ANALYSIS METHODOLOGY

The evaluation of potential energy impacts used the California Emissions Estimator Model (CalEEMod), Version 2016.3.1, as well as documents and regulations pertaining to the proposed project. Future energy demand was calculated based on proposed land uses and modeling conducted by AECOM for the greenhouse gas (GHG) emissions estimates using the CalEEMod, Version 2016.3.1. (See Section 3.7, “Greenhouse Gas Emissions,” for further discussion of CalEEMod).

The project would also require transportation energy for student and staff trips, deliveries, and other purposes. Future transportation energy demand estimates depend on a variety of factors including fuel prices, vehicle technologies and prices, regulatory requirements, consumer demand and preferences, and other factors. This section uses VMT information developed to support the transportation section of this EIR. In absence of the proposed school, students anticipated to attend the school would otherwise attend another regular NUSD school. The delta of these VMT estimate was calculated to demonstrate the change in VMT resulting from the proposed project, and therefore the difference in transportation energy demand.

THRESHOLDS OF SIGNIFICANCE

Appendix F of the *CEQA Guidelines* provides guidance for assessing impacts related to energy supplies, focusing on the goal of conserving energy by ensuring that projects use energy wisely and efficiently. Because Appendix F does not include specific significance criteria, the following thresholds are based on the goal of Appendix F. Energy impacts are considered significant if the proposed project would:

- ▶ Develop land uses and patterns that cause wasteful, inefficient, and unnecessary consumption of energy.

Section 3.14 of this EIR addresses electricity- and natural gas-related infrastructure needed to serve the proposed project.

IMPACT ANALYSIS

IMPACT 3.15-1 *Consumption of energy. Implementation of the proposed project would result in energy consumption for the duration of the proposed project’s construction phases in the form of electricity, natural gas, and fossil fuels (e.g., gasoline, diesel fuel). Implementation of the proposed project would also require energy for operational phases. The proposed project would not reduce per-capita energy consumption or generate substantial renewable energy that would reduce reliance on fossil fuels, but it would not result in an unnecessary or wasteful use of energy. This impact would be less than significant.*

Construction-Related Energy Consumption

Implementation of the proposed project would increase the consumption of energy for the duration of construction in the form of electricity, natural gas, and fossil fuels (e.g., gasoline, diesel fuel). The primary energy demands during construction would be associated with construction equipment and vehicle fueling. The project requires no demolition and is anticipated to require only eight cubic yards of import materials, not requiring substantial import or export of materials during grading. Energy in the form of fuel and electricity would be consumed during this period by construction vehicles and equipment operating on-site, trucks delivering equipment and supplies to the site, and construction workers driving to and from the site.

Table 3.15.2 presents the total fuel consumption anticipated for the proposed construction activities, shown both for the overall construction period and amortized over an assumed 25-year period of building operation. Over the anticipated 16-month construction period, the proposed project would require a total of approximately 68,252 gallons of diesel and 34,614 gallons of gasoline. When amortized over an assumed period of building operation lasting 25 years, fuel consumption would equal approximately 2,730 gallons of diesel and 1,385 gallons of

**Table 3.15-2.
Modeled Construction Fuel Consumption, Total and Amortized over 25 Years**

Phase	Source	MT CO ₂ e/ Year ^a	Fuel Type	Factor (MT CO ₂ /Gallon) ^b	Gallons/Year
Site Prep	Off-Road Equipment	11.60	Diesel	0.01016	1,141
	Hauling	0.00	Diesel	0.01016	–
	Vendors	0.00	Diesel	0.01016	–
	Workers	0.27	Gasoline	0.008887	30
Grading	Off-Road Equipment	84.21	Diesel	0.01016	8,289
	Hauling	0.00	Diesel	0.01016	–
	Vendors	0.00	Diesel	0.01016	–
	Workers	2.05	Gasoline	0.008887	231
Building Construction	Off-Road Equipment	154.27	Diesel	0.01016	15,184
	Hauling	0.00	Diesel	0.01016	–
	Vendors	420.61	Diesel	0.01016	41,399
	Workers	299.95	Gasoline	0.008887	33,751
Paving	Off-Road Equipment	20.19	Diesel	0.01016	1,987
	Hauling	0.00	Diesel	0.01016	–
	Vendors	0.00	Diesel	0.01016	–
	Workers	0.98	Gasoline	0.008887	110
Architectural Coating	Off-Road Equipment	2.56	Diesel	0.01016	252
	Hauling	0.00	Diesel	0.01016	–
	Vendors	0.00	Diesel	0.01016	–
	Workers	4.36	Gasoline	0.008887	491
			Total Gallons	Diesel	68,252
				Gasoline	34,614
			Amortized Demands (over 25 years)	Diesel	2,730
				Gasoline	1,385

Notes:

CO₂ = carbon dioxide; CO₂e = carbon dioxide equivalent; MT = metric tons

Assumed amortization period is 25 years, based upon timeline used in analysis of US Green Building Council's *Green Building Costs and Financial Benefits (US Green Building Council 2002)*.

Sources:

^a Modeled by AECOM in 2018

^b Sacramento Metropolitan Air Quality Management District 2016, U.S. Energy Information Administration 2016

gasoline per year. The calculations in Table 3.15-2 are based on the CalEEMod emissions calculations for proposed construction activities and application of the United States Energy Information Administration CO₂ emissions coefficients (EIA 2016) to estimate fuel consumption for each phase of construction activities.

While the Paso Verde School is not pursuing environmental certification (i.e. LEED, CHPS), it will be designed to the high sustainability standard set by those programs. Building orientation to maximize natural daylighting in the learning environments was a key driver in the site development of the campus. Because of its size, the project will require commissioning of HVAC systems. This effort ensures that systems are operating at maximum efficiency. The project will be net zero ready to facilitate future installation of solar facilities.

The proposed project does not include unusual characteristics that would necessitate the use of construction equipment that would be less energy-efficient than at comparable construction sites. Therefore, it is expected that construction fuel consumption associated with the proposed project would not be any more inefficient, wasteful, or unnecessary than at other construction sites in the region.

Building Operational Energy Consumption

The proposed buildings would be constructed to meet all applicable energy efficiency standards at the time of construction and would be required to comply with the current energy performance standards found Title 24 of the California Code of Regulations, including the Green Building Code (Part 11 of Title 24) Building Energy Efficiency Standards.

The proposed school would include approximately 82,000 square feet of buildings including classrooms, science labs, administrative offices, a gymnasium, a multi-purpose room, and a cafeteria, in addition to outdoor space that would include hardcourts, playing fields and a parking lot. Using CalEEMod, electrical and natural gas demands were modeled to estimate energy use based on the proposed land use (Table 3.15-3). The electrical demands created by the proposed facilities would be approximately 674,952 kWh per year. If NUSD decides to use natural gas on-site, implementation of the proposed project would result in natural gas consumption of approximately 13,826 therms per year.

Table 3.15-3. Estimated Annual Electrical and Natural Gas Demands		
	Demands	
	Electrical (kWh/year)	Natural Gas (therms)
Proposed Project	674,952	13,826
Sacramento County	10,850,000,000	286,881,614
Notes: kBtu = thousand British thermal units; kWh = kilowatt-hours		
Source: Modeled by AECOM in 2018; CEC 2018c, d		

The District is proactive in implementing energy efficiency and energy conservation programs as a part of its operations. The NUSD published its *Conservation and Building Management Guidelines* in March 2016 (revised April 2016), which identifies energy conservation guidelines to serve as a standard for facilities and strategic planning. To reduce gas and electric demand, the guidelines include operational measures, such as use of natural lighting, limiting use of interior and exterior lights to only necessary locations and levels, using cross-ventilation as an alternative to air conditioning when possible, use of Energy Star microwaves, discouraging the use of space

heaters and individual coffee pots, and several other operational measures (NUSD 2016). Many of these actions may be small independently, but cumulatively can result in measureable energy reductions for a campus.

Energy efficiency requirements for new construction have increased over time; therefore, the proposed buildings would generally be more energy efficient than existing similar school buildings in the area. In addition, older buildings tend to decrease in energy efficiency as infrastructure begins to degrade with time. Therefore, the space heating and cooling, lighting, and other operational-related energy uses for the proposed project's buildings would likely be more efficient than existing school buildings in the region.

Transportation-Related Energy Consumption

The proposed project would be constructed on an undeveloped site immediately west of the existing Westlake residential development. Recently, development has resumed in the Natomas Basin and within NUSD's service boundary. As a result, NUSD's enrollment has increased, area schools are overcrowded, and NUSD has a pressing need for a new school to serve the area west of Interstate 5 (I-5)/State Route (SR) 99.

Operations of the proposed school would generate daily trips for students, teachers, and other staff to and from the school. Transportation fuel consumption during operations of the proposed school was estimated based on the VMT analysis developed to support the transportation section of this EIR, and use of the EMFAC2014 vehicle fleet mix and fuel consumption data for Sacramento County. Table 3.15-4 shows the estimated diesel and gasoline fuel consumption during proposed project operations, anticipated to begin in 2020.

Table 3.15-4. Estimated Annual Fuel Consumption for Proposed Project Operations			
	Daily VMT	Gas Type	Fuel Consumption (Gallons/Year)
Proposed Project	1,525	Diesel	351
		Gasoline	11,409
Without Proposed Project	3,664	Diesel	843
		Gasoline	27,412
Delta	(2,544)	Diesel	(492)
		Gasoline	(16,003)
Notes: VMT = vehicle miles traveled Sources: EMFAC2014 (v1.0.7) web database Modeled by AECOM in 2018			

Operations of the proposed project would receive students that would otherwise attend another nearby NUSD school; the anticipated distance for attendees to drive to the proposed school is less than that if they were to attend the alternate existing schools in the area. Trip generation rates and distances are based upon on the average distance from the project site to residences within the school's anticipated attendance boundary. The transportation analysis also considers NUSD bussing policy and the mode choices available within the school's service area, including pedestrian and bicycle access routes. Based on this analysis, the proposed school is estimated to contribute 1,525 daily VMT. The Natomas Middle School, H. Allen Hight Elementary School, Heron K-8 School, and Witter Ranch Elementary School would likely accommodate students from this area if the project were not constructed. Travel to Natomas Middle School, H. Allen Hight Elementary School, Heron K-8 School, and Witter Ranch Elementary School could result in 2,544 daily VMT and 1,120 daily VMT, respectively. In total, travel to these alternative school sites could result in 3,664 daily VMT, which would be 2,139 more VMT

than anticipated as a result of the proposed project. Please refer to Section 3.13 of the EIR, “Traffic and Transportation,” for additional details. The proposed school is anticipated to *reduce* potential transportation-related energy consumption that would otherwise occur if the project were not constructed.

Energy-Related Education

NUSD is proactive in implementing energy efficiency and energy conservation programs as a part of its operations and educational programs at existing campuses. For example, seven of the eight elementary campuses in the District participate in food waste diversion programs from their cafeterias and provide their diverted organic waste to the local bio digester run by Clean World (NUSD 2017a). In addition, the proposed school is envisioned to have a program with a focus on science, technology and engineering, and as a part of this focus, students will tackle a variety of issues and challenges including how to expand green energy created from renewable and sustainable resources such as sunlight, wind or geothermal heat (NUSD 2017a). As identified in the EPA Guide to Developing and Implementing Greenhouse Gas Reduction Program, investing in energy efficiency not only can have economic benefits, but also demonstrates responsible stewardship of public resources and provides an opportunity to introduce children to important energy and environmental issues (EPA 2011).

Summary

Energy would be consumed through all phases of project construction and operations. Energy-requiring activities range from equipment operation, to building operations and lighting of the parking lot, to transportation during all phases of the proposed project. Table 3.15-5 summarizes total energy requirements for the proposed project. For comparison purposes, Table 3.15-5 shows conversion of all energy requirements to a common energy unit of British thermal units (Btu).

Phase	Energy Requirement ^a	Unit	Annual Energy Consumption (MMBtu) ^b
Construction (<i>amortized over 25 years</i>)			
Diesel	2,730	gallons/year	377
Gasoline	1,385	gallons/year	173
		<i>Subtotal</i>	550
Site Operations			
Electrical	674,952	KWh/year	2,304
Natural Gas	1,382,560	kBtu/year	1,383
		<i>Subtotal</i>	3,686
Operational Transportation (<i>accounting for net regional reduction in VMT</i>)			
Diesel	(492)	gallons/year	(68)
Gasoline	(16,003)	gallons/year	(2,000)
		<i>Subtotal</i>	(2,068)
		<i>Total</i>	2,128
Notes: kBtu/year = thousand British thermal units per year; KWh/year = kilowatt-hours per year; MMBtu = million British thermal units Totals do not add due to rounding. Sources: ^a Modeled by AECOM in 2018 ^b U.S. Energy Information Administration 2016			

Building operations would be the greatest energy consuming factor associated with the proposed project. Compliance with existing regulations would ensure that the proposed facilities would be more energy efficient than existing, average, similar-use buildings energy efficiency requirements have become more stringent over time. As detailed within the “Transportation-Related Energy Consumption” discussion above, the proposed project would require about 350 gallons of diesel and 11,400 gallons of gasoline annually. This would result in energy consumption of approximately 1,475 MMBtu annually. However, because of the net regional reduction in VMT associated with trips to the regional schools, the proposed project results in a net *reduction* of potential transportation-related energy consumption compared to what would otherwise occur if the project were not constructed. Considering this information, the proposed project would not be expected to cause inefficient, wasteful, or unnecessary consumption of energy.

In addition, building orientation will be designed to maximize natural daylighting in the learning environments. Because of its size, the project will require commissioning of HVAC systems. This effort ensures that systems are operating at maximum efficiency. The project will be net zero ready to facilitate future installation of solar facilities. These features would further reduce energy consumption throughout the project construction and operational phases. These building energy, energy generation, and transportation energy features of the project would help to decrease the reliance on fossil fuels. Therefore, with consideration of the above-detailed proposed project construction, facility operations, and operational transportation energy consumption, the impact is considered **less than significant**. No mitigation is required.

Energy efficiency is a possible indicator of environmental impacts. The actual adverse physical environmental effects associated with energy use and the efficiency of energy use are detailed throughout this EIR in the environmental topic-specific sections. For example, the use of energy for transportation leads to air pollutant emissions, the impacts of which are addressed in Section 3.3 of this EIR. There is no physical environmental effect associated with energy use that is not addressed in the environmental topic-specific sections of this EIR.

Mitigation Measures

No mitigation measure is required.

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4 ALTERNATIVES

CEQA requires that an EIR describe the relative environmental effects of alternatives to the proposed project and evaluate their comparative impacts. The Natomas Unified School District (NUSD) has considered a range of alternatives that can feasibly attain most of the basic project objectives and avoid or substantially lessen one or more significant effects.

The alternatives analysis must identify the potential alternatives, and include sufficient information about each to allow meaningful evaluation, analysis, and comparison with the proposed project. The discussion must focus on potentially feasible alternatives that can avoid or substantially reduce the significant effects of the proposed project. The environmentally superior alternative must be identified among the alternatives considered.

Qualitative and quantitative measures of alternative feasibility may include site suitability, economic viability, availability of infrastructure, general plan consistency, consistency or conflict with other plans or regulatory limitations, jurisdictional boundaries, and whether the project applicant can reasonably acquire, control, or otherwise have access to an alternative site. Similarly, if an alternative would cause one or more significant effects, in addition to those that would be caused by the proposed project, the significant effects of the alternative must be discussed, but in less detail than the project analysis.

As required by CEQA, an alternatives analysis must evaluate the “no project” alternative. “No project” is defined as what would occur within the project site if the project were not to be approved. The “no project” alternative may consider what could reasonably occur on the project site if existing development trends continue, to the degree that adopted or proposed general plans and zoning, and existing infrastructure, services, or other relevant conditions allow.

4.1 SELECTION OF ALTERNATIVES

Alternatives were selected for evaluation in this EIR based on criteria in CEQA Guidelines Section 15126.6. These criteria include

- ▶ Ability of the alternative to attain most of the basic project objectives;
- ▶ Feasibility of the alternative; and
- ▶ Ability of the alternative to avoid or substantially reduce one or more significant environmental effects of the proposed project.

NUSD also received input as a part of the Notice of Preparation, included in this EIR as Appendix A, regarding the following environmental issues of interest, some of which are addressed, as appropriate, by the alternatives provided in this section:

- ▶ air quality impacts, including criteria air pollutants and precursors;
- ▶ biological resources, including consistency with the Natomas Basin Habitat Conservation Plan (NBHCP);
- ▶ airport hazards and safety zones;
- ▶ noise from school uses perceived within the Westlake development;
- ▶ consistency with the Sacramento International Airport Land Use Compatibility Plan;

- ▶ hydrology and water quality impacts on Reclamation District (RD) 1000's West Drainage Canal;
- ▶ availability of public services and utilities;
- ▶ pedestrian and bicycle trail connections between the project site and Egret Park; and
- ▶ increased traffic.

In addition, the Sacramento County Office of Planning and Environmental Review requested the EIR consider an alternative that relocates the school further from Sacramento International Airport's safety and noise zones, as well as an alternative that provides for better neighborhood connectivity and access for alternative modes of transportation. Potential alternatives that address these topics are presented in Section 4.2.1, "Off-Site Alternative Locations," below.

4.1.1 ABILITY OF THE ALTERNATIVE TO ATTAIN MOST PROJECT OBJECTIVES

Potential alternatives were identified and evaluated relative to the objectives of the proposed project. For the purpose of alternatives analysis under CEQA, project objectives may not be defined so narrowly that the range of alternatives is unduly constrained.

PROJECT OBJECTIVES

The primary objectives for the proposed Paso Verde School project are as follows:

- ▶ Meet the educational needs of up to approximately 1,000 NUSD students in grades K–8.
- ▶ Meet NUSD's geographical needs for additional schools within its service boundary and west of I-5.
- ▶ Slow enrollment growth at nearby overcrowded elementary and middle schools.
- ▶ Provide safe and efficient school site access for students and NUSD staff.

4.1.2 FEASIBILITY OF THE ALTERNATIVES

Each alternative was evaluated according to the "rule of reason" and general feasibility criteria suggested by the CEQA Guidelines Section 15126.6 as follows:

The range of alternatives required in an EIR is governed by a 'rule of reason' that requires the EIR to set forth only those alternatives necessary to permit a reasoned choice. The alternatives shall be limited to ones that would avoid or substantially lessen any of the significant effects of the project. Of those alternatives, the EIR need examine in detail only the ones that the lead agency determines could feasibly attain most of the basic objectives of the project. The range of feasible alternatives shall be selected and discussed in a manner to foster meaningful public participation and informed decision making.

The inclusion of an alternative in an EIR does not necessarily mean the alternative is feasible. Rather, the inclusion of an alternative in an EIR indicates that lead agency staff has determined that the alternative is potentially feasible.

4.1.3 AVOIDANCE OR SUBSTANTIAL REDUCTION OF SIGNIFICANT EFFECTS

The evaluation of alternatives must also take into account the potential of the alternative to avoid or substantially lessen any of the significant effects of the proposed project, as identified in this EIR. The potential environmental effects of the proposed project are summarized in the "Executive Summary" of this EIR.

4.2 ALTERNATIVES CONSIDERED BUT REJECTED FROM DETAILED ANALYSIS IN THE EIR

4.2.1 OFF-SITE ALTERNATIVE

Oftentimes, an off-site alternative is evaluated to consider the possibility of avoiding significant location-related impacts and provide a greater range of possible alternatives to consider in the decision making process. The key question is whether an off-site alternative is available that would feasibly attain most of the basic objectives of the proposed project and avoid or substantially lessen any of the environmental effects of the proposed project (CEQA Guidelines Section 15126.6[a]).

CDE School Facilities Planning Division has prepared the *Guide to School Site Analysis and Development* (CDE 2000), which provides criteria for locating appropriate school sites in California. This document suggests a ratio of 1:2 between buildings area and development grounds area. In addition, the siting criteria identify the following factors to determine the acreage required for the facilities needed on a school site and to permit the development of a workable and desirable layout:

- ▶ outdoor physical education facilities;
- ▶ buildings, walkways, and landscaping; and
- ▶ parking and access roads.

The NUSD considered the California Department of Education (CDE) criteria outlined in California Code of Regulations Title 5 Section 14010, “Standards for School Site Selection,” in choosing a school site. This criteria guides the location and design of schools to avoid certain adverse health and safety effects, including effects related to:

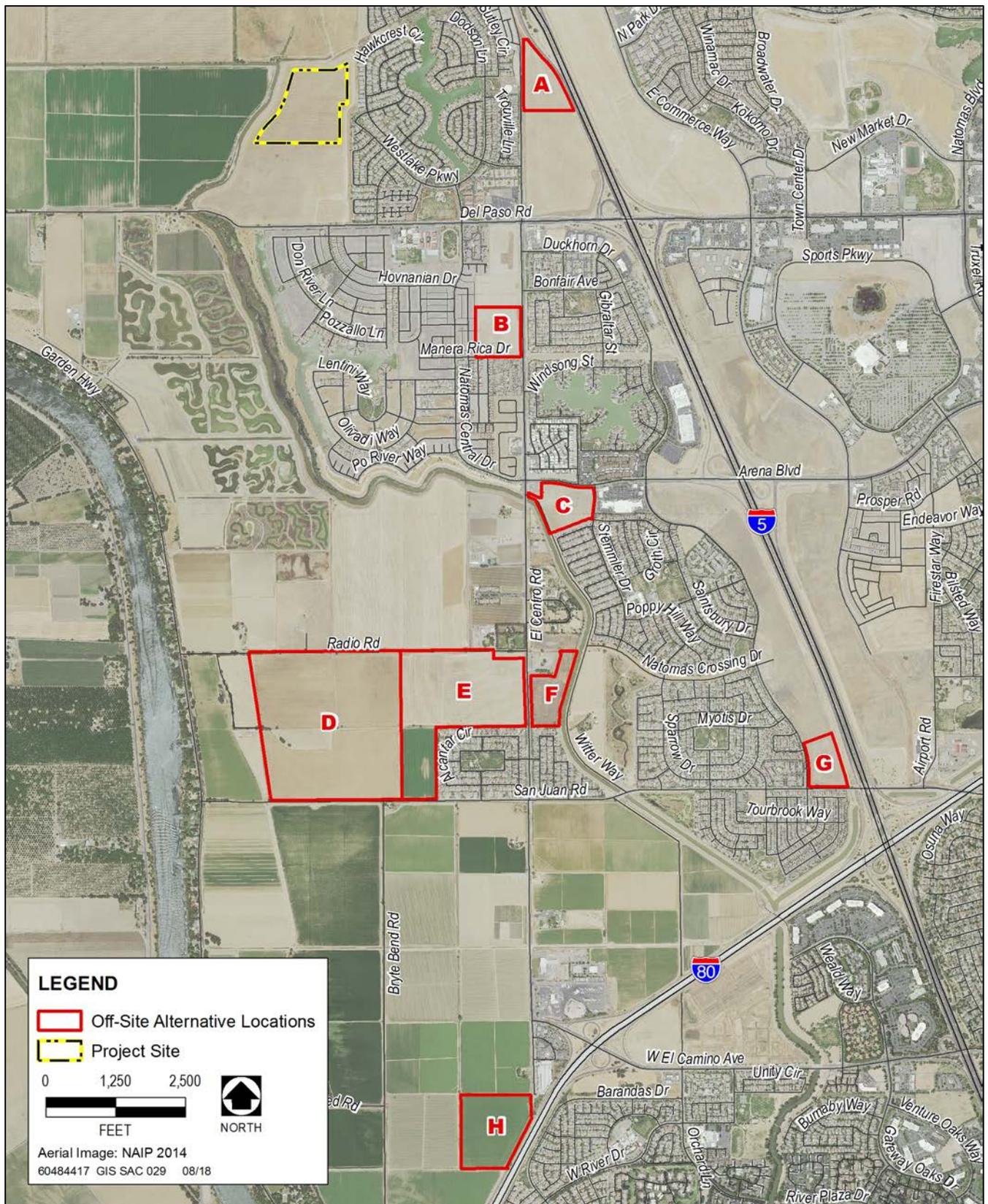
- ▶ proximity to airports, high-voltage power transmission lines, railroads, and major roadways;
- ▶ presence of toxic and hazardous substances;
- ▶ hazardous facilities and hazardous air emissions within one-quarter mile;
- ▶ proximity to high-pressure natural-gas lines, propane storage facilities, gasoline lines, pressurized sewer lines, or high-pressure water pipelines;
- ▶ proximity to a flood zone or dam inundation area;
- ▶ noise;
- ▶ results of geological studies or soil analyses;
- ▶ accessibility from existing roadways;
- ▶ traffic and school bus safety; and
- ▶ safety issues related to joint-use facilities.

As shown on Exhibit 4-1, NUSD considered eight properties within NUSD boundaries and west of Interstate 5 (I-5) for potential development of a combined elementary and middle school. The following discussion identifies the location of each alternative site.

- ▶ **Site A:** Site A is located north of Del Paso Road, east of El Camino Road, and west of I-5. Site A is located within the Sacramento city limits.
- ▶ **Site B:** Site B is located north of Manera Rica Drive, south of Del Paso Road, east of Natomas Central Drive, and west of Del Paso Road. This site is approximately 0.4 mile southeast of the Westlake Charter School and Natomas Pacific Pathways Prep Middle School. Site B is located within the Sacramento city limits.
- ▶ **Site C:** Site C is located north of Jarvis Circle, south of Arena Boulevard, east of El Centro Road, and west of Stemmler Drive. This site is approximately 0.6 mile northwest of Whitter Elementary School. Site C is located within the Sacramento city limits.
- ▶ **Site D:** Site D is located north of San Juan Road and south of Radio Road, and east and west of unnamed access roads. The western border of Site D abuts the eastern border of Site E. Site D is located within unincorporated Sacramento County.
- ▶ **Site E:** Site E is located north of San Juan Road, south of Radio Road, and west of residential development. The eastern border of Site E abuts the western border of Site D. Site E is located within unincorporated Sacramento County.
- ▶ **Site F:** Site F is located north residential development, south of Radio Road, east of El Centro Road, and west of West Wilter Way. This site is approximately 0.5 mile southwest of Whitter Elementary School. Site F is located within unincorporated Sacramento County.
- ▶ **Site G:** Site G is located north of San Juan Road, east of Duckhorn Drive, and west of State Route 99. Site G is located within the Sacramento city limits.
- ▶ **Site H:** Site H is located east of Interstate 80 and is located north, south, and west of unnamed access roads. Site H is located within unincorporated Sacramento County.

These eight alternative sites would meet the project’s objectives to meet the educational needs of up to approximately 1,000 NUSD students in grades K–8 and meet NUSD’s geographical needs for additional schools within its service boundary and west of I-5, and slow enrollment growth at nearby overcrowded elementary and middle schools.

Further, none of these sites are identified by the Sacramento International Airport Land Use Compatibility Plan (ALUCP) as within the Sacramento International Airport’s referral areas or safety zones (Sacramento Area Council of Governments [SACOG] 2013).



Source: Natomas Unified School District 2018

Exhibit 4-1. Off-site Alternative Locations

Sites A, B, C, and G are within the City limits and served by City utility infrastructure and public services. It is expected that potentially significant and significant impacts on agricultural resources; air quality; biological resources; geology, soils, minerals, and paleontological resources; hazards and hazardous materials (except for airport safety hazards); hydrology and water quality; noise and vibration; public services and utilities; traffic; and energy identified throughout this EIR for the proposed project would be similar because all of these alternative sites would have a similar environmental setting and would have similar impacts.

Sites A and G, would not meet one or more CDE criteria outlined in California Code of Regulations Title 5. Sites A and G are located within 500 feet of I-5, which is considered a major transportation corridor.

Sites D, E, F, and H are entirely within unincorporated Sacramento County. These sites are designated by the County General Plan as Agricultural Cropland and zoned by Sacramento County as AG-40 (Agricultural, 40-acre minimum lot size). Like the proposed project, all four sites are outside of the County's Urban Services Boundary (USB) and Urban Policy Area (UPA). The USB is the boundary of the urban area in the unincorporated County that provides a permanent boundary that is not modified except under extraordinary circumstances and is used as a planning tool for urban infrastructure providers for developing long-range master plans for future urbanization. The UPA defines the area expected to receive urban levels of public infrastructure and services within the 20-year planning period of the County General Plan (Sacramento County 2011). Neither the USB nor the UPA would need to be modified to implement the proposed project, but this information is provided nonetheless for planning context.

It is expected that Sites D, E, F, and H would have similar potentially significant and significant impacts on air quality; biological resources; geology, soils, minerals, and paleontological resources; hazards and hazardous materials (except for airport safety hazards); hydrology and water quality; noise and vibration; public services; traffic; and energy as identified throughout this EIR for the proposed project because these alternative sites would be located in a similar environmental setting. Sites D, E, F, and H would require the extension of municipal water and wastewater services. Development on Sites D, E, and H would result in the conversion of Prime Farmland, and thus would have a greater impact on agricultural resources than the proposed project (California Department of Conservation 2016).

Sites D, E, F, and H would not meet one or more CDE criteria outlined in California Code of Regulations Title 5. Sites D, E, F, and H and these are not located in the vicinity of bicycle and pedestrian trails or alternative modes of transportation and are farther from the students the District needs to house. Site H is located within 500 feet of Interstate 80, which is considered a major transportation corridor.

NUSD has elected in this case not to further examine these alternative sites because Sites A through H would likely have similar or greater environmental impacts than the proposed project; Sites A, D, E, F, H, and G would not meet one or more CDE criteria outlined in California Code of Regulations Title 5.

4.2.2 CONNECTION TO MUNICIPAL DRAINAGE SYSTEMS ALTERNATIVE

As stated in Chapter 2, "Project Description," stormwater and irrigation water runoff would be routed to an on-site stormwater detention pond via a network of storm drains and underground drainage pipelines. The detention basin would drain to an existing RD 1000 outfall to the West Drainage Canal (see Exhibit 2-5 in Chapter 2, "Project Description").

Municipal drainage systems are located east within the Westlake residential development and south within Del Paso Road. Connection to these municipal drainage systems could eliminate the need for a detention basin, and would avoid discharge of urban runoff into the West Drainage Canal. However, the elevation of the project site is greater than both the Westlake residential development and Del Paso Road and stormwater could not gravity drain into either system. This alternative is not feasible; therefore, NUSD has elected not to examine this alternative in detail.

4.2.3 HIGH SCHOOL DEVELOPMENT ALTERNATIVE

The project site was originally envisioned by NUSD as a middle/high school. The middle school/high school (grades 7–12) was proposed as a magnet school for biological sciences with capacity to accommodate 650–820 students and 30–40 staff members. The middle/high school would have been located on approximately 12–13 acres of the southeast and central portion of the project site and would have included an administration building, classrooms, laboratories, a Learning Resource Center, Student Commons, and day-use athletic facilities. Approximately 8 acres of the site was proposed for use as an outdoor laboratory space for biological investigations, and the remaining 19–20 acres would remain relatively undisturbed to provide opportunities for students to observe the native plants and wildlife of the Natomas Basin. The proposed design included the option for either a one-story or two-story buildings.

As discussed in Chapter 2, “Project Description,” with SAFCA’s initial levee improvements completed and the housing market recovered, development has resumed in the Natomas Basin and within NUSD’s service boundary. As a result, NUSD’s enrollment has increased, area schools are overcrowded, and NUSD has a pressing need for a new school to serve the area west of I-5. NUSD has been taking steps to address its current overcrowding, such as moving 6th graders to middle schools, adjusting school boundaries, and adding portable classrooms. These changes have affected schools in the immediate area, including the H. Allen Hight Elementary, Heron K-8 School, and Witter Ranch Elementary School, located less than two miles to the south. NUSD must now move forward with a new elementary and middle school to accommodate existing needs, in addition to the potential for new schools in other locations to accommodate population growth. Therefore, development of a middle/high school on the project site is no longer considered feasible.

4.3 ALTERNATIVES CONSIDERED IN DETAIL IN THE EIR

This section provides a comparative analysis of the alternatives that were selected for detailed analysis in the EIR:

- ▶ Alternative 1: No Project Alternative
- ▶ Alternative 2: Two-Story Classrooms Alternative
- ▶ Alternative 3: Reconfigured Site Plan Alternative

4.3.1 ALTERNATIVE 1: NO PROJECT ALTERNATIVE

CEQA Guidelines Section 15126.6(e)(2), states that a discussion of the “No Project” alternative must consider “what would be reasonably expected to occur in the foreseeable future if the project were not approved, based on current plans.”

The project site is in unincorporated Sacramento County and located adjacent to, but outside of the County’s current USB and UPA, neither of which would need to be modified to implement the proposed project. As shown

in Exhibit 3.10-2 in Section 3.10, “Land Use, Planning, Population, and Housing,” the project site is designated by the County General Plan as Agricultural Cropland and zoned Sacramento County as AG-80 (Agricultural, 80-acre minimum lot size).¹ The Agricultural Cropland designation represents agricultural lands most suitable for intensive agriculture. The agricultural activities included are row crops, tree crops, irrigated grains, and dairies. The Agricultural Cropland designation allows single-family dwelling units at a density no greater than one unit per 40 acres (Sacramento County 2011).

The AG-80 zoning district promotes the long-term agricultural use and discourages the premature and unnecessary conversion of agricultural land to urban uses. Permitted uses under the AG-80 zoning district include one single-family residence per parcel, all agricultural uses, and accessory dwellings for agricultural employees (Sacramento County 2016).

Previously, the project site was included in the Natomas Vision Plan as being within an approximately 575-acre area known as the South Precinct.² Sacramento County is now exclusively directing the Vision Plan and is currently focused on the North Precinct Master Plan portion of the overall Vision Plan area, which does not include the project site. In 2015, Sacramento County prepared a planning entitlement application addendum for the Natomas Vision Plan Area (Sacramento County 2015). The entitlement application addendum did not identify any future development within the South Precinct and proposed that the South Precinct retain its existing zoning designation (Sacramento County 2015).

Historically, the site was used for agricultural crop production including wheat, barley, and rice. The last year of rice production was 2002. In 2006 and 2007, the site was in wheat production. It is assumed that, under the No Project Alternative, one single-family dwelling unit could be constructed on the project site, as permitted under the AG-80 zoning district. The No Project Alternative further assumes existing conditions within the project site could continue similar to current conditions; however, there are no constraints that would preclude the project site being returned to agricultural production.

Under the No Project Alternative, existing and future elementary and middle school students would likely attend Natomas Middle School, H. Allen Hight Elementary School, Heron K-8 School, and Witter Ranch Elementary School. The NUSD anticipates that design capacity at these schools could occur by the 2019-2020 school year (NUSD 2014).

ABILITY OF ALTERNATIVE TO MEET PROJECT OBJECTIVES

The No Project Alternative would not meet the project’s objectives. The No Project Alternative would not allow for the NUSD to meet the educational needs of up to approximately 1,000 students, meet NUSD’s geographical needs for additional schools within its service boundary and west of I-5, or slow enrollment growth at nearby overcrowded elementary and middle schools.

¹ Sacramento County’s Online Map resource was used on July 11, 2018, to confirm the current General Plan land use designation and zoning district for the proposed school site (http://generalmap.gis.saccounty.net/JSViewer/county_portal.html#). This is for APN 225-0030-065-0000.

² The City of Sacramento and the County of Sacramento had a Memorandum of Understanding (MOU), called the Natomas Joint Vision, which described the process for planning the Natomas area outside the City of Sacramento.

4.3.2 ALTERNATIVE 2: TWO-STORY CLASSROOMS ALTERNATIVE

Under Alternative 2, the classrooms would be designed as two-story buildings. As a result, the classroom buildings would occupy less space within the project site and result in a more compact footprint with less developed acreage, thereby potentially reducing impacts related to ground disturbance and erosion.

The layout of the school buildings, recreation facilities, detention basin, parking lot, and student drop off/pickup area and access to the project site would be the same as the proposed project (see Exhibit 2-4 in Chapter 2, “Project Description”). Similar to the proposed project, the school would have approximately 82,000 square feet of total building space consisting of 40 classrooms with two special education spaces, a multi-purpose building/gymnasium, and an administration building. The grounds would include an internal quad, hardcourts, and playing fields. This alternative would accommodate the same number of students and staff as the proposed project (i.e., up to approximately 1,000 students in grades K–8 and approximately 60 staff).

ABILITY OF ALTERNATIVE TO MEET PROJECT OBJECTIVES

Alternative 2 would meet each of the project objectives. Development of a reduced size alternative could be designed in a way that would meet the educational needs of up to approximately 1,000 NUSD students, meet NUSD’s geographical needs for additional schools within its service boundary and west of I-5, slow enrollment growth at nearby overcrowded elementary and middle schools, and provide safe and efficient school site access for students and NUSD staff.

4.3.3 ALTERNATIVE 3: RECONFIGURED SITE PLAN ALTERNATIVE

Alternative 3 would relocate all proposed development to the southernmost boundary of the project site, as shown on Exhibit 4-2. This alternative would reduce the footprint of the school to approximately 16 acres compared to a footprint of approximately 18.3 acres under the proposed project. For this alternative, the layout of the classrooms, multi-purpose building/gymnasium, administration building, internal quad, hardcourts, and playing fields, and detention basin within the project footprint would be similar to the proposed project. However, the site plan would be modified to relocate the kinder play area, amphitheater, and parking lot. Access to the project site would be the same as the proposed project.

Similar to the proposed project, the school would have approximately 82,000 square feet of total building space. This alternative would accommodate the same number of students and staff as the proposed project (i.e., up to approximately 1,000 students in grades K–8 and approximately 60 staff).



Source: Lionakis

Exhibit 4-2. Reconfigured Site Plan

Alternative 3 would decrease the amount of ground disturbance on the project site compared to the proposed project by 2.2 acres. Alternative 3 would have a shorter primary roadway access from Del Paso Road, which would reduce construction noise and air quality effects relative to the proposed project. This alternative would also reduce operational noise exposure since fewer homes in the Westlake residential development would be located within approximately 200 feet of developed portions of the property. Furthermore, aesthetic impacts under Alternative 3 would be reduced because the overall size of the campus would occupy a smaller footprint and the school facilities would be reoriented compared to the proposed project.

ABILITY OF ALTERNATIVE TO MEET PROJECT OBJECTIVES

Alternative 3 would meet each of the project objectives. Development of a reduced size alternative could be designed in a way that would to meet the educational needs of up to approximately 1,000 NUSD students, meet NUSD's geographical needs for additional schools within its service boundary and west of I-5, slow enrollment growth at nearby overcrowded elementary and middle schools, and provide safe and efficient school site access for students and NUSD staff.

4.4 COMPARISON OF ALTERNATIVES

This section compares the potential environmental effects of each alternative to the potential environmental effects of proposed project that are examined in detail in this EIR.

4.4.1 AESTHETICS

ALTERNATIVE 1

Construction of a single-family residence on the project site under Alternative 1 would change the existing visual character and quality of the project site, but to a much lesser degree as compared to the proposed project. Even with the development of one on-site residence, rural agricultural views on the project site would continue. Furthermore, views of rural agricultural land from recreationists on the Egret Park and Fisherman's Lake Parkway Trails, as well as from residences in the Westlake development, would, for the most part, be retained. Therefore, Alternative 1 would have a substantially reduced level of aesthetics impacts as compared to the proposed project. *[Reduced]*

ALTERNATIVE 2

Construction of two-story buildings at the project site under Alternative 2 would result in an increased change to rural views from residences in the Westlake development and from recreationists on the Fisherman's Lake Parkway and Egret Park Trails. Two-story buildings would stand out more prominently in the landscape, resulting in a greater contrast in terms of form, line, and color as compared to rural views to the west and southwest. From an aesthetics perspective, the slight reduction of the developed area of the project site would not make up for the increased prominence in the landscape and loss of views that would result from construction of two-story buildings. Therefore, Alternative 2 would have a greater level of aesthetics impacts as compared to the proposed project. *[Greater]*

ALTERNATIVE 3

Because project-related development would be located in the southern rather than the northern portion of the project site, the viewshed for recreationists at the west end of the Egret Park Trail would continue to include views of rural agricultural land to the west, which would be changed more substantially under the proposed project. Under Alternative 3, the school campus would be developed approximately 600 feet closer to the Fisherman's Lake Parkway Trail, but would still be approximately 1,000 feet north of the north end of the trail at Del Paso Road. The reduction in overall size of the campus, combined with its location, and the reorientation of the campus in a narrower format extending to the west, would result in fewer overall sensitive receptors affected within the Westlake residential development. (As noted in Section 3.1, "Aesthetics," views from residences in the Natomas Central development to the south are blocked by a stone wall and associated landscaping along Del Paso Road.) Alternative 3 would have a reduced aesthetics impact compared to the proposed project; however, Alternative 3 would degrade the existing visual character and quality of the project site and impacts on aesthetics would still be significant and unavoidable. *[Reduced]*

4.4.2 AGRICULTURAL RESOURCES

ALTERNATIVE 1

Under Alternative 1, it is assumed the project site would remain fallow and one single-family residence could be developed on the project site. No school facilities would be constructed; therefore, there would be no impacts on agricultural resources under Alternative 1. *[Reduced]*

ALTERNATIVE 2

Alternative 2 would include the same type of development as the proposed project, but with a slightly less developed acreage. Similar to the proposed project, the West Drainage Canal and the parcel that is adjacent to and west of the project site would provide an approximate setback of several hundred feet from off-site agricultural operations. Impacts to agricultural resources under Alternative 2 would be the same as for the proposed project and would be less than significant. *[Similar]*

ALTERNATIVE 3

Alternative 3 would include the same type of development as the proposed project, but Alternative 3 would reduce the developed acreage by approximately 2 acres. This alternative would relocate all proposed development to the southernmost boundary of the project site. Similar to the proposed project, the West Drainage Canal and the parcel that is adjacent to and west of the project site would provide a setback of several hundred feet from off-site agricultural operations. Impacts to agricultural resources under Alternative 3 would be the same as for the proposed project and would be less than significant. *[Similar]*

4.4.3 AIR QUALITY

ALTERNATIVE 1

Under Alternative 1, it is assumed the project site would remain fallow and one single-family residence could be developed on the project site. Therefore, the amount of construction-related air pollutants that would be generated under Alternative 1 would be substantially reduced as compared to the proposed project. Operational generation

of criteria air pollutants and precursors would also be substantially reduced compared to the proposed project. *[Reduced]*

ALTERNATIVE 2

Alternative 2 would include the same type of development as the proposed project, but with less developed acreage. The construction period for Alternative 2 would be similar to the construction period for the proposed project (i.e., 12 to 18 months) and involve use of the same types of equipment. Alternative 2 would result in similar potentially significant impacts associated with potential generation of temporary, short-term, construction-related emissions of criteria pollutants and precursors as the proposed project. Alternative 2 would implement Mitigation Measures 3.3-1a to 3.3-1c presented in Section 3.3, “Air Quality” of this EIR for the proposed project. Similar to the proposed project, these mitigation measures would reduce potentially significant impacts associated with on-site construction-related air quality emissions under Alternative 2 to a less-than-significant level.

As with the proposed project, impacts under Alternative 2 associated with long-term generation of criteria air pollutants and precursors, and exposure to toxic air contaminants would be less than significant. *[Similar]*

ALTERNATIVE 3

Alternative 3 would include the same type of development as the proposed project, but Alternative 3 would reduce the developed acreage by approximately 2 acres. The construction period for Alternative 3 would be similar to the construction period for the proposed project (i.e., 12 to 18 months) and involve use of the same types of equipment. Alternative 3 would result in similar potentially significant impacts associated with potential generation of temporary, short-term, construction-related emissions of criteria pollutants and precursors as the proposed project. Alternative 3 would implement Mitigation Measures 3.3-1a to 3.3-1c presented in Section 3.3, “Air Quality” of this EIR for the proposed project. Similar to the proposed project, these mitigation measures would reduce potentially significant impacts under Alternative 3 associated with on-site construction-related air quality emissions to a less-than-significant level.

As with the proposed project, impacts associated with long-term generation of criteria air pollutants and precursors, and exposure to toxic air contaminants under Alternative 3 would be less than significant. *[Similar]*

4.4.4 BIOLOGICAL RESOURCES

ALTERNATIVE 1

Under Alternative 1, it is assumed the project site would remain fallow and one single-family residence could be developed on the project site. Therefore, there would be reduced impacts on biological resources. *[Reduced]*

ALTERNATIVE 2

Alternative 2 would include the same type of development as the proposed project, but with a slightly smaller footprint. Impacts related to biological resources would be similar to the proposed project in type and extent since the area envisioned for development would be the same. Similar to the proposed project, Alternative 2 could result in potentially significant impacts on habitat for giant garter snake, Swainson’s hawk, burrowing owl, western pond turtle, other special-status birds, and raptors and nesting birds. Alternative 2 would implement Mitigation Measures 3.4-1a to 3.4-1f and 3.4-3 presented in Section 3.4, “Biological Resources” of this EIR for

the proposed project. These mitigation measures would reduce potentially significant impacts under Alternative 2 to protected species to a less-than-significant level. *[Similar]*

ALTERNATIVE 3

Alternative 3 would include the same type of development as the proposed project, but Alternative 3 would reduce the school footprint by approximately 2 acres. Impacts related to biological resources would be similar to the proposed project in type and extent since the area envisioned for development would be the same. Similar to the proposed project, Alternative 3 could result in potentially significant impacts on habitat for giant garter snake, Swainson’s hawk, burrowing owl, western pond turtle, other special-status birds, and raptors and nesting birds. Alternative 3 would implement Mitigation Measures 3.4-1a to 3.4-1f and 3.4-3 presented in Section 3.4, “Biological Resources” of this EIR for the proposed project. These mitigation measures would reduce potentially significant impacts to protected species to a less-than-significant level. *[Similar]*

4.4.5 CULTURAL RESOURCES

ALTERNATIVE 1

Under Alternative 1, it is assumed the project site would remain fallow and one single-family residence could be developed on the project site. Although there is always a potential that previously unknown cultural resources, including tribal cultural resources, may be present under the ground surface, the project site has been disturbed by previous agricultural cultivation and the identification of cultural resources during construction of one residence is unlikely. Therefore, the potential for adverse impacts to cultural resources would be reduced compared to the proposed project. *[Reduced]*

ALTERNATIVE 2

Alternative 2 would entail the same types of ground disturbance as the proposed project with a slightly smaller footprint. Similar to the proposed project, construction under Alternative 2 could disturb previously undiscovered cultural resources, tribal cultural resources, or human remains during project excavation. Alternative 2 would implement Mitigation Measures 3.5-1a to 3.5-1g and 3.5-2 presented in Section 3.5, “Cultural Resources” of this EIR for the proposed project. Similar to the proposed project, these mitigation measures would reduce potentially significant impacts under Alternative 2 related to previously undiscovered cultural resources or human remains to a less-than-significant level. *[Similar]*

ALTERNATIVE 3

Alternative 3 would entail the same types of ground disturbance as the proposed project with a slightly smaller footprint. Similar to the proposed project, construction under Alternative 3 could disturb previously undiscovered cultural resources, tribal cultural resources, or human remains during project excavation. Alternative 3 would implement Mitigation Measures 3.5-1a to 3.5-1g and 3.5-2 presented in Section 3.5, “Cultural Resources” of this EIR for the proposed project. Similar to the proposed project, these mitigation measures would reduce potentially significant impacts under Alternative 3 related to previously undiscovered cultural resources or human remains to a less-than-significant level. *[Similar]*

4.4.6 GEOLOGY, SOILS, MINERALS, AND PALEONTOLOGICAL RESOURCES

ALTERNATIVE 1

Alternative 1 could entail construction of one single-family residence in the same rock formations and the same soil types as the proposed project; therefore, the same types of geologic and soils hazards could occur. Similar to the proposed project, the Alternative 1 site does not contain any known deposits of valuable mineral resources, and construction would not occur in a paleontologically sensitive rock formation. Given that Alternative 1 could result in development of only one residence, the level of impacts related to geology and soils under Alternative 1 would be substantially reduced as compared to the proposed project. *[Reduced]*

ALTERNATIVE 2

Alternative 2 would entail construction in the same rock formations and the same soil types as the proposed project; therefore, the same types of geologic and soils hazards could occur. Similar to the proposed project, the Alternative 2 project site does not contain any known deposits of valuable mineral resources, and construction would not occur in a paleontologically sensitive rock formation. Alternative 2 would only result in a slight reduction of developed acreage, and construction of two-story buildings in liquefiable soils with a high shrink-swell potential would result in a need for more substantial building footings and different engineering and design (and likely an increased cost) in order to meet the requirements of the California Department of Education/Division of State Architect. Therefore, impacts related to geology and soils under Alternative 2 would be greater as compared to the proposed project. *[Greater]*

ALTERNATIVE 3

Alternative 3 would entail construction in the same rock formations and the same soil types as the proposed project; therefore, the same types of geologic and soils hazards could occur. Similar to the proposed project, the Alternative 3 project site does not contain any known deposits of valuable mineral resources, and construction would not occur in a paleontologically sensitive rock formation. Similar types of one-story buildings and other school campus facilities would be constructed under Alternative 3 as compared to the proposed project. Given that Alternative 3 would result in a reduction of developed acreage by approximately 2 acres, impacts related to geology and soils under Alternative 3 would be reduced as compared to the proposed project. *[Reduced]*

4.4.7 GREENHOUSE GAS EMISSIONS

ALTERNATIVE 1

Alternative 1, which could include development of one single-family residence, would result in less construction-related greenhouse gas (GHG) emissions and have substantially less operational-related GHG emissions compared to the proposed project. However, Alternative 1 would result in an increase in the number of vehicle miles traveled (VMT) compared to the VMT for the proposed project. Existing and future elementary and middle school students would attend other NUSD schools within the district, and the anticipated distance for attendees to drive to alternate NUSD schools is more than that if they were to attend the proposed school. Travel to these alternative school sites in the NUSD could result in 3,664 daily VMT, which would be 2,139 more VMT than anticipated as a result of the proposed project. This additional level of VMT results in approximately 152 metric

tons of carbon dioxide equivalent per year (MT CO₂e/year) greater emissions than would result from implementation of the proposed project. *[Greater]*

ALTERNATIVE 2

Alternative 2 would include the same type of development as the proposed project, but with a slightly less developed acreage. The construction period for Alternative 2 would be similar to the construction period for the proposed project (i.e., 12 to 18 months) and involve use of the same types of equipment. Similar to the proposed project, the school buildings would have approximately 82,000 square feet of total building space and accommodate the same number of students and staff as the proposed project. Therefore, construction and operational GHG emissions associated with Alternative 2 would be similar to the construction and operational GHG emissions generated under the proposed project. Short-term maximum annual GHG emissions and long-term total annual GHG emissions (i.e., operational emissions and amortized construction emissions) would not exceed the Sacramento Metropolitan Air Quality Management District (SMAQMD) threshold of significance of 1,100 MT CO₂e/year under Alternative 2.

Similar to the proposed project, Alternative 2 would reduce the VMT that might otherwise occur if the Paso Verde School was not constructed and students were required to travel to other NUSD schools. With consideration of this reduction in VMT and subsequently less GHG emissions from mobile sources, Alternative 2's total annual emissions, including amortized construction emissions and annual operational emissions, would be a net regional reduction in GHG emissions for school transport within the NUSD school district.

For the reasons described above, impacts associated with construction and operational GHG emissions under Alternative 2 would be similar to the proposed project. *[Similar]*

ALTERNATIVE 3

The construction period for Alternative 3 would be similar to the construction period for the proposed project (i.e., 12 to 18 months) and involve use of the same types of equipment. Alternative 3 would include the same type of development as the proposed project; however, Alternative 3 would reduce the developed acreage by approximately 2 acres. Therefore, construction-related GHG emissions associated with Alternative 3 would be less than the construction-related GHG emissions generated under the proposed project.

Similar to the proposed project, the school buildings would have approximately 82,000 square feet of total building space and accommodate the same number of students and staff as the proposed project. Therefore, operational GHG emissions associated with Alternative 3 would be similar to the operational GHG emissions generated under the proposed project.

Similar to the proposed project, Alternative 3 would reduce the VMT that might otherwise occur if the Paso Verde School was not constructed and students were required to travel to other NUSD schools. With consideration of this reduction in VMT and subsequently less GHG emissions from mobile sources, Alternative 3's total annual emissions, including amortized construction emissions and annual operational emissions, would be a net regional reduction in GHG emissions for school transport within the NUSD school district.

Overall, short-term maximum annual GHG emissions would be less than the proposed project and long-term total annual GHG emissions (i.e., operational emissions and amortized construction emissions) would be similar to the

proposed project. Neither short-term nor long-term GHG emissions would exceed the SMAQMD threshold of significance of 1,100 MT CO₂e/year under Alternative 3. *[Reduced]*

4.4.8 HAZARDS AND HAZARDOUS MATERIALS

ALTERNATIVE 1

Under Alternative 1, it is assumed the project site would remain fallow and one single-family residence could be developed on the project site; thus, the potential for accidental spills of hazardous materials or construction workers' exposure to hazardous materials would be reduced. *[Reduced]*

ALTERNATIVE 2

Construction and operation of Alternative 2 would involve the same storage, use, and transport of hazardous materials as the proposed project, and Alternative 2 would comply with the same existing hazardous materials laws and regulations as the proposed project.

As with the proposed project, Alternative 2 includes development of school facilities that would be surrounded by undeveloped land that could be susceptible to wildland fires. Alternative 2 would implement Mitigation Measure 3.8-4 presented in Section 3.8, "Hazards and Hazardous Materials," of this EIR for the proposed project. Similar to the proposed project, this mitigation measure would reduce potentially significant impacts under Alternative 2 to a less-than-significant level.

Similar to the proposed project, Alternative 2 would not include uses that could create safety hazards or place buildings within Safety Zone 4 of the Sacramento Airport Land Use Compatibility Plan (ALUCP). The playing fields would be located in Safety Zone 4. SACOG considers the playing fields as "Group Recreation," and the ALUCP conditionally allows athletic fields under this land use category. All buildings would be placed in Safety Zone 6 where K-12 schools are a normally compatible use. The two-story buildings would not exceed height limitations for airspace protection based on criteria set forth in Federal Aviation Regulations Part 77. Therefore, Alternative 2 would not create safety hazards for people near the Sacramento International Airport. *[Similar]*

ALTERNATIVE 3

Construction and operation of Alternative 3 would involve the same storage, use, and transport of hazardous materials as the proposed project, and Alternative 3 would comply with the same existing hazardous materials laws and regulations as the proposed project.

As with the proposed project, Alternative 3 includes development of school facilities that would be surrounded by undeveloped land that could be susceptible to wildland fires. Alternative 3 would implement Mitigation Measure 3.8-4 presented in Section 3.8, "Hazards and Hazardous Materials," of this EIR for the proposed project. Similar to the proposed project, this mitigation measure would reduce potentially significant impacts under Alternative 3 to a less-than-significant level.

Under Alternative 3, the school facilities shown in the southwestern corner of the site plan, including the multi-purpose building, administration building, one school building, the kinderplay area, and parking lots, are located outside of the Sacramento International Airport Influence Area. However, the remainder of the classroom buildings and the playing fields would be within Zone 4. The ALCUP conditionally allows playfields as a

compatible use. However, the remaining buildings would be an incompatible use with Zone 4. As a result, occupants of school buildings and visitors to the project site would be exposed to a low to moderate aircraft safety risk (SACOG 2013). Alternative 3 could result in greater safety hazards compared to the proposed project. *[Greater]*

4.4.9 HYDROLOGY AND WATER QUALITY

ALTERNATIVE 1

Up to one new single-family residence with a new potable water well and septic system could be developed on the project site. Installation of a small new groundwater well to serve potable water needs for one residence would result in minor, but increased, effects to the groundwater table as compared to the proposed project. Because the only new impervious surfaces created under Alternative 1 would be associated with one residence as compared to 18 acres of school campus under the proposed project, urban runoff with associated pollutants (such as organic matter, nutrients, heavy metals, bacteria, oil and grease, and toxic chemicals), all of which can degrade receiving water quality, would not occur. Alternative 1 would not require installation of a detention basin with a new drainage outfall in the RD 1000 West Drainage Canal. Although the one residence developed on the project site would place housing in a floodplain, this would represent a substantial reduction in the number of people exposed to flooding hazards as compared to the proposed project. Finally, because the project site would not be developed with 18 acres of impervious surfaces as compared to the proposed project, Alternative 1 would not decrease the amount of surface area available for rainwater to supply groundwater recharge. The residence would be required to comply with appropriate Sacramento County erosion-control policies; Sacramento County and Section 13801 (California Water Code) well installation standards addressing aquifer contamination from surface water; and local, State, and federal regulatory agency standards designed to avoid contaminated runoff and other waste discharges. The level of impacts related to hydrology and water quality under Alternative 1 would be substantially reduced as compared to the proposed project. *[Reduced]*

ALTERNATIVE 2

Alternative 2 would entail construction in the same location as the proposed project; therefore, the same types of hydrologic, flooding, and water quality impacts could occur. Given that Alternative 2 would only result in a minor reduction of developed acreage, and would not result in a reduction of the overall school population, impacts related to hydrology, flooding, and water quality under Alternative 2 would be similar to the proposed project. *[Similar]*

ALTERNATIVE 3

Alternative 3 would entail construction in the same location as the proposed project; therefore, the same types of hydrologic, flooding, and water quality impacts could occur. Alternative 3 would result in a reduction of developed acreage by approximately 2 acres, thereby reducing urban runoff, reducing the amount of development in a floodplain, and providing a larger area available for groundwater recharge. Therefore, impacts related to hydrology, flooding, and water quality under Alternative 3 would be reduced as compared to the proposed project. *[Reduced]*

4.4.10 LAND USE, PLANNING, POPULATION, AND HOUSING

ALTERNATIVE 1

Under Alternative 1, it is assumed the project site would remain fallow and one single-family residence could be developed on the project site. One single-family residence is permitted in the AG-80 zoning district. The Sacramento ALUCP indicates a single-family residence would be conditionally allowed in Zone 4 and would be a compatible use in Zone 6 (SACOG 2013). *[Similar]*

ALTERNATIVE 2

Public schools are allowed by right within the school property's zoning district. Thus, similar to the proposed project, Alternative 2 would not conflict with Sacramento County General Plan and Zoning Ordinance.

As with the proposed project, Alternative 2 would not result in safety and noise compatibility concerns (see Section 4.4.9, "Hazards and Hazardous Materials," and 4.4.11, "Noise and Vibration," for further discussion). Alternative 2 would include the same type of development as the proposed project in the same location on the project site. Similar to the proposed project, Alternative 2 does not include land uses that would result in flight hazards. The two-story buildings would not exceed height limitations for airspace protection based on criteria set forth in Federal Aviation Regulations Part 77. Therefore, the proposed project would be consistent with the Sacramento ALUCP. *[Similar]*

ALTERNATIVE 3

Public schools are allowed by right within the school property's zoning district. Thus, similar to the proposed project, Alternative 3 would not conflict with Sacramento County General Plan and Zoning Ordinance.

Alternative 3 would include the same type of development as the proposed project, but Alternative 3 would relocate all proposed development to the southernmost boundary of the project site. Similar to the proposed project, Alternative 2 does not include land uses that would result in flight hazards. As with the proposed project, Alternative 2 would not result in noise compatibility concerns (see Section 4.4.11, "Noise and Vibration," for further discussion). However, Alternative 3 would place buildings in Zone 4, and as a result, occupants of school buildings and visitors to the project site would be exposed to a low to moderate aircraft safety risk (see Section 4.4.9, "Hazards and Hazardous Materials," for further discussion). Therefore, the proposed project would be inconsistent with the Sacramento ALUCP. *[Greater]*

4.4.11 NOISE AND VIBRATION

ALTERNATIVE 1: NO-PROJECT ALTERNATIVE

Under Alternative 1, it is assumed the project site would remain fallow and one single-family residence could be developed on the project site. No school facilities would be constructed; therefore, construction and operational noise generated under Alternative 1 would be substantially reduced compared to the proposed project. *[Reduced]*

ALTERNATIVE 2

Alternative 2 would include the same type of development as the proposed project in the same location on the project site and therefore, noise and vibration impacts would be similar. Alternative 2 would implement Mitigation Measure 3.11-1 presented in Section 3.11, “Noise and Vibration” of this EIR for the proposed project. As with the proposed project, this mitigation measure would reduce potentially significant impacts under Alternative 2 but not to a less-than-significant level. Construction-related noise impacts under Alternative 2 would be similar to the proposed project and be significant and unavoidable.

Similar to the proposed project, Alternative 2 would involve noise associated with vehicular trips and typical on-site sources associated with operation of school facilities. Impacts associated with interior and exterior noise from aircrafts would be the same under Alternative 2 as the proposed project because school facilities under Alternative 2 would be in the same general locations as the proposed project. Therefore, impacts associated with operational noise under Alternative 2 would be less than significant for the same reasons described in Section 3.11, “Noise and Vibration,” for the proposed project. *[Similar]*

ALTERNATIVE 3

Alternative 3 would include the same type of development as the proposed project, but Alternative 3 would relocate all proposed development to the southernmost portion of the project site. Relocation of the school facilities would increase the distance between on-site noise-generating uses and off-site noise sensitive uses as compared to the proposed project. The nearest off-site noise-sensitive uses in the vicinity of Alternative 3 are approximately 250 feet east of the project site boundary, compared to 200 feet under the proposed project.

Exterior hourly noise levels from construction activities within the project site would be reduced from 74 dB L_{eq} under the proposed project to 70 dB L_{eq} under Alternative 3 and exterior hourly noise levels from construction of pedestrian/bicycle access ways would be reduced from 82 dB L_{eq} under the proposed project to 70 dB L_{eq} under Alternative 3. Although construction noise levels would be reduced under Alternative 3, construction activities would still expose sensitive receptors to noise levels in excess of the applicable noise standards and/or result in a noticeable increase in ambient noise levels. Alternative 3 would implement Mitigation Measure 3.11-1 presented in Section 3.11 of this EIR for the proposed project. This mitigation measure would reduce potentially significant impacts under Alternative 3 but not to a less-than-significant level. Construction-related noise impacts under Alternative 3 would be less than the proposed project but would still be significant and unavoidable.

School facilities under Alternative 3 would be relocated to the southernmost boundary of the project site, but would remain within the same noise contours for the Sacramento International Airport as the proposed project. Therefore, impacts associated with interior and exterior noise from aircrafts would be the same as the proposed project. Alternative 3 would involve noise associated with vehicular trips and typical on-site sources associated with operation of school facilities. Alternative 3 would relocate school facilities farther from closest off-site noise-sensitive land uses. Therefore, the resulting noise level at the nearest noise-sensitive receptor would be less than the proposed project. *[Reduced]*

4.4.12 PUBLIC SERVICES, INCLUDING RECREATION

ALTERNATIVE 1

Alternative 1, which could include development of one single-family residence, would have only a minor, negligible effect related to the provision of law enforcement, fire protection, education, and parks and recreation services. *[Reduced]*

ALTERNATIVE 2

Alternative 2 would involve approximately the same amount of development as the proposed project. The school buildings would have approximately 82,000 square feet of total building space and the grounds would include an internal quad, hardcourts, and playing fields. Similar to the proposed project, Alternative 2 would incorporate all California Fire Code and California Education Code requirements into project designs, which would reduce the dependence on fire department equipment and personnel by reducing fire hazards. Furthermore, Alternative 2 would not require additional Sacramento County Sheriff's Department staffing to maintain its officer-to-population service ratio.

Alternative 2 would not affect Sacramento Fire Department's response times or other performance objectives or substantially increase the Sheriff's Department calls for service; therefore, Alternative 2 would not result in the construction of new or expansion of existing fire protection or police protection facilities that result in environmental effects. Impacts to public services under Alternative 2 would be the same as for the proposed project identified in Section 3.12, "Public Services and Recreation," of this EIR and would be less than significant. *[Similar]*

ALTERNATIVE 3

Alternative 3 would involve approximately the same amount of development as the proposed project. The school buildings would have approximately 82,000 square feet of total building space and the grounds would include an internal quad, hardcourts, and playing fields. Similar to the proposed project, Alternative 3 would incorporate all California Fire Code and California Education Code requirements into project designs, which would reduce the dependence on fire department equipment and personnel by reducing fire hazards. Furthermore, Alternative 3 would not require additional Sacramento County Sheriff's Department staffing to maintain its officer-to-population service ratio.

Alternative 3 would not affect Sacramento Fire Department's response times or other performance objectives or substantially increase the Sheriff's Department calls for service; therefore, Alternative 3 would not result in the construction of new or expansion of existing fire protection or police protection facilities that result in environmental effects. Impacts to public services under Alternative 2 would be the same as for the proposed project identified in Section 3.12 of this EIR and would be less than significant. *[Similar]*

4.4.13 TRAFFIC AND TRANSPORTATION

ALTERNATIVE 1

Alternative 1, which could include development of one single-family residence, would have only a minor, negligible effect related to traffic. Alternative 1 would result in an increase in the number of vehicle miles

traveled (VMT) compared to the VMT for the proposed project. Existing and future elementary and middle school students would attend other NUSD schools within the district, and the anticipated distance for attendees to drive to alternate NUSD schools is more than that if they were to attend the proposed school. In total, travel to alternative school sites in the NUSD could result in 3,664 daily VMT, which would be 2,139 more VMT than anticipated as a result of the proposed project. As with the proposed project, this alternative would not have a significant impact related to level of service; emergency access; design hazards; or transit, bicycle, or pedestrian facilities. *[Greater]*

ALTERNATIVE 2

As with the proposed project, implementation of Alternative 2 would involve the temporary and short-term construction-related trips during construction activities. Short-term, temporary, construction-related traffic could result in an increase in emergency response times and impede emergency services. Alternative 2 would implement Mitigation Measure 3.13-5 described in Section 3.13, “Traffic and Transportation,” of this EIR for the proposed project. Similar to the proposed project, implementation of this mitigation measure would reduce construction-related traffic impacts under Alternative 2 to a less-than-significant level.

Alternative 2 would accommodate the same number of students and staff as the proposed project. Alternative 2 would be expected to generate the same number of daily trips as the proposed project and have the same impacts on affected roadway segments, intersections, and I-5 mainline and ramp operations as the proposed project. Similar to the proposed project, Alternative 2 would reduce the travel that might otherwise occur if the Paso Verde School was not constructed and students were required to travel to other NUSD schools. Therefore, impacts associated with traffic and transportation under Alternative 2 would be less than significant for the same reasons described in Section 3.13 for the proposed project. *[Similar]*

ALTERNATIVE 3

As with the proposed project, implementation of Alternative 3 would involve the temporary and short-term construction-related trips during construction activities. Short-term, temporary, construction-related traffic could result in an increase in emergency response times and impede emergency services. Alternative 2 would implement Mitigation Measure 3.13-5 described in Section 3.13 of this EIR for the proposed project. Similar to the proposed project, implementation of this mitigation measure would reduce construction-related traffic impacts under Alternative 3 to a less-than-significant level.

Alternative 3 would accommodate the same number of students and staff as the proposed project. Alternative 3 would be expected to generate the same number of daily trips as the proposed project and have the same impacts on affected roadway segments, intersections, and I-5 mainline and ramp operations as the proposed project. Similar to the proposed project, Alternative 3 would reduce the travel that might otherwise occur if the Paso Verde School was not constructed and students were required to travel to other NUSD schools. Therefore, impacts associated with traffic and transportation under Alternative 3 would be less than significant for the same reasons described in Section 3.13 for the proposed project. *[Similar]*

4.4.14 UTILITIES AND SERVICE SYSTEMS

ALTERNATIVE 1

Alternative 1 could include development of one single-family residence with a new potable water well and septic system. Therefore, Alternative 1 would have no impact associated with the provision of municipal utilities and service systems. [*Reduced*]

ALTERNATIVE 2

Alternative 2 would accommodate the same number of students and staff as the proposed project; therefore Alternative 2 would have the same water demand for the school facilities as the proposed project (180.2 afy [acre-feet per year]). With the reduced acreage, Alternative 2 would have less water demand for landscape irrigation than the proposed project. Water demand for landscape irrigation under Alternative 2 would be approximately 41.1 afy compared to 42.3 afy under the proposed project. Therefore, the estimated water supply demand for Alternative 2 would be 221.3, which is less than the proposed project's water demand of 222.5 afy.

The slight reduction in developed acreage under Alternative 2 would not substantially reduce the amount of wastewater generated as compared to the proposed project. Similar to the proposed project, Alternative 2 would generate 0.03 million gallons per day of average dry-weather flow.

Because Alternative 2 would accommodate the same number of students and staff as the proposed project, Alternative 2 would generate the same amount of solid waste. Therefore, Alternative 2 would generate 0.2 tons per day of solid waste.

Overall, Alternative 2 would have a reduced impact on utilities and service systems because Alternative 2 would result in less water demand compared to the proposed project. [*Reduced*]

ALTERNATIVE 3

Alternative 3 would accommodate the same number of students and staff as the proposed project; therefore Alternative 3 would have the same water demand for the school facilities as the proposed project (180.2 afy). Alternative 3 would have less water supply demand for landscape irrigation than the proposed project. Water demand for landscape irrigation under Alternative 3 would be approximately 37.2 afy compared to 42.3 afy under the proposed project. Therefore, the estimated water supply demand for Alternative 3 would be 217.4, which is less than the proposed project's water demand of 222.5 afy.

The reduction in developed acreage under Alternative 3 would not reduce the amount of wastewater generated as compared to the proposed project. Similar to the proposed project, Alternative 3 would generate 0.03 million gallons per day of average dry-weather flow.

Because Alternative 3 would accommodate the same number of students and staff as the proposed project, Alternative 2 would generate the same amount of solid waste. Therefore, Alternative 3 would generate 0.2 tons per day of solid waste.

Overall, Alternative 3 would have a reduced impact on utilities and service systems because Alternative 3 would result in less water demand compared to the proposed project. [*Reduced*]

4.4.15 ENERGY

ALTERNATIVE 1

Alternative 1, which could include development of one single-family residence, would result in less construction-related energy consumption and have substantially less demand for energy. However, Alternative 1 would result in an increase in the number of VMT compared to the VMT for the proposed project. As stated previously, travel to these alternative school sites in the NUSD could result in 3,664 daily VMT, which would be 2,139 more VMT than anticipated as a result of the proposed project. Alternative 1 would increase the potential transportation-related energy consumption and this would override the energy savings related to other operational energy demand (electricity, etc.) and energy demand for construction. *[Greater]*

ALTERNATIVE 2

The construction period for Alternative 2 would be similar to the construction period for the proposed project (i.e., 12 to 18 months) and involve use of the same types of equipment. Therefore, Alternative 2 would have a similar total construction-related fuel consumption compared to the proposed project. Similar to the proposed project, construction fuel consumption associated with Alternative 2 would not be inefficient, wasteful, or unnecessary.

Alternative 2 would accommodate the same number of students and staff as the proposed project (i.e., up to approximately 1,000 students in grades K–8 and approximately 60 staff). Alternative 2 would have the same number of VMT per day as the proposed project and would subsequently result in the same amount of transportation-related fuel consumption during operations of the proposed school.

The square footage of the school buildings under Alternative 2 is anticipated to be the same as the square footage of the proposed project (i.e., approximately 82,000 square feet). Alternative 2— just as with the proposed project — would incorporate energy efficiency standards identified in the Green Building Code (Part 11 of Title 24) and NUSD’s *Conservation and Building Management Guidelines*. Therefore, the total energy demand and the efficiency of energy use under Alternative 2 would be similar to the proposed project and less than significant. *[Similar]*

ALTERNATIVE 3

The construction period for Alternative 3 would be similar to the construction period for the proposed project (i.e., 12 to 18 months) and involve use of the same types of equipment. Therefore, Alternative 3 would have a similar total construction-related fuel consumption compared to the proposed project. Similar to the proposed project, construction fuel consumption associated with Alternative 3 would not be inefficient, wasteful, or unnecessary.

Alternative 3 would accommodate the same number of students and staff as the proposed project (i.e., up to approximately 1,000 students in grades K–8 and approximately 60 staff). Alternative 3 would have the same number of VMT per day as the proposed project and would subsequently result in the same amount of transportation-related fuel consumption during operations of the proposed school.

The square footage of the school buildings under Alternative 3 is anticipated to be the same as the square footage of the proposed project (i.e., approximately 82,000 square feet). Alternative 3— just as with the proposed project —

would incorporate energy efficiency standards identified in the Green Building Code (Part 11 of Title 24) and NUSD's *Conservation and Building Management Guidelines*. Therefore, the total energy demand and the efficiency of energy use under Alternative 3 would be similar to the proposed project and less than significant. *[Similar]*

4.5 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

CEQA requires that, among the alternatives, an “environmentally superior” alternative be selected and that the reasons for such selection be disclosed. In general, the environmentally superior alternative is the alternative that would generate the fewest or least severe adverse impacts.

Table 4-1 compares the environmental impacts of the alternatives (after mitigation) to the proposed project. The No Project Alternative is environmentally superior to Alternatives 2 and 3, because it would avoid the significant and unavoidable impact to aesthetics, avoid the significant and unavoidable construction-related noise impacts, and avoid the less-than-significant or less-than-significant with mitigation impacts on air quality; biological resources; cultural resources; geology, soils, minerals, and paleontological resources; hazards and hazardous material; hydrology and water quality; noise and vibration; public services and recreation; utilities and service systems; and energy. While the No Project Alternative would eliminate significant and unavoidable adverse effects of the proposed project, it would not achieve the project objectives and would result in greater impacts associated with GHGs, traffic and transportation, and energy.

When the No Project Alternative is the environmentally superior alternative, CEQA requires that an additional alternative be identified. In this case, Alternative 3 would be the environmentally superior alternative. Alternative 3 would meet the project objectives. Alternative 3 would increase impacts associated with land use and hazards. However, Alternative 3 would reduce impacts associated with geology, soils, minerals, and paleontological resources; hydrology and water quality; and utilities and service systems. Although aesthetics impacts and construction-related noise impacts would remain significant and unavoidable, Alternative 3 would substantially reduce these impacts.

**Table 4-1.
Comparison of Significant Environmental Effects of the Alternatives to the Proposed Project**

Environmental Issue Area	Alternative 1: No Project Alternative	Alternative 2: Two-Story Classroom Alternative	Alternative 3: Reconfigured Site Plan Alternative
Aesthetics	Reduced	Greater	Reduced ¹
Agricultural Resources	Similar	Similar	Similar
Air Quality	Reduced	Similar	Similar
Biological Resources	Reduced	Similar	Similar
Cultural Resources	Reduced	Similar	Similar
Geology, Soils, Minerals, and Paleontological Resources	Reduced	Greater	Reduced
Greenhouse Gas Emissions	Greater	Similar	Similar
Hazards and Hazardous Materials	Reduced	Similar	Greater
Hydrology and Water Quality	Reduced	Similar	Reduced
Land Use, Planning, Population, and Housing	Similar	Similar	Greater
Noise and Vibration	Reduced	Similar	Reduced ²
Public Services and Recreation	Reduced	Similar	Similar
Traffic and Transportation	Greater	Similar	Similar
Utilities and Service Systems	Reduced	Reduced	Reduced
Energy	Reduced	Similar	Similar
Total Reduced Impact Topics	11	1	5
Total Increased Impact Topics	2	2	2

¹ Although aesthetics impacts would be reduced under Alternative 3, impacts would not be reduced to a less-than-significant level and remain significant and unavoidable.

² Although construction-related noise impacts would be reduced under Alternative 3, impacts would not be reduced to a less-than-significant level and remain significant and unavoidable.

5 OTHER CEQA CONSIDERATIONS

This chapter addresses California Environmental Quality Act (CEQA) considerations that are required as part of an EIR, including:

- ▶ Cumulative Effects (Section 5.1);
- ▶ Growth-Inducing Effects (Section 5.2);
- ▶ Significant Irreversible Environmental Changes (Section 5.3); and
- ▶ Significant and Unavoidable Environmental Effects (Section 5.4).

5.1 CUMULATIVE IMPACTS

Cumulative impacts are the impacts of a proposed project when considered in conjunction with the impacts of past, present, and probable future projects producing related impacts, as required by Section 15130 of the California Environmental Quality Act Guidelines (CEQA Guidelines). Other past, present, and future projects that would contribute to environmental impacts of the proposed project are referred to as “related projects.”

The CEQA Guidelines require that cumulative impacts be analyzed in an EIR. As set forth in the CEQA Guidelines (14 CCR Section 15130[b]), “the discussion of cumulative impacts must reflect the severity of the impacts, as well as the likelihood of their occurrence; however, the discussion need not be as detailed as the discussion of environmental impacts attributable to the project alone. The analysis should be guided by the standards of practicality and reasonableness, and it should focus on the cumulative impacts to which the other identified projects contribute to the cumulative impact.”

As stated in CEQA Guidelines Section 21083(b)(2), a project may have a significant effect on the environment if “its effects are individually limited but cumulatively considerable.” According to the CEQA Guidelines Section 15355:

“Cumulative impacts” refer to two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts.

- (a) The individual effects may be changes resulting from a single project or a number of separate projects.
- (b) The cumulative impact from several projects is the change in the environment, which results from the incremental impact of the project which added to other closely related past, present, and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time.

Cumulatively considerable “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” (CEQA Guidelines, Section 15065[a][3]).

In addition, as per the CEQA Guidelines: “The mere existence of significant cumulative impacts caused by other projects alone shall not constitute substantial evidence that the proposed project’s incremental effects are cumulatively considerable.”

There are two primary goals for a cumulative impact analysis:

- ▶ first, to determine whether the overall long-term impacts of all such related projects, when considered together, would be cumulatively significant; and
- ▶ second, to determine whether the project itself would cause a “cumulatively considerable” (and thus significant) incremental contribution to any such cumulatively significant impacts. (See CEQA Guidelines, Sections 15130[a]-[b], Section 15355[b], Section 15064[h], and Section 15065[c]).

In other words, the required analysis intends to first create a broad context through which to assess the project’s incremental contribution to anticipated cumulative impacts, viewed on a geographic scale beyond the project site itself, and then to determine whether the project’s incremental contribution to any significant cumulative impacts from related projects is itself significant (i.e., “cumulatively considerable” according to CEQA).

5.1.1 CUMULATIVE CONTEXT

CEQA Guidelines, Section 15130(b)(1), identifies two approaches to analyzing cumulative impacts. The first approach is the “list approach,” in which a list of past, present, and probable future projects producing related or cumulative impacts is considered for analysis. CEQA Guidelines, Section 15130(b)(1)(A). The second approach is the “summary of projections” approach (also known as the “plan” approach), whereby projections contained in adopted local, regional or statewide plans, or planning documents that evaluate conditions which could contribute to cumulative effects are summarized. CEQA Guidelines, Section 15130(b)(1)(B).

Cumulative analyses included in this EIR are based on an understanding of anticipated growth within the region that would affect the severity of project impacts identified in this EIR, based on adopted plans. In addition, to further enhance the cumulative analysis, major projects occurring within the vicinity of the project site have been considered, as described below. Using both the plan approach and list approach provides the most comprehensive set of land use change that could contribute to potential cumulative effects.

RELATED PLANS

The planning documents that establish the cumulative context for the proposed project include the Sacramento Area Council of Governments (SACOG) 2036 Metropolitan Transportation Plan/Sustainable Communities Strategy (MTP/SCS) (SACOG 2016), the Sacramento County General Plan (County General Plan) (Sacramento County 2011), the City of Sacramento General Plan (City General Plan) (City of Sacramento 2015a), and the North Natomas Community Plan (City of Sacramento 2015b). The Natomas Basin Habitat Conservation Plan provides background related to biological resources. The following discussion provides a brief overview of these planning documents.

2036 Metropolitan Transportation Plan/Sustainable Communities Strategy

In 2016, SACOG approved the 2036 MTP/SCS, which is a regional transportation plan and land use strategy designed to support good growth patterns, including (SACOG 2016):

- ▶ Increased housing and transportation options;
- ▶ Inwardly-focused growth and improved economic viability of rural areas;
- ▶ Minimized direct and indirect transportation impacts on the environment;
- ▶ A transportation system that delivers cost- effective results and is feasible to construct and maintain;
- ▶ Effective connections between people and jobs;

- ▶ Improved opportunities for businesses and citizens to easily access goods, jobs, services, and housing; and
- ▶ Real, viable choices for methods of travel.

The MTP/SCS built on the foundation provided by the Blueprint project and includes a land use strategy to improve mobility and reduce travel demand from passenger vehicles by prioritizing compact and transit-oriented development, reducing the growth in vehicle miles traveled (VMT) and associated GHG emissions. The MTP/SCS also includes projections for the location of growth within the region, between jurisdictions and among housing place types (i.e., infill and greenfield development). The growth projections were vetted with economic, demographic and housing market forecasters in the private and public sectors, all of whom concluded that SACOG's projections were within a range of reasonableness and that many of the assumptions were consistent with their own (SACOG 2016).

Developed acreage in the region is forecast to increase by 7 percent between 2012, the baseline year for the MTP/SCS, and 2036, the MTP/SCS planning horizon. This 7-percent increase in developed acreage contrasts with an anticipated increase in housing units of 32 percent and an increase in jobs of 49 percent, indicating that new development could accommodate jobs and population on relatively less acreage.

SACOG estimates that approximately 90,850 housing units and 6,651 housing units could be developed in unincorporated Sacramento County and the City of Sacramento, respectively, by 2036.

SACOG has begun the process to update its MTP/SCS. Currently, SACOG has updated greenhouse gas targets based on Senate Bill (SB) 375 and developed a draft land use scenario, transportation projects, and performance strategies. The next MTP/SCS is anticipated to be adopted by February 2020.

Sacramento County General Plan

On November 9, 2011, the Sacramento County Board of Supervisors adopted the Sacramento County General Plan (County General Plan) (Sacramento County 2011). The strategies of the County General Plan include a focus on economic growth and environmental sustainability, addressing the issues and needs of existing communities, and establishing a new framework for accommodating the growth of new communities based on smart growth principles. The County General Plan emphasizes planning for new development that is more compact, transit oriented, and features a mix of uses in order to implement the Blueprint project's principles and the regional community's desired growth pattern. In addition, the County General Plan is intended to implement a number of key programs consistent with the Blueprint's vision, including commercial corridor planning, redevelopment and revitalization efforts, strategic infill development in existing communities, and multi-modal transportation system enhancements.

City of Sacramento General Plan

The City General Plan was adopted by the City Council on March 3, 2015. The City General Plan contains goals, policies, and implementation programs related to land use and urban design; historic and cultural resources; economic development; housing; mobility; utilities; education, recreation, and culture; public health and safety; environmental resources; and environmental constraints.

The City General Plan's goals, policies, and implementation programs are intended to strengthen and diversify the economy by building on the skills of the workforce and providing a broad range of jobs in all industry sectors;

provide walkable streets, extensive tree canopy, range of housing choices, mixed use neighborhood centers, great schools, parks and recreation facilities, and easy access to Downtown and jobs; link the City to the rest of the region by an extensive, efficient, and safe network of roadways, bridges, mass transit, bikeways, pedestrian trails, and sidewalks; link the City to the rest of California and the world by an international airport, conventional and high-speed passenger rail, interstate highways, and high-speed communication systems; protect its historic and cultural resources and its natural environment; increase access to its riverfront and open spaces for the enjoyment of its growing population; promote the health and well-being of the community and plan for the long-term safety of its citizens; and model sustainable development in its planning, its use of urban heat island reduction measures, and its conservation of energy, water, and other natural resources.

Ten community plans are included in the 2035 General Plan: Arden Arcade, Central City, East Sacramento, Fruitridge Broadway, Land Park, North Natomas, North Sacramento, Pocket, South Area, and South Natomas. Community plan policies supplement citywide goals and policies of the City General Plan and address issues or conditions unique to the community plan area..

The City has defined five Special Study Areas that are adjacent to existing City limits: Arden Arcade, East, Fruitridge Florin, Natomas Joint Vision Study Area, and Town of Freeport.¹ These unincorporated areas are of interest to the City, as the planning of the areas necessitates a coordinated effort by the City and County.

The City of Sacramento will begin the process to update its general plan in late 2018. The 2040 General Plan will adoption of an element and/or policies to address social equity, environmental justice, and community resilience; an updated Climate Action Plan (per SB 375); updated Community Plans; identification of Transit Oriented Development policies and implementation measures; identification of ways to accommodate the new SACOG growth allocation; and policies to climate change, adaptation, and resiliency (per SB 379).

North Natomas Community Plan

The North Natomas Community Plan was adopted by the City of Sacramento on March 3, 2015. The North Natomas Community Plan Area is approximately 9,001 acres located in the northwest portion of the City of Sacramento. The Community Plan Area consists of approximately 7,440 acres in the City limits and 1,561 acres in unincorporated Sacramento County. The southern edge of the community is approximately 3 miles from Downtown Sacramento and the northwestern edge is approximately 2.5 miles from the Sacramento International Airport. The community is bounded by Elkhorn Boulevard on the north, I-80 on the south, the Natomas East Main Drainage Canal on the east, and the West Drainage Canal, Fisherman’s Lake, and Highway 99 on the west (City of Sacramento 2015b).

The North Natomas Community Plan envisions an urban form for North Natomas that includes a well-integrated mixture of residential, employment, commercial and civic uses, interdependent on quality transit service and a radial network of connections linking activity centers with streets, transit routes, and linear parkways with pedestrian/bike trails.

The North Natomas Community Plan stated a new high school would be required west of Interstate 5 to serve students generated by new housing and identified potential sites, including the project site. As discussed in Chapter 2, “Project Description,” the project site was originally envisioned as a high school. However, NUSD’s

¹ Sacramento County is now exclusively directing the Vision Plan and is currently focused only on the North Precinct Master Plan portion of the overall Vision Plan area.

increasing enrollment and overcrowding of elementary and middle schools within the vicinity of the project site has resulted in the need for a new elementary/middle school to accommodate existing students and to accommodate population growth.

North Natomas Community Plan Existing and Future Development

The North Natomas Community Plan designates 2,753 acres for residential uses that are estimated to accommodate approximately 28,429 single-family and multi-family dwelling units (City of Sacramento 2015c). To date, approximately 14,100 single-family and 7,000 multi-family dwelling units have been constructed (City of Sacramento 2013a, 2013b, 2015c).

Retail and commercial designated land comprises approximately 618 acres in North Natomas. Approximately 3 million square feet have been constructed, and there is the potential for construction of an additional 3 million square feet. Existing retail centers include the Promenade (651,200 square feet), Natomas Market Plan (501,100 square feet) the Town Center (126,500 square feet), and the Park Place (371,150 square feet) (City of Sacramento 2015c).

Employment centers, office, and light industrial designated lands comprise approximately 649 acres in North Natomas, with substantial concentrations along Interstate 5 (I-5). Approximately 3 million square feet of employment centers have been constructed and there is the potential for construction of an additional 7 million square feet of employment centers (City of Sacramento 2015c).

Natomas Unified School District Facilities Master Plan

The Natomas Unified School District (NUSD) Board of Trustees adopted the Master Plan on June 25, 2014 and updated the Master Plan on December 13, 2017 (NUSD 2017a). The comprehensive facilities master plan provides a roadmap and vision of school sites 10–15 years into the future; estimates the overall costs of immediate repairs and upgrades and expanding, and transforming school sites; identifies new school sites throughout the NUSD; and outlines the needs and amounts for future potential funding (NUSD 2014, NUSD 2017a).

As shown in Table 5-1, shows the historic and projected elementary and middle school enrollment from 2010 to 2020. Between the 2017-2018 school year and 2019-2020 school year, elementary and middle school enrollment is projected to increase by 14 percent and 4 percent, respectively NUSD has been taking steps to address its current overcrowding, converting elementary schools to K-8 schools, adding facilities, and adjusting boundaries. The 2017 Facilities Master Plan projections show a total of 13,331 students by the 2020/2021 school year (2017a). The facility master plan indicates a need for facilities upgrades for several schools, a new middle school and a permanent site for Natomas Gateways Middle School, buying new property and building additional elementary schools, the new Paso Verde K-8 school, a new high school, and other activities to meet educational, technology, teaching, and capacity needs.

School	2010-2011	2011-2012	2012-2013	2014-2015	2015-2016	2016-2017	2017-2018 ¹	2018-2019	2019-2020
Elementary	5,822	5,617	5,601	5,798	5,846	5,850	5,244	5,833	5,996
Middle	947	938	780	1,095	1,392	1,414	1,088	1,094	1,128
High	3,066	2,913	2,788	2,829	2,899	2,974	3,284	3,325	3,483

Note: ¹Actual 2017-2018 total enrollment
Source: California Department of Education 2018; NUSD 2014

Natomas Basin Habitat Conservation Plan

The Natomas Basin Habitat Conservation Plan (NBHCP) was submitted to the U.S. Fish and Wildlife Service (USFWS) and California Department of Fish and Wildlife (CDFW) in support of an application for a federal permit under Section 10(a)(1)(B) of FESA and a state permit under Section 2081 of the California Fish and Game Code. USFWS and CDFW subsequently approved the NBHCP, developed implementing agreements, and issued ITPs to the City of Sacramento, Sutter County, and The Natomas Basin Conservancy (TNBC).

The NBHCP is a regional conservation plan for mitigating impacts on covered species from covered activities carried out by the permittees over the 50-year term of the ITPs. The primary goal of the NBHCP is to create a system of habitat reserves that would support giant garter snake, Swainson’s hawk, and the other 20 species covered under the plan. TNBC manages these reserves, which serve as mitigation lands for covered activities carried out in the Permit Areas. The NBHCP provides coverage for TNBC activities in Sacramento County related to management of these conservation lands. The NBHCP does not provide incidental take permit coverage for development in the unincorporated portions of Sacramento County within the Natomas Basin.

The project site is within the Plan Area of the NBHCP, which is the entire 53,537-acre Natomas Basin; however, the provisions of the NBHCP do not apply to development projects outside the permit areas in the city of Sacramento or Sutter County. Neither NUSD nor Sacramento County are permittees under the NBHCP and do not have incidental take coverage under the Plan.

RELEVANT PROJECTS

The list of related past, present, and reasonably foreseeable future projects used for this cumulative analysis includes development projects expected to occur in the city of Sacramento, established by the City’s General Plan and North Natomas Community Plan, and other potential development projects in unincorporated Sacramento and Sutter Counties.

The projects listed in Table 5-2 are not intended to be an all-inclusive list of projects in the region, but rather an identification of larger projects approved or planned in the region that may affect the same resources (i.e., air quality, biological resources, greenhouse gas [GHG], and traffic) or rely on the same public service and utility providers as the proposed project.

5.1.2 GEOGRAPHIC SCOPE

The geographic area associated with an environmental resource analysis may vary depending on the type of environmental issue considered. Issues considered in a more local context (*i.e.*, construction noise, public

**Table 5-2.
Related Projects in the City of Sacramento and Sacramento and Sutter Counties**

Project Name	Location	Status	Dwelling Units	Commercial/ Office/ Industrial Area (either building square footage or acreage)
City of Sacramento				
Greenbriar ¹	West of SR 99 and north of I-5	Approved	2,922	319,000 square feet
Panhandle	North of Del Paso Road, south of West Elkhorn Boulevard. Approximately 7,400 acres in the City limits and 1,600 acres in unincorporated Sacramento County.	Proposed	1,623	189 acres
North Natomas Community Plan Area within the City of Sacramento²				
Westlake	North of Del Paso Road, south of I-5, and west of El Centro Road. North/northeast of the project site.	Approved/ under construction	158	34,500 square feet
Natomas Central	South of Del Paso Road and west of El Centro Road. Adjacent to the southern border of the project site.	Approved/ under construction	1,653	403,500 square feet
Northborough	North of Park Drive, south of West Elkhorn Boulevard, east of Northborough Drive, and west of Natomas Boulevard.	Approved/ under construction	456	119,000 square feet
Creekside/Natomas Creek	South of West Elkhorn Boulevard, north of Del Paso Road, east of SR 99 and East Commerce Way, and west of Northborough Drive.	Approved/ under construction	1,164	90,900 square feet
Natomas Place	South of Del Paso Road, north of the Natomas East Main drainage canal, east of Gateway Park Boulevard.	Approved/ under construction	810	306,000 square feet
Natomas Field/Natomas Crossing	South of Arena Boulevard, north of I-80, west of Truxel Road, east of I-5, and west of the Natomas East Main drainage canal.	Approved/ under construction	956	1.6 million square feet
Del Paso/Arena Corporate Center	South Del Paso Boulevard, north of Arena Boulevard, east of East Commerce Way, and west of Truxel Road.	Approved/ under construction	240	2.2 million to 2.3 million square feet
Commerce Station	South of the I-5/SR 99 interchange, north of Del Paso Boulevard, east of I-5, and west of East Commerce Way.	Approved/ under construction	321	2.7 million square feet
Gateway West	South of Del Paso Boulevard, north of San Juan Road, east of El Centro Road, and west of I-5.	Approved/ under construction	344	575,650 square feet
Sacramento County				
Metro Air Park	North of I-5 and east of the Sacramento International Airport.	Approved	--	1,550 acres
North Precinct Master Plan	North of Elkhorn Boulevard, south of the Sacramento/Sutter County line, and east of SR 99.	Proposed	20,477	703 acres
Sutter County				
Sutter Pointe Specific Plan	North of the Sacramento/Sutter County line and either side of SR 99.	Approved	17,500	49.7 million square feet
Notes: I-5 = Interstate 5; I-80 = Interstate 80; SR 99 = State Route 99				
¹ Reflects the proposed modifications to the original approvals.				
² The total dwelling units and commercial/office/industrial square footage reflects only the remaining number of dwelling units and commercial/office/industrial development that is planned or approved but not constructed within each Planned Unit Development.				
Source: City of Sacramento 2012a, 2012b, 2013a, 2013b, 2016, 2017a, and 2017b; Sacramento County 2016				

services) are not addressed in a greater regional context because the impacts associated with these activities/resources generally occur in close proximity to the project site. However, the cumulative effects analysis for other environmental resources includes a larger area, when appropriate. For example, the regional context of transportation, air quality, and GHG emissions issues considers the potential effects of projects occurring in surrounding counties and cities. The regulatory context for GHG emissions impacts is at the State level, while the impacts of climate change occur at the global scale. Analysis related to public services and utilities considers the potential effects of projects that would rely on the same service providers as the proposed project.

Table 5-3 presents the general geographic areas associated with the different environmental topics addressed in this EIR.

Table 5-3. Geographic Scope of Cumulative Impacts	
Issue Area	Geographic Area
Aesthetics	Within the viewshed of, and that includes the project site
Agricultural Resources	Sacramento County and regionally
Air Quality	Sacramento Valley Air Basin
Biological Resources	Project site and surrounding areas corresponding with affected species and habitat and the Natomas Basin for relevant species
Cultural Resources	Project site and surrounding areas, as well as individual archeological and historic project sites within California
Geology, Soils, Minerals, and Paleontological Resources	Individual ground disturbance sites. For paleontological resources, the significance of potential finds is considered in the context of California
Greenhouse Gas Emissions	Global effects, with the regulatory context and cumulative considerable levels established at the state level
Hazards and Hazardous Materials	Project site and surrounding areas
Hydrology and Water Quality	Project site and surrounding areas downstream from project site
Land Use, Planning, Population, and Housing	City of Sacramento and Sacramento County
Noise and Vibration	Sensitive uses along studied roadway segments and adjacent land uses. Construction noise is limited to the project site and would not be compounded with other known adjacent projects that will be under construction at the same time.
Public Services, including Recreation	Sacramento Fire Department, Sacramento County Sheriff's Department, and City of Sacramento Youth, Parks, and Community Enrichment Department
Transportation and Traffic	Roadways affected by project traffic
Utilities and Service Systems	City of Sacramento, Sacramento Area Sewer District (formerly known as County Sanitation District-1), Sacramento Regional County Sanitation District (SRCSD), and Kiefer Landfill service area
Energy	Sacramento Metropolitan Utility District and Pacific Gas and Electric Company. The wasteful and inefficient use of energy is considered in the context of California.
Source: Data compiled by AECOM in 2018	

5.1.3 CUMULATIVE IMPACT ANALYSIS

AESTHETICS

Currently, the project site consists of grasses cultivated for hay. Implementation of the project would include development of the project site with school facilities and associated infrastructure, including buildings, outdoor sports fields, parking areas, and a new access road. After development, visual conditions at the project site would be similar to views of existing urban development to the east and south. Views of the project site from nearby roadways, public properties, and private properties would be substantially altered as agricultural land is replaced by public institutional development.

Nearby planned or approved developments in City of Sacramento to the east and south would in the future and already have changed the existing visual character of the vicinity of the project to the east and south. As development of these projects and other development proceeds in surrounding areas, substantial changes in visual conditions would continue as open viewsheds are replaced by developed properties. Increased development would lead to increased nighttime light and glare in the region and more limited views of the night sky and sky glow effects, and would, in this way, change the rural nature of the area. The effect of these changes, when considering the related projects, on aesthetic resources from past and planned future projects is a **cumulatively significant** impact.

Assessment of visual quality is a subjective matter and reasonable people may differ as to the aesthetic value of the undeveloped lands on the project site, and whether development of school uses would constitute a substantial degradation of the existing visual character or quality of the site and its surroundings. Although the project will require school design approval from the California Department of Education/Division of State Architect (per California Education Code Section 17213), there is no mechanism to allow implementation of the project and related cumulative projects while avoiding the conversion of currently undeveloped land for school use. There is no feasible mitigation that would allow development of this project and avoid this cumulatively considerable contribution to this significant cumulative impact to existing views and visual character. The impact is **cumulatively significant and unavoidable**.

With implementation of Mitigation Measure 3.1-2 addressing light and glare, impacts of the proposed project would be reduced to the maximum extent feasible. Although the nighttime security lighting at the project site would contribute to existing nighttime lighting in the project area, it would be a minor contribution to the existing nighttime lighting already produced by adjacent urban development. Therefore, the project's light and glare impacts are **not cumulatively considerable**.

AGRICULTURAL RESOURCES

Past, present, and future projects throughout the region have, and will continue to convert existing agricultural land to other uses – predominantly urban use. This includes planned and approved development within the Greenbriar, Commerce Station, and Metro Air Park project sites. In addition to these local development projects, there is the Sutter Pointe Specific Plan project in Sutter County and additional development projects throughout the Central Valley that are contributing to the cumulative loss of agricultural resources, including Prime Farmland, Farmland of Statewide Importance, and Unique Farmland. Continued urbanization of the region in accordance with applicable land use plans, as well as those approved and proposed development projects described previously, would continue to convert agricultural and open space land to urban uses with residential

and commercial buildings and associated roadways and other infrastructure. The continued conversion of farmland in the region is a **significant cumulative** impact.

The Department of Conservation estimated that Sacramento County had 360,657 acres of agricultural land in 2016, of which 207,483 acres were identified as Important Farmland and 153,174 acres were identified as Grazing Land. Overall, the total acreage of Important Farmland decreased by approximately 4 percent over the 10 years between 2006 and 2016 and the total acreage of agricultural land decreased by 3 percent. The Sacramento County Important Farmland map, published by Department of Conservation's Division of Land Resource Protection, designates the entire project site as Farmland of Local Importance, and the proposed project, including development of the school facilities, the primary access road, and bicycle and pedestrian facilities, would result in the permanent conversion of 18 acres of this type of farmland.² In 2016, approximately 57,910 acres of Farmland of Local Importance existed in Sacramento County. As shown in Table 3.2-1 in Section 3.2, "Agricultural Resources," the acreage of Farmland of Local Importance increased by 38 percent between 2006 and 2016. During the most recent update cycle (2014-2016), the acreage of Farmland of Local Importance decreased by 2 percent.

Historically, the site was used for agricultural crop production including wheat, barley, and rice. The last year of rice production was 2002. In 2006 and 2007, the site was in wheat production. Since the site has been owned by the school district, grass hay (oat and rye) has been grown on the site, and it has been cut periodically. The conversion of approximately 18 acres of Farmland of Local Importance would account for less than one percent of the total Farmland of Local Importance in Sacramento County as a whole.

Furthermore, the proposed project would not result in the indirect conversion of Important Farmland. TNBC's Rosa East tract is designated as Prime Farmland. The TNBC lands, including agricultural land, are managed in perpetuity for the benefit of the Swainson's hawk and certain other habitat conservation plan covered species. In addition, pesticide use on TNBC lands would not result in conflicts with school uses. TNBC strictly controls the use of pesticides on mitigation land and rarely allows pesticides to be used (TNBC 2004). All TNBC-directed pesticide use is under the direction of licensed Pest Control Applicators and applications are made in compliance with the label restrictions approved by California Department of Pesticide Regulation and U.S. Environmental Protection Agency (see Section 3.8, "Hazards and Hazardous Materials," for further discussion). In addition, TNBC does not use pesticide applications (i.e., crop dusters, air blaster spraying, chemigation sprinklers, or dust and powder pesticides) that are subject to regulations identified in Sections 6690-6693 of the California Code of Regulations. A 25-foot buffer is required for the pesticide applications used at TNBC property across the West Drainage Canal from the proposed school site. TNBC does not use aerial application, but instead a ground-rig sprayer with liquid that does not include dust, powder, or fumigant (Roberts, pers. comm., 2018). The annual reporting requirements Sections 6692 of the California Code of Regulations may apply, as well.

For the reasons described above, the proposed project **would not result in a cumulatively significant incremental contribution** to this significant cumulative impact.

² Farmland of Local Importance is land of importance to the local economy, as defined by each county's local advisory committee and adopted by its Board of Supervisors. Sacramento County defines Farmland of Local Importance as lands which do not qualify as Prime, Statewide, or Unique designation but are currently irrigated crops or pasture or nonirrigated crops; lands that would be Prime or Statewide designation and have been improved for irrigation but are now idle; and lands which currently support confined livestock, poultry operations, and aquaculture.

AIR QUALITY

Air quality is inherently a cumulative impact, as current emission levels and attainment status are a result of past and present projects. Sacramento County is designated as nonattainment for the State standards for Ozone (O₃), particulate matter with aerodynamic diameter less than 10 microns (PM₁₀), and particulate matter with aerodynamic diameter less than 2.5 microns (PM_{2.5}). Each additional project within the Sacramento Valley Air Basin (SVAB) has the potential to cause a net increase in emissions that would contribute to this **significant cumulative** air quality impact.

Construction activities throughout the region would emit criteria air pollutants from earthmoving activities and construction equipment. The operation of past, present, and future projects would contribute criteria air pollutant and precursor emissions to the region that, when added to the other emissions occurring within the region, collectively could cause an exceedance of federal or State air quality standards. The Sacramento Metropolitan Air Quality Management District (SMAQMD) considers projects that would generate air quality emissions that exceed applicable thresholds of significance to also be cumulatively considerable (SMAQMD 2016 p.8-1).

Construction

Ground-disturbing activities, exhaust emissions, building construction, asphalt paving, and application of architectural coatings generate criteria air pollutants and ozone precursors. Construction-related emissions would vary throughout the buildout of the project, depending on construction phases. As noted above, SMAQMD thresholds are used as a proxy for determining whether impacts would be cumulatively considerable. As discussed in Impact 3.3-1, construction-related emissions could exceed the SMAQMD-recommended threshold of significance for oxides of nitrogen (NO_x), an ozone precursor. While construction-related emissions would not exceed SMAQMD-recommended thresholds of significance for particulate matter (PM), SMAQMD recommends that all construction projects implement SMAQMD's Basic Construction Emission Control Practices (SMAQMD 2010). Implementation of Mitigation Measure 3.3-1a would ensure compliance with SMAQMD recommendations to implement SMAQMD Basic Construction Emission Control Practices (SMAQMD 2010) and minimize PM emissions. In addition, implementation of Mitigation Measures 3.3-1b and 3.3-1c reduce NO_x emissions to below the SMAQMD-recommended threshold of significance, as shown in Table 3.3-4. Therefore, with implementation of Mitigation Measures 3.3-1a through 3.3-1c, the proposed project's construction-related emissions would be less than significant and the contribution to this significant cumulative impact would be **less than cumulatively considerable**.

Operation

As discussed in Impact 3.3-2, operational emissions associated with the proposed project would not exceed SMAQMD-recommended thresholds of significance for any pollutants. Therefore, the contribution of the proposed project's operational emissions to this significant cumulative impact would be **less than cumulatively considerable**.

Toxic Air Contaminants

Short-Term Construction Emissions and Exposure to TACs at Surrounding Land Uses

Construction activities generate diesel particulate matter (DPM) emissions from the use of off-road diesel-powered equipment required for site grading and excavation, paving, and other construction activities. These

activities may expose nearby receptors to toxic air contaminant (TAC) emissions. The two construction projects planned adjacent to the project site are the Westlake and Natomas Central Planned Unit Developments of the North Natomas Community Plan Area. Westlake is east-northeast of the project site and Natomas Central is adjacent to the southern perimeter of the project site.

Development within Westlake has already been completed within the portion of the development area that is adjacent to the proposed project and any ongoing construction activities would not take place adjacent to the proposed project. Natomas Central is located opposite Del Paso Road from the proposed project site. Several dwelling units associated with this development are being constructed along the southern side of Del Paso Road. There could be an overlap of construction activities associated with this development and the proposed project, and this development could also result in the presence of new sensitive receptors within these residential units. However, the only construction activities associated with the proposed project in the vicinity of Del Paso Road are the frontage and access road improvements, which would be temporary in nature. The majority of construction activities would be associated with the school facilities, located at the northern side of the project site, at the northern end of the 2,200 foot access road that is perpendicular to Del Paso Road. School construction is temporary, also.

Receptor dose is the primary factor used to determine health risk and is a function of exposure concentration and duration. However, even in intensive phases of construction, there would not be substantial pollutant concentrations, with the potential exception of the immediate vicinity of the construction site, as concentrations of mobile-source DPM emissions are typically reduced by approximately 60 percent at a distance of around 300 feet (100 meters) (Zhu and Hinds 2002). In addition, wind has been shown to be an important determining factor in the distribution of DPM. In the region of the project site, the prevailing winds are northward, thereby typically carrying DPM away from sensitive receptors in the vicinity of the project site (Iowa State University 2018).

Health effects from TACs are often described in terms of individual cancer risk, which is based on a 30-year lifetime exposure to TACs (OEHHA 2015). Construction activities for the proposed project are anticipated to last approximately 12 to 18 months and would cease following completion of the proposed project. Even during this period of time, construction activities would vary in activity and equipment intensity, and would take place throughout the entirety of the project site, the majority of which is over 2,200 feet (670 meters) from the Natomas Central Planned Unit Development. Individual receptors would not be exposed to construction-related TAC emissions from the proposed project for longer than 12 to 18 months and likely less. If the duration of construction activities near a sensitive receptor was for the entirety of 12 to 18 months, which is not anticipated, then the exposure would be less than five percent of the total exposure period used for typical health risk calculations (i.e., 30 years).

Because the construction activities that could result in TAC emissions would be temporary, in combination with the dispersive properties of DPM and prevailing winds being directed away from nearby development projects, potential planned adjacent construction projects would not combine with project-related TAC emissions in such a way that any significant cumulative impact could occur. There is **no significant** cumulative impact.

Land Use Compatibility and Exposure to TACs from Nearby Land Uses

Mobile source emissions associated with freeways and major roadways produce TACs that could adversely affect adjacent sensitive receptors. Mobile source emissions associated with freeways and major roadways produce TACs that could adversely affect adjacent sensitive receptors. As noted in SACOG's RTP/ SCS EIR, the health

effects for people living adjacent to high-volume roadways was potentially significant (SACOG 2015). Mitigation measures were proposed to decrease the exposure of sensitive receptors to TACs; however this impact will not be reduced to a less-than-significant level (i.e., remain significant and unavoidable). Within the context of the projected growth described in the RTP/SCS, this is a **significant cumulative** impact.

To help provide information on land use compatibility and TAC sources, ARB published the Air Quality and Land Use Handbook: A Community Health Perspective in 2005 (ARB 2005). The handbook offers advisory recommendations for the siting of sensitive receptors near sources of TACs. The handbook recommends locating sensitive uses at least 500 feet from a freeway, urban road carrying 100,000 vehicles or more per day, and rural roads carrying 50,000 vehicles or more per day based on studies showing a 70-percent drop-off in particulate pollution levels at 500 feet (ARB 2005).

As noted in the Transportation and Traffic section below, the portion of Del Paso Road between I-5 and East Commerce Way is anticipated to carry approximately 45,625 vehicles per day in 2035 (see Table 5-5). There are no urban roads carrying 100,000 vehicles per day or rural roads carrying 50,000 per day in the broader vicinity that would be expected to handle this level of traffic in 2035. The proposed project is anticipated to generate a total of 2,034 daily trips, 952 of which would occur during the weekday AM peak hour and 815 of which would occur during the weekday PM peak hour (Table 3.13-13). These increased trips would most substantially affect the daily roadway volume of Del Paso Road between Hovnanian Drive and Natomas Central Drive; however, even with the increased trips from the proposed project, the daily roadway volume under cumulative plus project conditions would only be 8,015 vehicles per day on this four-lane roadway segment. There is **no significant** cumulative impact. Given proposed project's contribution to area roadways, the proposed project would have a **less than cumulatively considerable** contribution to the cumulative impact of exposing sensitive receptors to substantial pollutant concentrations of TACs.

Odors

Odor impacts are generally localized and do not combine with odor impacts in nearby areas to increase the severity of impacts. Because odor emissions from various land uses differ in nature, these emissions would not cumulatively contribute to each other to expose nearby receptors. There is **no significant** cumulative impact.

During construction activities, exhaust odors from diesel engines and emissions associated with asphalt paving and the application of architectural coatings may be considered offensive to some individuals. However, because the prevailing wind direction is northward of the nearby residents, as well as the fact that odors would be temporary and disperse rapidly with distance from the source, construction-generated odors would not result in the frequent exposure of receptors to objectionable odor emissions. Therefore, this impact would be **less than cumulatively considerable**.

In addition, the operation of schools is not typically considered to be a source of objectionable odors. The proposed project may include minor sources of odors, such as the operation of landscaping equipment and cooking for the cafeteria, which would take place only intermittently each day. In addition, surrounding land uses, including residential and agricultural, are not anticipated to expose sensitive receptors at the project site to objectionable odors from off-site. Due to the intermittent nature of the minor sources of odor and lack of operation of any facilities typically considered to be substantial sources of objectionable odors, the impact of exposing sensitive receptors to substantial odors is **less than cumulatively considerable**.

BIOLOGICAL RESOURCES

Past and present actions by humans have substantially altered biological resources in the Central Valley region of California including Sacramento County, specifically, compared to historical conditions. Among the most important of these past actions have been conversion of natural vegetation and habitats to agricultural and developed land uses; fill and alteration of aquatic habitats; flood control and water supply projects; and the introduction of nonnative species, which in many cases have competed with, preyed upon, and degraded habitat for native species. More recently, the large-scale conversion of agricultural habitats to urban land uses has resulted in substantial loss of habitat for species, such as State-listed Swainson's hawk; the State- and federally-listed giant garter snake; and burrowing owl and western pond turtle, which use agricultural habitats in response to loss of their natural habitats, and are considered species of special concern by the California Department of Fish and Wildlife. Additionally, widespread habitat and hydrologic alteration in Central Valley streams and rivers has resulted in declines of federally threatened Central Valley steelhead. Further, these habitat and hydrologic changes also have resulted in declines of Central Valley fall-run and late fall-run Chinook Salmon, both of which are considered California species of special concern. Past, present, and foreseeable future urbanization in Sacramento County has contributed substantially to the loss of grassland, wetland, and agricultural habitats that are important to many species in the region, including listed species like Swainson's hawk, giant garter snake, burrowing owl, and western pond turtle. However, some projects, including construction of the NLIP Phase 4b project on the Pleasant Grove Creek Canal, Natomas East Main Drainage Canal, West Drainage Canal, and the American River, which is scheduled for completion in 2025 includes improvements to the West Drainage Canal that would be designed to provide benefits to some species including giant garter snake (USACE and SAFCA 2010). Nonetheless, past, present, and foreseeable urbanization and habitat alterations are a **significant cumulative** impact.

Fisherman's Lake and the West Drainage Canal provide suitable habitat for the giant garter snake and western pond turtle; Swainson's hawk could nest in trees in the area, including along the West Drainage Canal, and use area agricultural fields as foraging habitat; and burrows suitable for burrowing owls have been observed along a ditch along the eastern edge of the project site. The West Drainage Canal also provides potentially suitable habitat for Chinook Salmon and steelhead, although the likelihood of these species occurring in the project site is low. Construction activities and altered water quality resulting from increased discharge into the West Drainage Canal could result in impacts to special status fish and wildlife species and their habitats, including designated Essential Fish Habitat. However, mitigation measures, including implementing avoidance and minimization measures during construction, and meeting water quality requirements for the discharge into the West Drainage Canal, as described in Section 3.4, "Biological Resources" and Section 3.9, "Hydrology and Water Quality," would reduce these impacts to a less-than-significant level. The project's incremental contribution to the cumulative impact on biological resources in the region would be **less than cumulatively considerable with mitigation**.

CULTURAL RESOURCES

Sacramento County has been inhabited by prehistoric and historic peoples for thousands of years. Cultural resources in the region generally consist of prehistoric sites, historic sites, historic structures, and isolated artifacts. Urbanization and intensive agricultural use in the region has caused the destruction or disturbance of numerous prehistoric sites, while many structures now considered to be historic were erected. From the latter half of the 20th century to the present, prehistoric and historic structures have been disturbed and destroyed. During this period, regulations protecting cultural resources have substantially reduced the rate and intensity of these

impacts. However, even with these regulations, cultural resources are still degraded or destroyed as cumulative development in the region proceeds. This is a **significant cumulative** impact.

The proposed project, in combination with other development in the region, could contribute to the loss of significant cultural resources. Because all significant cultural resources are unique and non-renewable members of finite classes, all adverse effects or negative impacts erode a dwindling resource base. The loss of any one archaeological site affects all others in a region since these resources are best understood in the context of the entirety of the cultural system of which they are a part. The boundaries of an archaeologically important site extend beyond the project site. The cultural system is represented archaeologically by the total inventory of all sites and other cultural remains in the region. Federal, State, and local laws can protect these resources, in most instances.

The proposed project will include earthmoving activities and grading during on-site construction. As of 2016, there are no known historical resources or unique archaeological resources or human remains identified with the project site as a result of the cultural resource investigations. Although no cultural resources were identified at the project site, the potential for encountering buried cultural resources exists.

The area likely fluctuated between marshland and a shallow lake during prehistory and before reclamation occurred in the early 20th century. However, the general area may have served as a resource procurement area for prehistoric peoples and cultural resources may be present at or below the ground surface. The lack of previously recorded cultural resources and the lack of surface indications do not preclude the possibility that significant subsurface cultural resources could be inadvertently encountered and damaged during project construction.

Because cultural resources are non-renewable, any significant impacts to cultural resources have a cumulative effect on resources in the region. Implementing mitigation measures described in Section 3.5, “Cultural Resources,” will ensure that any cultural resources encountered during construction, including archaeological features, tribal cultural resources, or potential human remains, would be treated in an appropriate manner under CEQA and other applicable laws and regulations. Since the potential for an impact is low, and since the mitigation measures would further reduce the potential for an impact, the impact would be **less than cumulatively considerable with mitigation**.

GEOLOGY, SOILS, MINERALS, AND PALEONTOLOGICAL RESOURCES

Geology and Soils

The project site and related projects are located within the central portion of the Sacramento Valley. The geologic formations and soil types vary depending on project location, and therefore are site specific. Cumulative impacts on geology and soils would be less than significant due to the implementation of existing regulations and policies intended to manage geological hazards. Increases in population, jobs, buildings, and infrastructure cumulatively considered would create a corresponding increase in exposure to humans and structures to risks associated with seismic activity, expansive soils, and unstable ground. However, each individual project which would contribute to these increases in people and development must meet the requirements of the California Building Code; local ordinances; and land use plan policies, such as following best management practices and developing grading erosion control plans.

There are known faults in the vicinity of the project site that could result in seismic ground shaking. However, the project site is subject to these hazards and, depending on the location of the related projects, damage to structures could result from strong seismic ground shaking. In addition, the project site could be subject to expansive soils from causes other than seismic activity. Depending on the location of the related projects, damage to buildings from these same geologic and soils hazards could also occur. As discussed in Section 3.6, “Geology, Soils, and Paleontological Resources,” NUSD retained the services of Geocon (2018) to prepare a site-specific geotechnical report. The geotechnical report contains detailed recommendations for design and construction of proposed facilities at the project site, and would be used by the project engineer to design the school’s buildings and foundations and other structural elements (e.g., roadways, utilities) in compliance with the California Building Code. By complying with California Building Code requirements, incorporating the geotechnical engineer’s design recommendations as contained in the site-specific geotechnical report (Geocon 2018), and coordinating with Sacramento County for grading and site plan review and CDE review of geotechnical hazards, impacts from strong seismic ground shaking are considered less than significant. Therefore, the proposed project’s impact is **less than cumulatively considerable**.

Development and construction within the city, Sacramento County, surrounding counties, and the balance of the Sacramento Valley would involve grading and construction activities for development of residential and business uses, infrastructure, and road foundations, including vegetation removal, grading, staging, trenching, excavation, and other activities that would result in the temporary and short-term disturbance of soil and would expose disturbed areas to storm events. In addition, soil disturbance during summer as a result of construction activities could result in soil loss due to wind erosion. This is a **significant cumulative** impact.

Mitigation described in Section 3.6, “Geology, Soils, Minerals, and Paleontological Resources,” requires erosion and sediment control measures that could include the use of detention basins, berms, swales, wattles, and silt fencing, and covering or watering of stockpiled soils to reduce wind erosion. Construction of the proposed project and related projects will require development and implementation of Stormwater Pollutant Prevention Plans, as well. These measures would reduce short-term construction-related erosion impacts because grading and erosion control plans with specific erosion and sediment control measures would be prepared and implemented, and because a site-specific SWPPP with appropriate best management practices designed to maintain surface water quality conditions in adjacent receiving waters. In addition, the proposed project and related projects would comply with the State Water Resources Control Board and Central Valley Regional Water Quality Control Board’s National Pollutant Discharge Elimination System permits for construction activity. The proposed project’s impacts associated with construction-related erosion are **less than cumulatively considerable with mitigation**.

Paleontological Resources

Fossil discoveries resulting from excavation and earthmoving activities associated with development are occurring with increasing frequency throughout California. The value or importance of different fossil groups varies depending on the age and depositional environment of the rock unit that contains the fossils, their rarity, the extent to which they have already been identified and documented, and the ability to recover similar materials under more controlled conditions, such as part of a research project. Unique, scientifically important fossil discoveries are relatively rare, and the likelihood of encountering them is specific to each site and based on the type of specific geologic rock formations found underground. The loss of resources with development throughout the region is a **significant cumulative** impact.

The proposed project is located within Holocene (11,700 years B.P. and younger) deposits, which contain only remains of modern taxa and would not be considered unique paleontological resources. Therefore, project construction would have no impact on unique paleontological resources. **No cumulatively considerable** impact would occur.

GREENHOUSE GAS EMISSIONS

Greenhouse gas (GHG) emissions from past, present, and future projects create a significant cumulative impact. See the analysis provided in Section 3.7, “Greenhouse Gas Emissions,” which is a cumulative impact analysis.

HAZARDS AND HAZARDOUS MATERIALS

The health and safety impacts associated with a proposed project usually occur on a project-by-project basis, rather than cumulatively. Development associated with the proposed project and future development within the area could result in increased hazard-related impacts. As previously described, development would involve the storage, use, disposal, and transport of hazardous materials to varying degrees during construction and operation. The storage, use, disposal, and transport of hazardous materials are extensively regulated by various federal, State, and local agencies, and therefore construction companies and businesses (during the operational phase) that would handle any hazardous substances would be required by law to implement and comply with these existing hazardous-materials regulations. There is **no significant cumulative impact**.

Past, present, and future related project sites likely contain existing hazards materials (e.g., piles of debris, underground or aboveground storage tanks, septic systems, stained soils [indicating potential contamination], lead-based paints, asbestos-containing materials, or PCBs). However, if hazardous materials are encountered on site during construction of the related projects, the associated impacts would be localized to those projects and would not be additive to other hazardous materials-related impacts in the project site.

Construction workers could be exposed to unknown hazardous materials present on-site during construction activities and hazardous materials on-site could create an environmental or health hazard for later employees, students, and visitors, if left in place. Implementation of Mitigation Measure 3.8-2 included in Section 3.8, “Hazards and Hazardous Materials,” would reduce the potential for exposure of people or the environment to unknown hazardous materials to a less-than-significant level. There would be **no significant cumulative** impact.

HYDROLOGY AND WATER QUALITY

Local hydrology, drainage, and water quality conditions are often affected by regional activities, in addition to local activities and related projects. Past and present projects from the Sierra Nevada (dams and reservoirs, mining operations, logging, urban development) to the Sacramento–San Joaquin Delta (water supply diversions, agricultural diversions, flood control projects, urban development, river channelization) affect hydrology and water quality conditions in Sacramento County.

Construction activities associated with development of the project would create the potential for soil erosion and sedimentation of drainage systems, both within and downstream of the project site. The construction process may also result in accidental release of other pollutants to surface waters. Implementation of mitigation measures contained in Section 3.9, “Hydrology and Water Quality,” of this EIR would reduce this impact to a less-than-significant level by requiring preparation and implementation a stormwater pollution prevention plan with

appropriate BMPs, such as source control, revegetation, and erosion control, to maintain surface and groundwater quality conditions in adjacent receiving waters. Just as with the proposed project, related projects would be required to adhere to applicable requirements designed to prevent significant water quality impacts. Therefore, implementation of related projects **would not result in a cumulative impact**, and the project would result in a **less-than-cumulatively-considerable** incremental contribution to temporary, short-term construction-related water quality impacts.

Potential changes to the hydrologic and geomorphic processes in a watershed as a result of impervious surfaces and drainage infrastructure from urbanization include increased runoff volumes and dry weather flows, increased frequency and number of runoff events, increased long-term cumulative duration of flows, as well as increased peak flows. Hydromodification intensifies the erosion and sediment transport process, and often leads to changes in stream channel geometry, and streambed and streambank properties, which can result in degradation and loss of riparian habitat, and downgradient sediment deposition causing flooding problems. Implementation of mitigation measures contained in Section 3.9, “Hydrology and Water Quality,” of this EIR would reduce this impact to a less-than-significant level because NUSD would demonstrate compliance with applicable State and local regulations regulating surface water runoff, which are designed to meet applicable State and local regulations pertaining to stormwater runoff. Related projects would be required to meet similar requirements. Therefore, implementation of related projects **would not result in a cumulative impact**, and the project would result in a **less-than-cumulatively-considerable** incremental contribution to cumulative impacts associated with hydromodification.

Implementation of the project could change the long-term potential for contaminant discharges at the project site, and there is a potential for the project to cause or contribute to long-term discharges of urban contaminants (*e.g.*, oil and grease, fuel, trash, pesticides, fertilizer). Implementation of mitigation measures in Section 3.9, “Hydrology and Water Quality,” of this EIR would require the NUSD would develop and implement a BMP and water quality maintenance plan that would demonstrate compliance with applicable State and local regulations restricting surface water runoff. Water quality BMPs, such as vegetated swales, constructed wetlands, and infiltration trenches have been shown to be successful in controlling water quality and avoiding water quality impacts. Related projects would be required to meet similar requirements. Therefore, implementation of related projects **would not result in a cumulative impact**, and the project would result in a **less-than-cumulatively-considerable** incremental contribution to cumulative impacts from contaminant discharge.

The development of additional project-related impervious surfaces would reduce the amount of water available for local groundwater recharge. Landscape irrigation activities would occur with the transition of the project site to developed uses. Urban land uses result in application of water, in addition to precipitation, for outdoor use. A small portion of this water, although restricted by the soil conditions, reaches the aquifer as recharge. The on-site detention basin would permit excess runoff to percolate through the soil to the groundwater table. Approximately 15.5 acres of land available for groundwater recharge would be lost; however, given that the project site is entirely composed of hydrologic group C and D soils where very little groundwater recharge occurs under natural conditions, a **cumulatively significant impact would not occur**. Therefore, the proposed project would not result in a substantial interference with local groundwater recharge and the impact would be **less than cumulatively considerable with mitigation**.

LAND USE, PLANNING, POPULATION, AND HOUSING

Cumulative development within the region would result in a significant change in land use, and individual projects would need to be considered in context of their compliance with adopted land use plans. Plans with which compliance may be analyzed include general plans, habitat conservation plans, and regional transportation plans. For the proposed project, appropriate plans to consider include SACOG's MTP/SCS, the City's General Plan, and the County's General Plan. Land use inconsistencies are not physical effects in and of themselves and combinations of policy inconsistencies would not rise to the level of a physical effect. Cumulative effects of the physical changes related to the project are discussed in the other topics in this section. **No cumulatively considerable** impacts would occur beyond those fully addressed in the environmental-topic-specific sections of this chapter.

Like land use policy inconsistency, population growth is not considered a significant cumulative effect because it is not a physical environmental impact. However, the direct and indirect effects, such as housing and infrastructure needs that are related to population growth, can lead to physical environmental effects. As discussed in Section 3.10, "Land Use, Planning, Population, and Housing," and in Section 5.2, "Growth-Inducing Impacts," below, the proposed project would not involve constructing new homes or businesses that would directly generate new population growth. **No cumulatively considerable** impact would occur.

NOISE AND VIBRATION

When determining whether the overall noise (and vibration) impacts from related projects would be cumulatively significant and whether the project's incremental contribution to any significant cumulative impacts would be cumulatively considerable, it is important to note that noise and vibration are localized occurrences; as such, they decrease rapidly in magnitude as the distance from the source to the receptor increases. Therefore, only those related projects that are in the direct vicinity of the proposed project and those that are considered influential in regards to noise and vibration (e.g., not located where ambient conditions are dominated by airport, traffic noise from I-5 and projects relatively large in size) would have the potential to be considered in a cumulative context with the project's incremental contribution (e.g., approved development south of Del Paso Road in the Natomas Central area).

Implementation of the proposed would reduce construction-related noise by implementing noise reduction measures identified in Mitigation Measure 3.11-1 and by complying with both the City of Sacramento and Sacramento County noise ordinances. Compliance with applicable noise regulations and mitigation from environmental documents prepared for related projects would reduce construction-related noise impacts from other projects in the immediate vicinity of the project site. Construction projects occurring simultaneously would not result in cumulative impacts unless sites are being developed in close proximity to one another and expose sensitive receptors to significant noise levels at the same time. Because the closest proposed development – "Westlake" – located to the north/northeast of the project site north of Del Paso Road, south of I-5, and west of El Centro Road, is approximately 2,500 feet south of the project site and noise attenuates with distance, any construction occurring simultaneously would not be cumulatively considerable. Therefore, a **cumulatively significant impact would not occur**, and the proposed project would **not result in a cumulatively significant incremental contribution** to impacts associated with short-term construction-related noise.

Adding construction traffic to the local roadway network would result in increase in traffic noise levels in the vicinity of the project site. As stated in Section 3.11, "Noise and Vibration," the increased traffic volumes would

not result in a noticeable increase in traffic noise along roadways within and near the project site. Therefore, **no cumulatively considerable** impact associated with long-term increases in traffic noise levels would occur.

With respect to cumulative long term noise exposure for project users on-site, there are no known noise-generating projects (stationary and mobile sources) planned in the vicinity of the proposed project to expose the users on site to cumulatively excessive noise level. Therefore, **no cumulatively considerable** impact associated with long-term increases in noise levels would occur from future development in the vicinity of the proposed project.

PUBLIC SERVICES, INCLUDING RECREATION

Future development in Sacramento County and the incorporated cities within the county would increase demand for public services and recreation. In terms of cumulative impacts, appropriate service providers are responsible for ensuring adequate provision of public services within their service boundaries.

Public services would be provided by the Sacramento Fire Department (SFD), the Sacramento County Sheriff's Department, the Natomas Unified School District (NUSD), and City of Sacramento Youth, Parks, and Community Enrichment Department (YPCE). The following discussion analyzes the cumulative impacts on these service providers from implementation of the project and future, related projects within their respective service areas.

Fire Protection Services

SFD provides fire suppression services throughout the city of Sacramento and the Natomas and Pacific-Fruitridge Fire Protection Districts. The SFD has 24 active fire stations strategically located throughout its service area. New development within the SFD service area would increase demand for fire protection services and facilities, potentially resulting in the need for additional staff members, facilities, and equipment. Individual development projects would be required to assess impacts related to fire protection services during the environmental review process to ensure that the SFD has sufficient facilities and equipment to meet demand.

The proposed project would increase demand for fire protection services at the project site by development of school facilities on currently vacant land. The NUSD would be required to incorporate California Fire Code requirements into project designs, which address access road length, dimensions, and finished surfaces for firefighting equipment; fire hydrant placement; fire flow availability and requirements; and plan submittal requirements. Similarly, all individual development projects within the SFD service area would be required to incorporate California Fire Code into project designs. Incorporation of all California Fire Code requirements would reduce the dependence on fire department equipment and personnel by reducing fire hazards. Therefore, a **cumulatively significant impact would not occur**, and the proposed project would **not result in a cumulatively significant incremental contribution** to impacts related to increased fire protection services and facilities.

Police Protection Services

The project site is within the Sacramento County Sheriff's Department's North Division. The North Division is headquartered at 5510 Garfield Avenue, approximately 17 miles northeast of the project site. The North Division is currently staffed with 134 sworn officers and 19 support staff. It provides patrol functions to the communities of Carmichael, Fair Oaks, Gold River, Orangevale, Arden-Arcade, Foothill Farms, Antelope, North Highlands, Rio Linda, Elverta, and the Garden Highway.

New development within the Sacramento County Sheriff's Department service area would increase demand for police protection services and facilities, potentially resulting in the need for additional staff members, facilities, and equipment. Individual development projects would be required to assess impacts related to police protection services during the environmental review process to ensure that the Department has sufficient facilities and equipment to meet demand.

The proposed project would not increase the population as a result of new housing; therefore, the proposed project would not require additional Sacramento County Sheriff's Department staffing to maintain its officer-to-population service ratio. The project is required to meet the needs of existing students and it is not being developed in order to serve future housing or population. Given the type and scale, it is not expected that the proposed project would substantially increase the Sheriff's Department calls for service. Therefore, operation of the proposed project would not affect the Sacramento County Sheriff's Department performance objectives. Therefore, **no significant cumulative** impact would occur related to increased police protection services and facilities.

Public Schools

The proposed project would construct and operate a Kindergarten through 8th grade school in the NUSD. Between the 2017-2018 school year and 2019-2020 school year, elementary and middle school enrollment is projected to increase by 14 percent and 4 percent, respectively.

The proposed project would not increase the demand for or cause a shortfall of school services or facilities. The proposed project would not provide any new housing that generates students. Rather, the proposed project would meet the educational needs of up to approximately 1,000 NUSD elementary school students, meet NUSD's geographical needs for additional schools within its service boundary and west of I-5, and slow enrollment growth at nearby overcrowded elementary schools. Therefore, **no significant cumulative** impact would occur related to increased demand for school facilities and services.

Parks and Recreation

YPCE provides park services to the adjacent Westlake development, as well as south of the project site in the Natomas Central residential development. The City maintains a goal of providing a minimum of 5 acres of active use park land per 1,000 residents.

The proposed project would not increase the population in the project area as a result of new housing or employment opportunities. Therefore, the proposed project would not increase the use of existing neighborhood or community parks or require construction of new parks to meet the YPCE's parkland standard. In addition, the proposed project would not increase the use of existing neighborhood and regional parks or other recreational facilities. It is possible that there may be more use of the 10-acre Egret Park to the northeast of the project site with a pedestrian and bicycle connection, but students using this connection would likely already live in the Westlake residential development and use the park. Therefore, **no significant cumulative** impact would occur related to the increased demand for parks and recreation services.

TRANSPORTATION AND TRAFFIC

Implementation of the project, along with past, present, and future developments would generate vehicular trips. The environmental effects associated with the increase in travel demand include criteria air pollutants and toxic

air contaminants associated with vehicle trips, GHG emissions associated with increases in vehicle miles traveled, and transportation noise along local and regional roadways.

As with population growth, increase in travel demand in and of itself is not an adverse physical environmental impact. The environmental impacts are associated with the burning of fossil fuels necessary to power vehicles, the noise made by engines and interaction with the roadway, and other physical outcomes of an increase in travel demand – both during construction and operational phases. The increase in travel demand associated with buildout of the project is comprehensively analyzed and feasible mitigation identified in the body of this EIR. A regional traffic model was used to analyze impacts of the project, along with projected regional growth. Section 3.2, “Air Quality,” comprehensively analyzes and provides feasible mitigation for air pollutant emissions associated with project vehicular trips, during both construction and operational phases. Section 3.7, “Greenhouse Gas Emissions,” comprehensively analyzes and provides feasible mitigation for GHG emissions associated with project vehicular trips, during both construction and operational phases. Section 3.11, “Noise and Vibration,” comprehensively analyzes and provides feasible mitigation for noise and vibration impacts associated with project vehicular trips, during both construction and operational phases. The cumulative impact for each of these topics is evaluated in this section. Other than the comprehensive analysis of environmental effects associated with the increase in travel demand attributable to the project, there are no other adverse physical environmental impacts associated with this cumulative increase in travel demand.

Cumulative (2035) No-Project Conditions

Cumulative (2035) No-Project conditions evaluates the conditions that are expected in the year 2035, factoring in existing development, planned and approved development, and transportation network changes in the study area. The Cumulative (2035) No-Project conditions scenario does not include trips generated by the proposed project.

Roadway traffic volumes were determined using SACOG’s SacSim model. Cumulative No-Project Conditions are used as a future baseline against which to compare Cumulative plus Project Conditions, in order to identify long-term, project-related impacts.

The following improvements will affect the distribution of both background and school traffic:

- ▶ An extension of North Park Drive across I-5 to El Centro Road. The North Park Drive extension will create a new access to the school from the areas of NUSD east of I-5.
- ▶ A crossing of I-5 between Del Paso Road and Arena Boulevard.
- ▶ A crossing of I-5 between Arena Boulevard and San Juan Road.

As shown in Table 5-4, all of the study area intersections are projected to operate at acceptable levels of service under Cumulative (2035) No-Project conditions, except for the following:

- ▶ Del Paso Road /East Commerce Way during both the AM and PM peak hour

The results of the peak-hour signal warrant analysis under Cumulative (2035) No-Project conditions show that none of the unsignalized intersections meet the peak-hour signal warrant during either the AM or PM peak hours.

- ▶ Finally, as shown in Table 5-5, all study area roadway segments are projected to operate at an acceptable LOS under Cumulative (2035) No-Project conditions.

Intersection	Traffic Control Type	Weekday AM Peak Hour		Weekday PM Peak Hour	
		LOS	Delay (sec/veh)	LOS	Delay (sec/veh)
1 Del Paso Road/Powerline Road (overall) Westbound Approach	Westbound Stop	A	5	A	6
		B	11	A	10
2 Del Paso Road/Hovnanian Drive	Signal	B	11	A	9
3 Del Paso Road/Wyndview Way (overall) Southbound Approach	Southbound Stop	A	2	A	2
		B	12	B	10
4 Del Paso Road/Broadgate Drive /Natomas Central Drive	Signal	C	28	B	19
5 Del Paso Road/El Centro Road	Signal	C	34	C	27
6 Del Paso Road/I-5 Southbound off-ramp	Signal	B	19	B	14
7 Del Paso Road /I-5 Northbound ramps	Signal	B	12	C	33
8 Del Paso Road /East Commerce Way	Signal	F	114	F	82
9 Hovnanian Drive /Natomas Central Drive	All-Way Stop Control	B	12	A	9

Notes: LOS = level of service; I-5 = Interstate 5; sec/veh = seconds per vehicle
Bold indicates intersection operating at an unacceptable LOS.
Source: KD Anderson and Associates 2017

Segment	Lanes	Cumulative (2035) No-Project Conditions	
		Volume	LOS
1 Del Paso Road between Power Line Road and Hovnanian Drive	2	1,050	A
2 Del Paso Road between Hovnanian Drive and Natomas Central Drive	4	5,950	A
4 Del Paso Road between Natomas Central Drive and El Centro Road	4	13,940	A
5 Del Paso Road between El Centro Road and I-5	4	27,385	C
6 Del Paso Road between I-5 and East Commerce Way	6	45,440	C
7 Hovnanian Drive between Del Paso Road and Natomas Central Drive	2	2,025	A

Notes: LOS = level of service
Source: KD Anderson and Associates 2017

Tables 5-6 and 5-7 identify the LOS occurring on I-5 mainline segments and ramp-mainline junctions, respectively, under Cumulative (2035) No-Project conditions. As shown on Table 3.13-10, LOS F conditions are expected in the AM peak hour on northbound I-5 from Del Paso Road to State Route 99. Table 5-6 shows that

LOS F conditions are expected in the AM peak hour at the eastbound and westbound on ramps at Del Paso Road entering northbound I-5. LOS F conditions at these I-5 mainline segments and ramp-mainline junctions would result in conditions in excess of Caltrans' LOS D goal and LOS E standard.

Table 5-6. Mainline I-5 Levels of Service – Cumulative (2035) No-Project Conditions							
Segment	Lanes	Weekday AM Peak Hour			Weekday PM Peak Hour		
		Volume (vph)	Density (veh/mi/lane)	LOS	Volume (vph)	Density (veh/mi/lane)	LOS
Southbound							
State Route 99 to Del Paso Road	4	7,065	31	D	5,720	23	D
Del Paso Road to Arena Boulevard	4	7,755	37	E	6,350	27	D
Northbound							
Arena Boulevard to Del Paso Road	4	7,580	35	E	6,835	30	D
Del Paso Road to State Route 99	3	7,055	57	F	6,090	40	E
Notes: LOS = level of service; I-5 = Interstate 5; vph = volume per hour; veh/mi/lane = vehicle per mile per lane							
Bold indicates intersection operating at an unacceptable LOS.							
Source: KD Anderson and Associates 2017							

Table 5-7. I-5 Ramp Levels of Service – Cumulative (2035) No-Project Conditions							
Ramp	Type	Weekday AM Peak Hour			Weekday PM Peak Hour		
		Volume (vph)	Density (veh/mi/lane)	LOS	Volume (vph)	Density (veh/mi/lane)	LOS
Southbound							
Del Paso Road off ramp	Weave	965	36	E	670	29	D
Westbound Del Paso Road on ramp	Merge	980	29	D	875	24	C
Eastbound Del Paso Road on ramp	Weave	680	26	D	425	20	C
Northbound							
Del Paso Road off ramp	Major Diverge	1,160	44	E	1,465	41	E
Eastbound Del Road on ramp	Merge	295	39	F	305	31	D
Westbound Del Paso Road on ramp	Merge	340	38	F	415	31	D
Notes: LOS = level of service; I-5 = Interstate 5; vph = volume per hour; veh/mi/lane = vehicle per mile per lane							
Source: KD Anderson and Associates 2017							

Methodology and Assumptions

- ▶ Traffic impacts were determined based on trip generation and level of service (LOS) analysis. LOS was calculated for signalized and unsignalized intersections using the 2010 Highway Capacity Manual published by the Transportation Research Board. Impacts on the roadway system from the proposed project for Cumulative (2035) conditions were determined by calculating the increase in daily and peak-hour traffic

volumes that would occur with implementation of the proposed project and planned future projects, and then assigning the traffic to area roadways.

- ▶ The trip generation for this analysis was based on the provided land use information using standard trip generation rates from the ITE’s Trip Generation Manual 9th Edition (2012). These generation rates were supplemented with consideration of NUSD bussing policy and the modal choices available within the NUSD’s service area to create site specific trips generation rates that reflected the availability of facilities for pedestrians and bicycles, as well as proximity to existing and planned residences.

Distribution of trips associated with this analysis was derived using data from the NUSD, as well as the general population distribution in the NUSD’s boundary area. A preliminary attendance area boundary was identified for the Paso Verde School, and it is also assumed that 20 percent of the students could be drawn to the campus from throughout the NUSD.

Cumulative No-Project Conditions

Intersection Operations

Table 5-8 shows the 2035 cumulative conditions without project traffic. Under cumulative conditions, the Del Paso Road/East Commerce Way intersection would operate at LOS F during the AM and PM peak hours. LOS at this intersection without project traffic is a **significant cumulative** impact.

Intersection	Traffic Control Type	Cumulative (2035) Conditions				Cumulative (2035) plus Project Conditions			
		Weekday AM Peak Hour		Weekday PM Peak Hour		Weekday AM Peak Hour		Weekday PM Peak Hour	
		Delay LOS	Delay (sec/veh)	Delay LOS	Delay (sec/veh)	Delay LOS	Delay (sec/veh)	Delay LOS	Delay (sec/veh)
1 Del Paso Road/Powerline Road (overall) Westbound Approach	Westbound stop	A	5	A	6	A	5	A	6
		B	11	A	10	A	11	A	10
2 Del Paso Road/Hovnanian Drive	Signal	B	11	A	9	B	18	B	19
3 Del Paso Road/Wyndview Way (overall) Southbound Approach	Southbound stop	A	2	A	2	A	2	A	2
		B	12	B	10	C	17	C	13
4 Del Paso Road/Broadgate Drive /Natomas Central Drive	Signal	C	28	B	19	C	34	B	21
5 Del Paso Road/El Centro Road	Signal	C	34	C	27	D	44	C	29
6 Del Paso Road/I-5 SB off-ramp	Signal	B	19	B	14	C	26	B	15
7 Del Paso Road /I-5 NB ramps	Signal	B	12	C	33	B	11	C	33
8 Del Paso Road /East Commerce Way	Signal	F	114	F	82	F	115	F	84
9 Hovnanian Drive /Natomas Central Drive	All-Way Stop Control	B	12	A	9	B	15	A	10

Notes: LOS = level of service; SB = southbound; NB = northbound; sec/veh = seconds per vehicle
Bold indicates intersection operating at an unacceptable LOS.
 Source: KD Anderson and Associates 2017

Roadway Segment Operations

As shown in Table 5-9, all roadway segments are expected to continue to operate at existing, acceptable LOS A to C conditions under cumulative conditions without the addition of project-related traffic. Therefore, **no significant cumulative** impact would occur.

Segment	Lanes	Cumulative (2035) Conditions		Cumulative (2035) plus Project Conditions	
		Volume	LOS	Volume	LOS
1 Del Paso Road between Power Line Road and Hovnanian Drive	2	1,050	A	1,115	A
2 Del Paso Road between Hovnanian Drive and Natomas Central Drive	4	5,950	A	8,015	A
3 Del Paso Road between Natomas Central Drive and El Centro Road	4	13,940	A	14,975	A
4 Del Paso Road between El Centro Road and I-5	4	27,385	C	27,885	C
5 Del Paso Road between I-5 and East Commerce Way	6	45,440	C	45,625	C
6 Hovnanian Drive between Del Paso Road and Natomas Central Drive	2	2,025	A	2,350	A

Notes: LOS = level of service; I-5 = Interstate 5
Source: KD Anderson and Associates 2017

Interstate 5 Mainline and Ramp Operations

Tables 5-10 and 5-11 identify the LOS occurring on I-5 mainline segments and ramp-mainline junctions, respectively. Under cumulative conditions, LOS F conditions are expected in the AM peak hour on northbound I-5 mainline from Del Paso Road to State Route 99. LOS F conditions are expected in the AM peak hour at the eastbound and westbound on ramps at Del Paso Road entering northbound I-5. LOS at this mainline segment and these ramps without project traffic is a **significant cumulative** impact.

Table 5-10. Mainline I-5 Levels of Service – Cumulative (2035) plus Project Conditions												
Segment	Cumulative (2035) Conditions						Cumulative (2035) plus Project Conditions					
	Weekday AM Peak Hour			Weekday PM Peak Hour			Weekday AM Peak Hour			Weekday PM Peak Hour		
	Volume (vph)	Density (veh/ mi/lane)	LOS	Volume (vph)	Density (veh/ mi/lane)	LOS	Volume (vph)	Density (veh/ mi/lane)	LOS	Volume (vph)	Density (veh/ mi/lane)	LOS
Southbound												
State Route 99 to Del Paso Road	7,065	31	D	5,720	23	D	7,090	32	D	5,740	24	C
Del Paso Road to Arena Boulevard	7,755	37	E	6,350	27	D	7,832	37	E	6,387	27	D
Northbound												
Arena Boulevard to Del Paso Road	7,580	35	E	6,835	30	D	7,600	35	E	6,851	30	D
Del Paso Road to State Route 99	7,055	57	F	6,090	40	E	7,100	58	F	6,111	40	E

Notes: LOS = level of service; I-5 = Interstate 5; SB = southbound; NB = northbound; sec/veh = seconds per vehicle
Source: KD Anderson and Associates 2017

Table 5-11. I-5 Ramps Levels of Service – Cumulative (2035) plus Project Conditions												
Ramp	Cumulative (2035) Conditions						Cumulative (2035) plus Project Conditions					
	Weekday AM Peak Hour			Weekday PM Peak Hour			Weekday AM Peak Hour			Weekday PM Peak Hour		
	Volume (vph)	Density (veh/ mi/lane)	LOS	Volume (vph)	Density (veh/ mi/lane)	LOS	Volume (vph)	Density (veh/ mi/lane)	LOS	Volume (vph)	Density (veh/ mi/lane)	LOS
Southbound												
Del Paso Road off ramp	965	36	E	670	29	D	990	36	E	690	29	D
WB Del Paso Road on ramp	980	29	D	875	24	C	980	29	D	875	24	C
EB Del Paso Road on ramp	680	26	D	425	20	C	584	18	B	446	21	C
Northbound												
Del Paso Road off ramp	1,160	44	E	1,465	41	E	1,180	44	E	1,481	41	E
EB Del Road on ramp	295	39	F	305	31	D	340	39	F	326	21	D
WB Del Paso Road on ramp	340	38	F	415	31	D	340	38	F	415	31	D

Notes: LOS = level of service; I-5 = Interstate 5; WB = westbound; EB = eastbound; vph = volume per hour; veh/mi/lane = vehicle per mile per lane
Source: KD Anderson and Associates 2017

Cumulative with Project Conditions

Intersection Operations

- ▶ The addition of project-related traffic to traffic that would be generated under Cumulative 2035 Conditions would not cause the LOS to degrade below the applicable thresholds at study area intersections.

As shown on Table 5-8, the Del Paso Road and East Commerce Way intersection would operate at LOS F without the project-generated traffic and the addition of project-related traffic would not further degrade this LOS. The addition of project-generated traffic would increase in delay by 1 second in the AM peak hour and 2 seconds in the PM peak hour at Del Paso Road and East Commerce Way intersection. The incremental change in delay at this intersection would not exceed the City's threshold that states a significant impact would occur if the project causes an increase of the average delay by 5 seconds at an intersection already operating at LOS F.

In addition, the increase in project-related traffic would not cause the LOS at any other study area intersections to degrade below the applicable thresholds for the County or City under Cumulative (2035) plus Project conditions. Therefore, the addition of project-related traffic to cumulative conditions **would not result in a cumulatively significant incremental contribution** to a significant cumulative impact.

Roadway Segment Operations

As shown on Table 5-9, the increase in project-related traffic would not change the LOS on any roadway segment in the study area. Because project-generated traffic would not degrade any roadway segment below the applicable thresholds for the County or City under Cumulative (2035) plus Project conditions, the proposed project **would not result in a cumulatively significant incremental contribution** to a significant cumulative impact related to roadway segment operations.

Interstate 5 Mainline and Ramp Operations

Project-generated traffic would not further degrade I-5 mainline and ramps operating at LOS F (Tables 5-10 and 5-11). As stated in the traffic analysis, the school itself would not create new traffic that would use I-5. It was assumed that trips using I-5 would be by parents that would otherwise use I-5 to reach other NUSD schools or by parents as part of their commute trips that similarly would be made with and without the project. Therefore, the proposed project **would not result in a cumulatively significant incremental contribution** to a significant cumulative impact. This impact would be **less than cumulatively considerable**.

UTILITIES AND SERVICE SYSTEMS

Utilities and service systems would be provided to the school by the City of Sacramento for water and the Sacramento Area Sewer District (SASD) (formerly known as County Sanitation District-1) and Sacramento Regional County Sanitation District (SRCSD) for wastewater collection and treatment. Solid waste disposal would be provided by the Kiefer Landfill.

In terms of cumulative impacts, these service providers are responsible for ensuring adequate provision of public utilities within their service boundaries. The following discussion analyzes the cumulative impacts on these service providers from implementation of the project and future, related projects within their respective service areas.

Water Supply

The City of Sacramento provides water supplies to existing and proposed development in North Natomas Community Plan area within the city limits and would provide water supplies to future development in the Greenbiar and Panhandle areas (City of Sacramento 2017b, 2017c). Water demands for these areas are accounted for within the City's Urban Water Management Plan (UWMP).

Table 3.14-3 in Section 3.14, "Utilities and Service Systems," identifies surface water and groundwater supply and demand within the City's service area from 2020 to 2040 in normal, single dry, and multiple dry years. As shown in Table 3.14-3, the City would have water supplies that exceed demands in all water years.

The City's groundwater and surface water supplies are highly reliable. The City has a firm groundwater supply of 25,205 acre-feet per year (afy) (West Yost Associates 2016:6-19). As shown on Table 3.14-4, groundwater demand would be less than 25,205 afy in all water years. Under the settlement agreement with the U.S. Bureau of Reclamation, the City agreed to limit its rate and amount of diversion from the Sacramento and American Rivers under its water rights permits in exchange for the U.S. Bureau of Reclamation's agreement to operate its facilities to assure the City a reliable supply of surface water under the City's permits (West Yost Associates 2016:7-2).

As discussed in Section 3.14, "Utilities and Service Systems," the project site is not within the City of Sacramento's service area, and water supply demands for the proposed project were not accounted for in water demand projections contained in the City's UWMP. As state above, the City would have water supplies that exceed demands in all water years through 2040. This surplus water supply would be sufficient to meet the water supply demands of the proposed project (222.5afy).³ Therefore, a **significant cumulative impact would not occur**, and the proposed project **would not result in a cumulatively significant incremental contribution** to impacts related to increased demand for water supplies.

Water Supply Conveyance Facilities

Implementation of the proposed project would require construction of on-site water supply conveyance facilities. The NUSD would be required to submit a water conveyance infrastructure improvement plan that depicts the locations and appropriate sizes of all required conveyance infrastructure. Proposed on-site water facilities would be required to be designed and sized to provide adequate service to the project site for the amount and type of proposed development. Potable and fire protection water supply are available to the school by connecting to existing infrastructure in Westlake Parkway along the eastern border of the project site (see Exhibit 2-5 in Chapter 2, "Project Description"). Off-site water conveyance facilities have the capacity to provide water supplies to the project site and no new off-site water conveyance infrastructure would be required (Joyce, pers. comm., 2017). The water infrastructure is planned to serve the project's needs, and the construction of water supply infrastructure would not combine with construction of water supply facilities of related projects to create a cumulative impact. A **significant cumulative impact would not occur**, and the proposed project **would not result in a cumulatively significant incremental contribution** to impacts related to water storage and conveyance facilities.

³ Based on the City's Water Supply Assessment worksheet, the City's water demand estimate for public uses (including school uses) is 0.17 afy per employee (City of Sacramento 2013c). The school would accommodate up to approximately 1,000 students and approximately 60 staff members; therefore water demand for the proposed school uses would be 180.2 afy (1,060 employees/students x 0.17 afy). The City estimates water demand for landscape irrigation as approximately 6.6 afy per acre. The landscaped portion of the project site would be approximately 6.4 acres; therefore the water demand for landscape irrigation would be 42.3 afy (6.4 acres x 6.6 afy per acre).

Wastewater Conveyance Facilities

The on-site wastewater collection and conveyance system would convey wastewater flows to SASD's off-site 12-inch sewer line in Del Paso Road. This sewer line was designed to provide service to the property and would be connected to the school via the main access road. SASD's existing sewer line in Del Paso Road was sized to accommodate wastewater flows generated by the proposed project. Both SASD and SRCSD have stated they will serve the property and connect it to the existing sewer system (Singh, pers. comm. 2016). Therefore, SASD and SRCSD wastewater collection and conveyance facilities would be available to serve existing development and future development, including the project site. A **significant cumulative impact would not occur**, and the proposed project **would not result in a cumulatively significant incremental contribution** to impacts related to wastewater conveyance infrastructure.

Wastewater Treatment Facilities

Future development in the Greenbriar area; Panhandle area; North Natomas Community Plan area, including the proposed project, and the Natomas North Precinct Master Plan area would generate wastewater that would be treated at the Sacramento Regional Wastewater Treatment Plant (SRWTP).

The proposed project would generate 0.03 mgd average dry-weather flow that would be conveyed to the SRWTP. The SRWTP has a design capacity of 181 mgd with the potential to expand to 218 mgd. As of 2016, the SRWTP receives and treats an average of 127 mgd each day. The SRCSD expects that substantial water conservation measures throughout the service area would allow the existing 181 mgd average dry-weather flow capacity to be adequate for at least 20 more years (SRCSD 2014:6-2). The SRWTP would have adequate capacity to treat wastewater flows generated by the proposed project as well as future development within the SRCSD service area. A **significant cumulative impact would not occur**, and the proposed project **would not result in a cumulatively significant incremental contribution** to impacts related to wastewater treatment.

Solid Waste

Implementation of the project would generate approximately 0.2 tons per day (tpd) of solid waste that would be disposed of at the Kiefer Landfill. This landfill has a maximum permitted throughput of 10,815 tpd. The estimated 0.2 tpd of solid waste generated by the proposed project would be less than one percent of the maximum tpd that could be received at the landfill. In addition, the Kiefer Landfill has a remaining capacity of approximately 112.9 million cubic yards and an expected closure date of 2064. Therefore, the Kiefer Landfill has sufficient permitted capacity to accommodate solid-waste disposal needs for the proposed project and existing and future development in its disposal area. Therefore, **no significant cumulative impact** would occur.

ENERGY

Transportation is the largest energy consuming sector in California, accounting for approximately 39 percent of all energy use in the state (U.S. Energy Information Administration 2016). More motor vehicles are registered in California than in any other state, and commute times in California are among the longest in the country (EIA 2017). Operations of the proposed project would receive students that would otherwise attend another nearby NUSD school; the anticipated distance for attendees to drive to the proposed school is less than that if they were to attend the alternate existing schools in the area. As discussed previously in the Transportation and Traffic analysis, the H. Allen Height Elementary School and Witter Ranch Elementary School would likely accommodate

students from this area if the project were not constructed and the resulting VMT to these schools would be greater than the VMT anticipated as a result of the proposed project. The proposed school is anticipated to *reduce* potential transportation-related energy consumption that would otherwise occur if the project were not constructed.

The increased demand for electrical and natural gas supplies and infrastructure is a byproduct of development in Sacramento County and the region. Energy is consumed for heating, cooling, and electricity in homes and businesses; for public infrastructure and service operations; and for agriculture, industry, and commercial uses. Each service provider is responsible for ensuring adequate provision of these utilities within their jurisdictional boundaries and would be responsible for upgrading their existing electrical and natural gas distribution systems or constructing new distribution systems to meet the demands of individual projects.

Sacramento County and some of the cities within the region implement general plans and other policy documents that include goals and policies to reduce energy demands through the use design features, building materials, and building practices; encourage the use of renewable energy sources; and ensure adequate electricity and natural gas and related distribution systems are available to meet energy demands. In addition, many service providers encourage energy conservation through programs, such as offering rebates for installation of energy efficient appliances and lighting fixtures. The location, density, mix of land uses, and quality of the multi-modal transportation system is directly related to the amount of travel and transportation-related energy demands. The County encourages the use of energy conservation devices and passive design concepts which make use of natural climate to increase energy efficiency.

The proposed project would implement energy conservation strategies. The District is proactive is implementing energy efficiency and energy conservation programs as a part of its operations. The NUSD published its *Conservation and Building Management Guidelines* in March 2016 (revised April 2016), which identifies energy conservation guidelines to serve as a standard for facilities and strategic planning. To reduce gas and electric demand, the guidelines include operational measures, such as use of natural lighting, limiting use of interior and exterior lights to only necessary locations and levels, using cross-ventilation as an alternative to air conditioning when possible, use of Energy Star microwaves, discouraging the use of space heaters and individual coffee pots, and several other operational measures (NUSD 2017b). Many of these actions may be small independently, but cumulatively can result in measureable energy reductions for a campus.

In addition, the proposed project and new development would be required to comply with the Building Energy Efficiency Standards (Title 24 of the California Code of Regulations), including the Building Energy Efficiency Standards, and the 2016 CalGreen Code, resulting in reductions in energy demand. These Codes were developed to enhance the energy efficiency of the design and construction of buildings and construction practices. Since these regulations are likely to change over time, all site development will need to comply with energy regulations or standards that are in effect at the time of construction. While the Paso Verde School is not pursuing environmental certification (i.e. LEED, CHPS), it will be designed to the high sustainability standard set by those programs. Building orientation to maximize natural daylighting in the learning environments was a key driver in the site development of the campus. Because of its size, the project will require commissioning of HVAC systems. This effort ensures that systems are operating at maximum energy efficiency. The project will be net zero ready to facilitate future installation of solar facilities.

There is **no significant cumulative** impact, and the project **would not result in a cumulatively significant** incremental contribution to a significant cumulative impact related to the wasteful, inefficient, excessive, and unnecessary consumption of energy.

Electrical and Natural Gas Service

Electrical and natural gas service in the city is provided by Sacramento Metropolitan Utility District (SMUD) and Pacific Gas and Electric Company (PG&E), respectively. Implementation of the proposed project and related projects within the SMUD and PG&E service areas would increase demand for electricity and natural gas and require the development of new utility infrastructure to deliver services. Individual development projects would be required to assess project impacts during the environmental review process to ensure that SMUD and PG&E have sufficient electrical and natural gas supplies to meet demand.

The proposed project would construct a self-contained distribution system that connects to the existing off-site electrical and natural gas systems. The proposed electrical-utility improvements would be required to comply with all existing local and utility requirements, Building Energy Efficiency Standards (Title 24 of the California Code of Regulations), and applicable requirements of the California Building Standards Code. Natural gas facilities are to be installed in accordance with established PG&E rules and construction standards, as required in the PG&E's *Electrical & Gas Service Requirements* (also referred to as the Greenbook Manual). Related projects would also construct self-contained distributions systems that connect to the existing electrical and natural gas systems, and these systems would comply with the same electrical and natural gas standards and requirements. Therefore, **a cumulatively significant impact would not occur**, and the project **would not result in a cumulatively significant incremental contribution** to impacts related to the increased demand for electrical and natural gas services.

5.2 GROWTH-INDUCING IMPACTS

CEQA (*CEQA Guidelines*, CCR Section 15126.2[d]) requires an examination of the direct and indirect impacts of the proposed project, including the potential of the project to induce growth leading to changes in land use patterns and population densities and related impacts on environmental resources. Specifically, CEQA states that the EIR shall:

[d]iscuss 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 that 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 the construction of new facilities that could cause significant environmental effects. Also discuss characteristics of some projects that 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. 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);

- ▶ a construction effort with substantial short-term employment opportunities that indirectly stimulates the need for additional housing and services to support the new temporary employment demand; 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) or adding development adjacent to undeveloped land.

Growth-inducement itself is not an environmental effect, but it may lead to foreseeable environmental effects. These environmental effects may include increased demand on other community and public services and infrastructure, increased traffic and noise, degradation of air or water quality, degradation or loss of plant or animal habitats, or conversion of agricultural and open space land to urban uses.

5.2.1 GROWTH INDUCING IMPACTS OF THE PROJECT

Implementation of the proposed project does not include commercial, office, or industrial land uses that would generate permanent employment opportunities. A portion of the school’s approximately 40 teachers and 20 staff could move from outside the school district; however, most positions would be filled by existing residents and transfers from within the district. Project construction activities would generate temporary and short-term employment, but these construction jobs are anticipated to be filled from the existing local and regional employment pool. In addition, if some nonlocal construction workers were employed for the project, the temporary and short-term nature of the work supports the conclusion that these workers would not typically change residences when assigned to a new construction site. Therefore, construction of the proposed project would not indirectly result in a population increase or induce growth by creating permanent new jobs.

Development of the school site would not directly induce growth by increasing the total NUSD enrollment or the population in the District. The Natomas Unified School District 2014 Facilities Master Plan has identified the Paso Verde Elementary School site as a future school site to accommodate planned residential growth within the district’s boundaries (NUSD 2014:13). The NUSD’s Facilities Master Plan estimates that 838 planned residential units would be constructed in the vicinity of the site by 2020 (NUSD 2014:26). Some of these units have since been constructed and as a result, NUSD’s enrollment has increased and area schools are overcrowded. NUSD must now move forward with this new school to accommodate existing needs, in addition to the potential for new schools in other locations to accommodate population growth.

In addition, development of the school site would not indirectly induce growth by providing new water and wastewater infrastructure or roadway improvements that could be used to serve new development beyond the school site. Water and sewer systems would be constructed specifically to serve the school site. The wastewater infrastructure would be sized to accommodate the sewer flows of only the school site and would not have capacity to serve areas outside the site. If public water and sewer systems are used, water and wastewater infrastructure would be connected to existing facilities with the capacity to serve the amount of proposed development.

Improvements to Del Paso Road would provide only access to the school site. Lands in the vicinity of are zoned for agricultural uses and outside of the County’s Urban Policy Area and Urban Services Boundary.⁴ Because the

⁴ The Urban Services Boundary is the boundary of the urban area in the unincorporated County that provides a permanent boundary that is not modified except under extraordinary circumstances and is used as a planning tool for urban infrastructure providers for developing long-range master plans for future urbanization. The Urban Policy Area defines the area expected to receive urban levels of public infrastructure and services within the 20-year planning period of the County General Plan (Sacramento County 2011).

project site is outside of the County's USB and UPA, no urban development would occur on the project site. Therefore, improvements to Del Paso Road would not provide access to currently undeveloped areas planned for future development.

Overall, the proposed project would accommodate elementary and middle school students generated by planned growth within the NUSD. In addition, the proposed project would not induce substantial population growth indirectly through the extension of roads or other utility infrastructure. Therefore, the proposed project would not induce substantial growth in the City of Sacramento or Sacramento County.

5.3 SIGNIFICANT IRREVERSIBLE ENVIRONMENTAL CHANGES

The CEQA Guidelines require a discussion of the significant irreversible environmental changes that would be caused by project implementation (CEQA Guidelines Section 15126.2[c]).

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. Implementation of the proposed project would result in the irreversible and irretrievable commitment of energy and material resources during project construction and maintenance, including the following:

- ▶ construction materials, including such resources as soil and rocks;
- ▶ land area committed to new/expanded project facilities; and
- ▶ energy expended in the form of electricity, gasoline, diesel fuel, and oil for construction equipment and transportation vehicles that would be needed for project construction, operation, and maintenance.

Energy used during project construction would be expended in the form of electricity, gasoline, and diesel fuel, which would be used primarily by construction equipment, trucks delivering equipment and supplies to the site, and construction workers driving to and from the site.

Other nonrenewable and slowly-renewable resources consumed as a result of project development would include, but not necessarily be limited to, lumber and other forest products, sand and gravel, asphalt, petrochemical construction materials, and water. The use of these nonrenewable resources is expected to account for only a small portion of the region's resources.

Operation of the project would consume energy for multiple purposes including, but not limited to, heating and cooling, water heating, lighting, space cooling, running office equipment, cooking, ventilation, and running a wide variety of other equipment as well as vehicle trips associated with proposed school uses. Furthermore, these uses could increase emissions of greenhouse gases and other air pollutants. The District is proactive in implementing energy efficiency and energy conservation programs as a part of its operations. However, it is important to note that actual energy usage could vary substantially, depending upon factors such as the operation of heating and cooling equipment, use of lighting, and actual miles driven to the school site.

Implementation of the proposed project would permanently convert 18.3 acres of vacant, former agricultural land to urban uses. This change in land use would represent a long-term commitment to new land uses, since the potential for developed land to be reverted back to undeveloped land uses is highly unlikely.

The proposed project would not result in irreversible damage from environmental accidents, such as an accidental spill or explosion of a hazardous material. During construction, equipment would be using various types of fuel and material classified as hazardous. In California, the storage and use of hazardous substances are strictly regulated and enforced by various local, regional, and state agencies to prevent impacts related to environmental accidents. The nature of construction would not involve unusual amounts or types of hazardous materials that could result in irreversible damage from an accidental release. Similarly, operation of the school would not involve hazardous materials beyond those used in laboratories, shop classes, and art classes, which would be used under the supervision of an instructor, and standard, common-place household and landscaping chemicals which would not result in significant environmental accidents with their use in accordance with manufacturer instructions.

5.4 SIGNIFICANT AND UNAVOIDABLE ADVERSE IMPACTS

Section 15216.2(b) of the CEQA Guidelines requires an EIR to include a discussion of any significant environmental impacts that cannot be avoided if the project is implemented.

Chapter 3 of this EIR provides a detailed analysis of all significant and potentially significant environmental impacts related to implementing the proposed project; identifies feasible mitigation measures, where available, that could avoid or reduce these significant and potentially significant impacts; and presents a determination whether these mitigation measures would reduce these impacts to less-than-significant levels.

Chapter 5, Section 5.1 identifies the significant cumulative impacts resulting from the combined effects of the proposed project and related projects. If a specific impact in either of these sections cannot be fully reduced to a less-than-significant level, it is considered a significant and unavoidable adverse impact.

Implementing the proposed project would result in significant and unavoidable adverse impacts and make a significant and unavoidable cumulatively considerable incremental contribution to significant cumulative impacts as identified below.

SECTION 3.1, AESTHETICS

Impact 3.1-1: Adversely Affect a Scenic Vista or Degrade the Existing Visual Character or Quality of the Project Site

SECTION 3.11, NOISE AND VIBRATION

Impact 3.11-1: Short-Term Noise Levels from Construction Activities

CUMULATIVE IMPACT AREAS

- ▶ Aesthetics

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6 REFERENCES

6.1 INTRODUCTION

None.

6.2 PROJECT DESCRIPTION

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6.3 INTRO TO ENVIRONMENTAL ANALYSIS

None.

6.3.1 AESTHETICS

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