

California Northstate University Medical Center Project Draft EIR

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California Northstate University Medical Center Project Draft EIR

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Prepared for:



8401 Laguna Palms Way
Elk Grove, CA 95758

Contact:

Sarah Kirchgessner
Project Planner

Prepared by:

Ascent Environmental, Inc.
455 Capitol Mall, Suite 300
Sacramento, CA 95814

Contact:

Pat Angell
Project Manager

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LIST OF ABBREVIATIONS

°C	degrees Celsius
°F	degrees Fahrenheit
AB	Assembly Bill
ADA	Americans with Disabilities Act
ADWF	average dry weather flow
af/year	acre-feet per year
AFV	alternative fuel vehicles
AGL	above ground level
Alquist-Priolo Act	Alquist-Priolo Earthquake Fault Zoning Act of 1972
APN	Assessor Parcel Number
AQMP	Air Quality Mitigation Plan
BACT	best available control technology
BCE	before current era
BFE	base flood elevation
BMP	best management practice
BP	Business and Professional Office
C&D	construction and demolition
CAA	Clean Air Act
CAAQS	California ambient air quality standards
CAFE	Corporate Average Fuel Economy
CAL FIRE	California Department of Forestry and Fire Protection
Cal/OSHA	California Occupational Safety and Health Administration
CalEEMod	California Emissions Estimator Model
CalEPA	California Environmental Protection Agency
CalRecycle	California Department of Resources Recycling and Recovery
Caltrans	California Department of Transportation
CAP	City Climate Action Plan 2019 Update
CAP	Climate Action Plan
CARB	California Air Resources Board
CBC	California Building Code
CC	Community Commercial
CCAA	California Clean Air Act
CCR	California Code of Regulations
CCSD	Cosumnes Community Services District
CDFW	California Department of Fish and Wildlife

CDPH	California Department of Public Health
CEC	California Energy Commission
Central Valley RWQCB	Central Valley Regional Water Quality Control Board
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFC	California Fire Code
CFR	Code of Federal Regulations
City	City of Elk Grove
CMP	Congestion Management Process
CNDDB	California Natural Diversity Database
CNEL	Community Noise Equivalent Level
CNPS	California Native Plant Society
CNU	California Northstate University
CO	carbon monoxide
CO ₂	carbon dioxide
Cortese List	California Government Code Section 65962.5
CRHR	California Register of Historical Resources
CRPR	California Rare Plant Rank
CSD	Community Services District
CUP	conditional use permit
CUPA	Certified Unified Program Agency
CVFPB	Central Valley Flood Protection Board
CVFPP	Central Valley Flood Protection Plan
CVP	Central Valley Project
CWA	Clean Water Act
dB	decibels
dBA	A-weighted decibels
DBH	diameter at breast height
DHS	California Department of Health Services
diesel PM	exhaust from diesel engines
DOF	California Department of Finance
DOT	U.S. Department of Transportation
Draft EIR	draft environmental impact report
DTSC	California Department of Toxic Substances Control
DWR	California Department of Water Resources
EAP	Energy Action Plan
EC	Employment Center
EGPD	Elk Grove Police Department
EGUSD	Elk Grove Unified School District
EMD	Environmental Management Department

EMFAC	Emission Factor
EOP	Emergency Operations Plan
EPA	U.S. Environmental Protection Agency
EPAct	Energy Policy Act of 1992
ESA	federal Endangered Species Act
EV	electric vehicle
FAA	Federal Aviation Administration
FAR	floor area ratio
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
FR	Federal Rule
GC	General Commercial
GHG	greenhouse gas
GPCD	gallons per capita per day
GWP	global warming potential
HAP	hazardous air pollutants
HRA	health risk assessment
HSC	California Health and Safety Code
Hz	hertz
I-5	Interstate 5
IEEE	Institute of Electrical and Electronics Engineers
IEPR	Integrated Energy Policy Report
kV	kilovolt
kWh	kilowatt-hours
LCFS	Low Carbon Fuel Standard
L _{dn}	day-night average sound level
LED	light-emitting diode
LEED	Leadership in Energy and Environmental Design
L _{eq}	equivalent continuous sound level
LHMP	Local Hazard Mitigation Plan
LID	low-impact development
L _{max}	maximum sound level
LTS	level of traffic stress
MBTA	Migratory Bird Treaty Act
MCL	maximum contaminant level

mgd	million gallons per day
MLD	most likely descendant
MMTCO ₂ e	metric tons of carbon dioxide equivalent
MP	Industrial Office Park
mPa	micro-Pascals
MPO	Metropolitan Planning Organization
MRI	magnetic resonance imaging
MS4	municipal separate storm sewer systems
MSAT Protocol	<i>Mobile Source Air Toxics Protocol</i>
MTCO ₂ e	metric tons of carbon dioxide equivalent
MTCO ₂ e/year	metric tons of carbon dioxide equivalent per year
MTIP	Metropolitan Transportation Improvement Program
MTP/SCS	Metropolitan Transportation Plan/Sustainable Communities Strategy
MWELo	Model Water Efficient Landscape Ordinance
NAAQS	national ambient air quality standards
NAHC	Native American Heritage Commission
NCIC	North Central Information Center
NEHRP	National Earthquake Hazards Reduction Program
NFIP	National Flood Insurance Program
NHTSA	National Highway Traffic Safety Administration
NO	nitric oxide
NO ₂	nitrogen dioxide
NOP	Notice of Preparation
NO _x	nitrogen oxide
NPDES	National Pollutant Discharge Elimination System
NPPA	California Native Plant Protection Act
NRHP	National Register of Historic Places
NWR	National Wildlife Refuge
OPR	Governor's Office of Planning and Research
OSHA	Occupational Safety and Health Administration
OSHPD	Office of Statewide Health Planning and Development
ozone	photochemical smog
PG&E	Pacific Gas and Electric Company
PM	particulate matter
PM ₁₀	respirable particulate matter with an aerodynamic diameter of 10 micrometers or less
PM _{2.5}	fine particulate matter with an aerodynamic diameter of 2.5 micrometers or less
Porter-Cologne Act	Porter-Cologne Water Quality Control Act of 1970
POU	Place of Use

ppm	parts per million
PPV	peak particle velocity
PRC	Public Resources Code
Project	California Northstate University Medical Center Project
PUC	Public Utilities Code
RCRA	Resource Conservation and Recovery Act of 1976
Reclamation	U.S. Bureau of Reclamation
Regional San	Sacramento Regional County Sanitation District
RHB	Radiological Health Branch
RMS	root-mean-square
ROG	reactive organic gases
RPT	roadway performance targets
RTPA	Regional Transportation Planning Agencies
RWQCB	regional water quality control board
SACOG	Sacramento Area Council of Governments
SAF Plan	State Alternative Fuels Plan
SAFE Rule	Safer Affordable Fuel-Efficient Vehicle Rule
SASD	Sacramento Area Sewer District
SB	Senate Bill
SCDPH	Sacramento County Department of Public Health
SCGA	Sacramento Central Groundwater Authority
SCWA	Sacramento County Water Agency
SDMP	Storm Drain Master Plan
SDWA	Safe Drinking Water Act
SENEL	Single Event Noise Exposure Level
SGMA	Sustainable Groundwater Management Act of 2014
SIP	State Implementation Plan
SMAQMD	Sacramento Metropolitan Air Quality Management District
SMUD	Sacramento Municipal Utility District
SO ₂	sulfur dioxide
SPCC	Spill Prevention, Control, and Countermeasure
SPL	sound pressure level
sq. ft.	square foot
SR	State Route
SRWTP	Sacramento Regional Wastewater Treatment Plant
STIP	California Statewide Transportation Improvement Program
SVAB	Sacramento Valley Air Basin
SWPPP	storm water pollution prevention plan
SWRCB	State Water Resources Control Board
SWRCB-DDW	State Water Resources Control Board Division of Drinking Water

TAC	toxic air contaminants
TDM	Transportation Demand Management
TMDL	total maximum daily load
TOG	total organic gases
TRU	transport refrigeration units
U.S.C.	U.S. Code
UC	University of California
UCERF3	Uniform California Earthquake Rupture Forecast
Unified Program Program	Unified Hazardous Waste and Hazardous Materials Management Regulatory
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
UWMP	urban water management plan
UWMPA	Urban Water Management Planning Act
VFD	variable frequency drives
VMT	vehicle miles traveled
Water Code	California Water Code
WDR	Waste Discharge Requirement
WMP	waste management plan
WQO	Water Quality Objective
WSA	water supply assessment
WSIP	Water Supply Infrastructure Plan
WSMP	Water Supply Master Plan
ZEV	zero-emission vehicle

EXECUTIVE SUMMARY

INTRODUCTION

This summary is provided in accordance with California Environmental Quality Act Guidelines (State CEQA Guidelines) Section 15123. As stated in Section 15123(a), “an EIR [environmental impact report] shall contain a brief summary of the proposed action and its consequences. The language of the summary should be as clear and simple as reasonably practical.” As required by the guidelines, this chapter includes (1) a summary description of the California Northstate University (CNU) Medical Center Project (Project), (2) a synopsis of environmental impacts and recommended mitigation measures (Table ES-1, presented at the end of this chapter), (3) identification of the alternatives evaluated and of the environmentally superior alternative, (4) a discussion of the areas of controversy associated with the Project, and (5) a discussion of issues to be resolved.

SUMMARY DESCRIPTION OF THE PROJECT

CNU is a private education institution that currently operates a School of Medicine on the Project site. Other existing uses on the Project site include retail, restaurants, and an animal hospital. CNU is proposing to redevelop the site to include a hospital with a helicopter landing site (helistop) and associated central plant and mechanical yard; an outpatient clinic; a medical office building; a dormitory adjacent to the existing School of Medicine; three parking structures, including two with accessory retail/office uses; and public gathering spaces. At buildout, the Project would employ approximately 4,000 people and house up to 300 students.

Project Objectives

The primary objectives of the CNU Medical Center Project are to:

- ▶ develop a hospital close to the CNU School of Medicine campus to provide training opportunities for its students,
- ▶ offer health care for patients in southwestern Sacramento County,
- ▶ offer emergency access to medical services along the Interstate 5 (I-5) corridor, and
- ▶ Develop a hospital of sufficient size with complete clinical services and the capability to provide highly specialized care as required for a designation as a teaching hospital.

Project Location

The Project site is located along the western boundary of the City of Elk Grove (City) in Sacramento County, California, just east of I-5 (see Figure 1-1 in Chapter 1, “Introduction”). The approximately 24.4-acre Project site consists of 12 parcels (Assessor Parcel Numbers [APNs] 132-2480-001, -002, -003, -004, -005, -007, -008, -010, and -011; 132-2160-001 and -002; 132-0460-076) owned by CNU (see Figure 2-1 in Chapter 2, “Project Description”). The site is bordered by Elk Grove Boulevard to the north, I-5 to the west, West Taron Drive to the east, and the Laguna Stone Lake subdivision to the south.

The site is developed, except for an approximately 0.5-acre vacant lot (APN 132-2160-002) on the southwest corner of West Taron Court and West Taron Drive and an approximately 0.75-acre vacant lot (APN 132-2480-007) along West Taron Drive north of West Taron Court. A total of nine structures encompassing 243,837 square feet (sq. ft.) of building space currently occupy the Project site (Figure 2-1). This total includes the 109,300 sq. ft., two-story School of Medicine building at 9700 West Taron Drive. Current uses on the Project site include the existing CNU Medical College and Pharmacy College, an office building (ALLDATA), a brewery, an animal hospital, several eating

establishments, and other commercial and retail uses. Directly adjacent to the site are a gas station, restaurants, single-family residences, and a church. Roadway access to the Project site is provided from West Taron Drive and Riparian Drive, and West Taron Court provides access to the interior of the site.

Project Characteristics

The proposed CNU Medical Center Project would include the demolition of existing buildings (see Figure 2-4 in Chapter 2, "Project Description") and the construction of proposed buildings, parking structures, and the associated uses shown in Figure 2-5 in Chapter 2, "Project Description," over three phases.

Development of the Project would be guided by its District Development Plan, which would provide for overall site plan approval and establish development elements, including, but not limited to, pedestrian improvements, signage, landscaping, internal setbacks, lighting, parking, building architecture design parameters, building placement and configuration, and other features that are common across the site (see Appendix B). Each phase of the Project would also require a Design Review permit, which is required for new construction of a single nonresidential building or structure, or multiple buildings or structures in a single shopping center complex, comprising 10,000 sq. ft. or more (e.g., commercial, office, industrial, public/quasi-public).

To accommodate the proposed land uses, the Project would require the City General Plan land use designation for six parcels on the Project site to be changed from Community Commercial (CC) to Employment Center (EC) and for three parcels to be changed from Light Industrial (LI) to EC (Figure 2-2 in Chapter 2, "Project Description"). The Project would also require rezoning of six parcels on the Project site from General Commercial (GC) to Business and Professional Office Park (BP) and three from Industrial-Office Park (MP) to BP to allow the proposed development (Figure 2-3 in Chapter 2, "Project Description"). Because the Project site is located in the 200-year floodplain (0.5-percent chance of a flood occurring in any given year), the Project would also include amendments to General Plan Policy ER-2-3 and Elk Grove Municipal Code Title 23 (Zoning), Section 23.42.040.D to allow construction of an essential health care facility in the 200-year floodplain.

PHASE 1

Figure 2-7, in Chapter 2, "Project Description," shows the facilities proposed under Phase 1. Phase 1 would include construction of a 596,790 sq. ft., approximately 241-patient-bed (with the potential to be expanded to 250 beds) hospital in the northwest corner of the Project site. The hospital would include a nine-story central tower and single seven-story patient-bed wing with a floor plate area of 37,000 sq. ft. atop a four-story, main hospital podium with a 76,000 sq. ft. floor plate area. A helistop would be constructed on the roof of the patient-bed wing of the tower. Hospital administration would be housed on the eighth level of the central tower, such that the total height of the hospital would be 12 stories above grade with a mechanical penthouse on the top of the building (approximately 261 feet tall). The hospital would also include a partial basement level under the main hospital podium that would provide underground parking for up to 230 vehicles. Because the hospital would be located within the 200-year floodplain, the first floor of the hospital building would be elevated structurally approximately 7 feet above existing grade to prevent habitable space from being flooded during a 200-year flood event.

Phase 1 would also include construction of a 37,500 sq. ft., two-story central plant building with parking level at grade. The central plant, which would provide power and heating to the entire Project site, would include four diesel-powered emergency generators on the second floor. Approximately 90,000 gallons of diesel fuel would be stored in two underground tanks that would be designed to withstand being submerged during a flood event. The central plant would also house support equipment for the hospital on the second level, have approximately 79 parking spaces on the ground level, provide an administrative mezzanine level, and include a 15,500 sq. ft. exterior mechanical yard. The main site access (West Taron Court) would be modified to provide a traffic circle drop-off area at the hospital and would consist of three lanes.

When completed, Phase 1 would include 241 patient beds and a total of 1,427 parking spaces consisting of 1,118 surface parking spaces (1,078 existing spaces retained and 40 new spaces), 230 parking spaces on the lower level of the hospital, and 79 parking spaces (stacked) on the base level of the central plant building.

PHASE 2

Phase 2 would include construction of a 136,500 sq. ft. patient-bed wing connected to the central tower atop the four-story main hospital podium, an outpatient clinic, a medical office building, and the first of two general-use parking structures serving the Project site (see Figure 2-14 in Chapter 2, "Project Description"). The addition of the second seven-story patient-bed tower would increase the hospital square footage to its ultimate size of 733,290 sq. ft. and 400 total patient beds. The 168,500 sq. ft. outpatient clinic would include four stories aboveground and one basement-floor parking level that would accommodate 100 parking spaces using a stacked parking system. This ambulatory care building would contain outpatient medical services. The 100,000 sq. ft. medical office building would include five stories aboveground and contain outpatient medical clinics and hospital administration offices. The first floor of the outpatient clinic and medical office building would be structurally elevated above the existing grade to prevent habitable space from being flooded during a 200-year event.

The parking structure would be 257,000 sq. ft. with four stories aboveground and one at basement level. The top floor would include approximately 50,000 sq. ft. of retail, medical offices, and/or other supporting uses. The basement level and three floors would provide parking for 1,700 vehicles. A semiautomatic stacked parking system is anticipated to be used on the three aboveground parking levels, and standard parking would be used at the basement level.

Phase 2 would modify the main access (West Taron Court) from a three-lane roadway to a four-lane roadway with a median and would create an expanded passenger pickup and drop-off area in front of the hospital (see Figure 2-14 in Chapter 2, "Project Description").

Upon completion of Phase 2, the Project would include a total of 2,699 parking spaces consisting of 590 surface parking spaces (520 existing spaces retained and 70 new spaces), 309 parking spaces on the lower levels of the hospital and central plant building, 100 spaces in the outpatient clinic, and 1,700 parking spaces in the parking structure.

PHASE 3

Phase 3 would include construction of a second general-use parking structure to serve the site, a dormitory, and a third parking structure for medical student use with sports facilities on the roof (see Figure 2-15 in Chapter 2, "Project Description"). The second parking structure would be 207,000 sq. ft. and would include four stories aboveground and one at basement level. The top floor would include approximately 40,000 sq. ft. of retail, food service, and other supporting uses. The basement level and other three floors would provide parking for 1,000 vehicles. A semiautomatic stacked parking system would be used on the three aboveground stories, and the basement level would have standard parking. Phase 3 would also include construction of a 120,000 sq. ft., five-story dormitory directly adjacent to the existing School of Medicine building that would include 150 units capable of housing approximately 300 students on four floors, and 24,000 sq. ft. for office space for administration support services. This building would be designed so that all habitable space is structurally elevated above the 200-year flood elevation.

A 70,000 sq. ft. parking structure intended to provide parking and recreational facilities for medical students would also be constructed during this phase. This student parking structure would include one parking level aboveground and one basement parking level that would accommodate 200 total standard parking spaces. The roof of this parking structure would have basketball, tennis, and volleyball courts.

With completion of Phase 3, the Project would include a total of 3,404 parking spaces consisting of 363 surface parking spaces (323 existing spaces retained and 40 new spaces), 41 parking spaces on the lower level of the central plant (the hospital basement would be used for support services under this phase, and the central plant would be converted to standard parking during Phase 3), 100 spaces in the outpatient clinic, 2,700 parking spaces in the parking structures, and 200 parking spaces in the student parking structure.

OTHER PROJECT IMPROVEMENTS

The Project would include the following additional improvements:

- ▶ Site amenities to serve bicycle and pedestrian circulation, including a Class I multipurpose trail along the eastern border of the Project site. An amendment to the City's Bicycle, Pedestrian, and Trails Master Plan is proposed to modify the planned Class I trail along this proposed alignment.
- ▶ Landscaping features, including:
 - monuments with directional signals, flowering shrubs, and accent lighting;
 - pedestrian-scale lighting and columnar trees along the streetscape;
 - canopy shade trees in parking lots;
 - pathways with low-scale lighting and other areas with pedestrian-scale lighting;
 - building gateways with seating elements, wayfinding signage, pedestrian-scale lighting, and flowering trees and shrubs; and
 - evergreen screen trees and shrubs, low-visibility fencing, and vehicular-scale lighting along the campus edge.
- ▶ Landscaped quad consisting of:
 - fully accessible amphitheater with a canopy-covered stage, formal and casual seating, and lawn terraces;
 - WiFi-ready outdoor rooms with casual seating and low-scale lighting;
 - rainwater gardens; and
 - a promenade designed for emergency vehicle access with wayfinding signage, casual seating, and pedestrian-scale lighting.
- ▶ On-site drainage and water quality improvements, including:
 - installation of low-impact development bioretention planters with underdrains and rain gardens in landscaped areas on the Project site to provide treatment benefits while reducing the volume of runoff that must be treated before discharge from the site and
 - installation of six 8-foot by 24-foot treatment vaults at stormwater discharge locations to treat residual runoff and address trash capture requirements.
- ▶ On-site water supply infrastructure upgrades to serve the fire and domestic water needs of the Project.
- ▶ On-site wastewater collection system upgrades.
- ▶ On-site recycled water infrastructure installation for connection to future off-site recycled water service lines.
- ▶ Upgrading of existing on-site electrical facilities and installation of a 338-megawatt on-site solar photovoltaic system.
- ▶ On-site natural gas service infrastructure improvements.
- ▶ Installation of 84 Level 2 electric vehicle charging stations with a dedicated 240-volt or 208-volt electrical circuit serving 166 parking spaces throughout the Project site.
- ▶ Off-site Project improvements:
 - left-turn pocket on westbound Elk Grove Boulevard for emergency vehicle use only;
 - off-site wastewater pipeline improvements along Riparian Drive; and
 - off-site electrical distribution system improvements, including:

- new 12-/69-kilovolt (kV) transformer at the existing Sacramento Municipal Utility District (SMUD) substation located southeast of the Elk Grove Boulevard/Franklin Boulevard intersection;
 - upgrades to the existing underground 12-kV distribution system within the public utility easement along Franklin Boulevard, Elk Grove Boulevard, and West Taron Drive;
 - addition of one 4-megavolt ampere (MVA) 12-kV primary service point for the hospital; and
 - addition of one new 2-MVA 12-kV primary service point for the central plant.
- ▶ Traffic operational improvements to be required by the City:
 - West Taron Drive/Riparian Drive intersection: signalize the intersection and provide two eastbound left-turn lanes;
 - Elk Grove Boulevard/I-5 northbound ramp intersection: signalize the intersection;
 - Elk Grove Boulevard/West Taron Drive/Harbour Point Drive intersection: modify the p.m. peak-hour traffic signal cycle length to 120 seconds;
 - Elk Grove Boulevard/Franklin Boulevard intersection: provide three northbound left-turn lanes by converting the inside southbound travel lane to develop a third northbound left-turn lane, which would require restriping the southbound travel lanes (north of Elk Grove Boulevard through the intersection). The General Plan includes the reduction in through travel lanes on Franklin Boulevard from six to four lanes. This will require a striping adjustment on the eastbound approach to accommodate the third northbound left-turn lane; and
 - West Taron Drive/Shell gas station driveway/Chevron gas station driveway intersection: modify the on-site design at the Project driveway associated with the parking garage to provide a southbound right-turn pocket.
 - ▶ Payment of City roadway impact fees set forth in City Municipal Chapter 16.95: Development Impact Fees.
 - ▶ Payment of fees set forth in City Municipal Code Chapter 16.96: Voluntary I-5 Subregional Corridor Transportation Improvements.

Potential Approvals and Permits Required

The following discretionary actions and permits are anticipated for the proposed Project.

LOCAL AND REGIONAL

- ▶ City approval of a General Plan Amendment to change the land use designation of six parcels from Community Commercial (CC) to Employment Center (EC) and for three parcels to be changed from Light Industrial (LI) to EC
- ▶ City approval of a zoning amendment to change the zoning designation of six parcels from General Commercial (GC) to Business and Professional Office Park (BP) and three from Industrial-Office Park (MP) to BP
- ▶ City approval of text amendments to General Plan Policy ER 2-3 and Elk Grove Municipal Code Section 23.42.040, related to development in the 200-year floodplain
- ▶ City approval of an amendment to the Bicycle, Pedestrian, and Trails Master Plan to modify the location of a proposed Class I multipurpose trail alignment
- ▶ City approval of a District Development Plan, including overall site plan approval and establishment of development elements, including, but not limited to, parking, landscaping, pedestrian improvements, general building size and location, and other features that are common across the site

- ▶ City approval of a Major Design Review for the architecture of the proposed Phase I buildings (hospital and central plant)
- ▶ City approval of a Conditional Use Permit
- ▶ City approval of a Uniform Sign Program
- ▶ City abandonment of West Taron Court
- ▶ City execution of the agreement for Elk Grove Police Department services
- ▶ Sacramento County Water Agency approval of water supply distribution facility improvements
- ▶ Sacramento Area Sewer District approval of wastewater conveyance facility improvements
- ▶ SMUD approval of electrical conveyance facility improvements
- ▶ Sacramento Metropolitan Air Quality Management District approval of an Authority to Construct and Permit to Operate

STATE

- ▶ California Department of Public Health approval of a radioactive material license and licensing to operate the hospital and other health care facilities
- ▶ California Office of Statewide Health Planning and Development Facilities Development Division approval of a building permit and certificate of occupancy
- ▶ California Department of Transportation Division of Aeronautics permitting of the hospital helistop under Section 21666 of the Public Utilities Code
- ▶ California Department of Fish and Wildlife approval of an incidental take permit pursuant to California Fish and Game Code Section 2081 for Swainson's hawk

FEDERAL

- ▶ Federal Aviation Administration actions under Federal Aviation Regulation Part 77 and Part 157 regarding objects affecting navigable air space and establishment of a helistop

PROJECT CERTIFICATION UNDER JOBS AND ECONOMIC IMPROVEMENT THROUGH ENVIRONMENTAL LEADERSHIP ACT

In September 2011, Governor Brown signed the Jobs and Economic Improvement Through Environmental Leadership Act (also known as Assembly Bill [AB] 900), which created Public Resources Code (PRC) Chapter 6.5 under Division 13 of the PRC (CEQA) and required the governor to establish procedures for applying for streamlined environmental review under CEQA for projects that meet certain requirements. Under PRC Section 21180(b)(1), the Project is considered a leadership project because it meets the following conditions:

A residential, retail, commercial, sports, cultural, entertainment, or recreational use project that is certified as LEED [Leadership in Energy and Environmental Design] gold or better by the United States Green Building Council and, where applicable, that achieves a 15-percent greater standard for transportation efficiency than for comparable projects. These projects must be located on an infill site. For a project that is within a metropolitan planning organization for which a sustainable communities strategy or alternative planning strategy is in effect, the infill project shall be consistent with the general use designation, density, building intensity, and applicable policies specified for the project area in either a sustainable communities strategy or an alternative planning strategy, for which the State Air Resources Board, pursuant to subparagraph (H) of

paragraph (2) of subdivision (b) of Section 65080 of the Government Code, has accepted a metropolitan planning organization's determination that the sustainable communities strategy or the alternative planning strategy would, if implemented, achieve the greenhouse gas emission reduction targets.

Applications are required to comply with the Governor's Guidelines for Streamlining Judicial Review under CEQA, provided on the Governor's Office of Planning and Research website and updated in January 2018 to comply with Senate Bill 734 (2016) and AB 246 (2017) (OPR 2019).

The Project Applicant submitted an application to the governor for certification that was subject to public review from September 24, 2019, through December 30, 2019. On December 17, 2019, the California Air Resources Board issued Executive Order G-19-159, which stated that implementing the Project would not result in any new additional greenhouse gas (GHG) emissions pursuant to PRC Section 21183(c). The governor certified the Project as an eligible project under AB 900 on December 30, 2019, and forwarded this determination to the Joint Legislative Budget Committee for consideration pursuant to PRC Section 21184(b)(2)(B). The Joint Legislative Budget Committee issued a concurrence letter on January 27, 2020. The Project application and supporting materials are provided in Appendix C.

ENVIRONMENTAL IMPACTS AND RECOMMENDED MITIGATION MEASURES

This EIR has been prepared pursuant to CEQA (PRC Section 21000 et seq.) and the State CEQA Guidelines (California Code of Regulations, Title 14, Chapter 3, Section 15000 et seq.) to evaluate the physical environmental effects of the proposed Project. The City is the lead agency for the Project. The City Council has the principal responsibility for approving the Project and for ensuring that the requirements of CEQA have been met.

Table ES-1, presented at the end of this chapter, provides a summary of the environmental impacts of the Project. The table identifies the level of significance of the impact before mitigation, recommended mitigation measures, and the level of significance of the impact after implementation of the mitigation measures.

For detailed discussions of all Project impacts and mitigation measures, the reader is referred to the topical environmental analysis in Chapter 3, "Environmental Setting, Impacts, and Mitigation Measures." Cumulative impacts are discussed in Chapter 4, "Cumulative Impacts."

SIGNIFICANT AND UNAVOIDABLE IMPACTS

Implementing the Project would result in the following significant and unavoidable impacts:

- ▶ Impact 3.1-1: Substantially Degrade the Existing Visual Character
- ▶ Impact 3.1-3: Create a New Source of Substantial Light or Glare That Would Adversely Affect Day or Nighttime Views
- ▶ Impact 3.2-3: Result in a Net Increase in Long-Term Operational Criteria Air Pollutant and Precursor Emissions That Exceed Sacramento Metropolitan Air Quality Management District (SMAQMD)-Recommended Thresholds
- ▶ Impact 3.11-1: Create Construction-Generated Noise
- ▶ Impact 3.11-4: Create Ambulance Siren Noise
- ▶ Impact 3.15-1: Environmental Impacts from Expansion of Infrastructure
- ▶ Impact 4-1: Contribute to Cumulative Visual Character Impacts
- ▶ Impact 4-2: Contribute to Cumulative Light and Glare Impacts
- ▶ Impact 4-5: Contribute to Cumulative Long-Term Operational Criteria Air Pollutant or Precursor Emissions
- ▶ Impact 4-16: Contribute to Cumulative Groundwater Impacts
- ▶ Impact 4-18: Contribute to Cumulative Construction Noise Impacts

- ▶ Impact 4-27: Contribute to Cumulative Water Supply Impacts
- ▶ Impact 4-28: Contribute to Cumulative Impacts for Wastewater Services

ALTERNATIVES TO THE PROPOSED PROJECT

The following alternatives are evaluated in this Draft EIR:

- ▶ **Alternative 1: No Project–No Development Alternative** assumes no demolition of the existing structure or construction of the Project. The Project site would remain in its current condition and would retain its General Plan and zoning designations.
- ▶ **Alternative 2: Reduced Development Alternative** includes a reduced hospital building height (approximately 165 feet [eight stories]) and 280 patient beds at buildout. This alternative also includes reduced parking (240 spaces) and elimination of the on-site helicopter landing site.
- ▶ **Alternative 3: Lent Ranch Marketplace Site Alternative** includes the Project proposed uses and buildings at an alternative site in the City of Elk Grove, located in the Lent Ranch Marketplace Special Planning Area.

Alternative 1: No Project–No Development Alternative would avoid the significant impacts of the Project and is considered the environmentally superior alternative. When the environmentally superior alternative is the No Project Alternative, the State CEQA Guidelines (Section 15126[d][2]) require selection of an environmentally superior alternative other than the No Project Alternative from among the other alternatives evaluated. As further addressed in Chapter 5, “Alternatives,” Alternative 2: Reduced Development Alternative would be the environmentally superior alternative.

AREAS OF CONTROVERSY

State CEQA Guidelines Section 15123 requires the summary section of a Draft EIR to identify the areas of controversy known to the lead agency, including issues raised by agencies and the public. The areas of controversy associated with the Project are:

- ▶ aesthetic impacts from the construction and operation of the Project related to visual character, height of the hospital building, daytime glare from building windows, and nighttime lighting impacts;
- ▶ air quality impacts from construction and operation of the Project;
- ▶ direct and indirect impacts of the Project and hospital building height on bird species and movement, as well as degradation of the Stone Lakes National Wildlife Refuge;
- ▶ discovery of prehistoric and historic-era resources, as well as any tribal cultural resources, during Project construction activities;
- ▶ Project impacts related to geologic and seismic hazards;
- ▶ how the Project would meet GHG emission thresholds, evaluate GHG emissions associated with the proposed mechanical yard, and evaluate Project consistency with the applicable GHG emission reduction;
- ▶ potentially hazardous materials that would be used on the Project site;
- ▶ compliance with regulations related to hazardous materials;
- ▶ identification of proposed helicopter operations, relevant Federal Aviation Administration standards, and potential compatibility with military airspace;
- ▶ evaluation of wildfire hazards caused by Project demolition, construction, or operations;
- ▶ water quality impacts on groundwater and stormwater, including impacts on the Stone Lakes National Wildlife Refuge;

- ▶ flooding impacts and Project impacts associated with development in the 200-year floodplain;
- ▶ Project consistency with existing general plans, policies, and codes;
- ▶ noise from fire drills, construction noise, parking facility noise, rooftop sport court noise, stationary noise sources (e.g., mechanical yard), emergency vehicle noise (e.g., ambulance sirens), helicopter noise, traffic-generated noise, and the Project's compliance with local noise standards;
- ▶ vibration impacts from Project construction;
- ▶ potential for the Project to induce growth and consistency with planning documents;
- ▶ impacts on fire and police protection;
- ▶ indirect effects on public services, including helicopter-ignited fires, emergencies related to the homeless, and drug/alcohol-related emergencies;
- ▶ Project construction and operation impacts on traffic volumes in the area;
- ▶ safety impacts and potential conflicts with pedestrians, bicyclists, and transit operations;
- ▶ utility facility expansions and improvements required by each Project phase;
- ▶ utility operation during a 200-year flood event; and
- ▶ water supply impacts related to compliance with Senate Bill 610, the Sacramento County Water Agency Groundwater Management Plan, and the Sustainable Groundwater Management Act.

These issues are each addressed in this Draft EIR. Any impacts related to these issues are identified either as less than significant or as less than significant after mitigation with the exception of the impacts identified under the heading "Significant and Unavoidable Impacts," above. Issues related to impacts identified as significant and unavoidable remain areas of controversy.

ISSUES TO BE RESOLVED

State CEQA Guidelines Section 15123 requires the summary section of a Draft EIR to identify issues to be resolved related to the proposed project. Issues to be resolved by the City are identified below, including issues that will not necessarily be resolved through the EIR:

- ▶ Should the Project be approved as proposed?
- ▶ Should new development of essential health care facilities be allowed in the 200-year floodplain in the City?
- ▶ Should the Project include an on-site helicopter landing site?
- ▶ Should the Project design be modified to reduce the height of the proposed hospital building?

Table ES-1 Summary of Impacts and Mitigation Measures

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
NI = No impact LTS = Less than significant PS = Potentially significant S = Significant SU = Significant and unavoidable			
Aesthetics			
Impact 3.1-1: Substantially Degrade the Existing Visual Character Construction activities would temporarily degrade the visual character of the Project site, as viewed from public views, as a result of construction staging, use of heavy equipment (e.g., cranes to construct the hospital building), and demolition activities. Although the Project site and surrounding area consist of urban land uses, Phase 1 and buildout of the Project would introduce new buildings that would substantially increase building heights and massing at the western edge of the City. The impact on visual character would be significant and unavoidable during both construction and operation of the Project.	SU	There are no feasible mitigation measures to address this impact.	SU
Impact 3.1-2 Consistency with Regulations Governing Site Design and Architecture Project site design and architectural character are regulated by the City through compliance with General Plan policies; compliance with Zoning Code Chapters 23.29, 23.54, and 23.62; and application of the Design Guidelines. The Project would not conflict with City design policies and guidelines that are associated with site design and architecture. Thus, this impact would be less than significant.	LTS	No mitigation is required.	LTS
Impact 3.1-3 Create a New Source of Substantial Light or Glare That Would Adversely Affect Day or Nighttime Views The Project site design would include building lighting, light fixtures in parking lots, interior pathways, and building gateways, and quad and promenade lighting that would increase nighttime lighting conditions in the Project area. Implementation of Mitigation Measure 3.1-3 would avoid daytime glare through the use of nonreflective materials consistent with City Design Guideline 11 Chapter 5B. Although the use of curtains or blinds would reduce the extent of hospital building interior lighting at night, it would not eliminate all building light sources, such as building entry features and the helicopter landing site. The helicopter landing site and building lighting must be visible pursuant to FAA regulations. These hospital building features would result in significant new sources of nighttime lighting within the Project area. Therefore, this impact would be significant and unavoidable.	SU	Mitigation Measure 3.1-3: Minimize Light and Glare from Hospital Building The following mitigation shall be incorporated into the final design of the hospital building: <ul style="list-style-type: none"> ▶ Each room with a window in the hospital building shall be equipped with a curtain or blinds of sufficient thickness to avoid lighting from escaping from the window at night. Operation of the hospital will require that curtains or blinds be drawn at night. ▶ All windows and glazing shall use nonreflective materials or be designed to eliminate daytime glare. The overall building will be designed to meet the requirements of the LEED Pilot Credit 55. This credit analyzes all the exterior materials used and limits the proportion of materials that are deemed to have a high threat factor to birds. This credit was crafted by the American Bird Conservatory and is their preferred guideline for building designers (as stated in their Bird Friendly Building Design Guide). 	SU

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
NI = No impact LTS = Less than significant PS = Potentially significant S = Significant SU = Significant and unavoidable			
		Prior to issuance of plan approval or building permit by the California Office of Statewide Health Planning and Development Facilities Development Division, the Project Applicant shall submit documentation to the City Development Services Department to verify compliance with this measure.	
Air Quality			
Impact 3.2-1: Conflict with or Obstruct Implementation of an Applicable Air Quality Plan SMAQMD and other air districts in the SVAB developed air quality plans to enable the region to achieve attainment of the federal 8-hour ozone standard and the California 1-hour and 8-hour ozone standards. These air quality plans are based on an inventory of existing emission sources, as well as projections about the future level of land use development in the SVAB. Because the levels of growth associated with the Project were accounted for in these projections of emissions-generating activity, the Project would be consistent with applicable air quality plans. This impact would be less than significant.	LTS	No mitigation is required.	LTS
Impact 3.2-2: Cause Construction-Generated Criteria Air Pollutant or Precursor Emissions to Exceed SMAQMD Thresholds Construction-related activities would result in Project-generated emissions of ROG, NO _x , PM ₁₀ , and PM _{2.5} from site preparation, off-road equipment, material and equipment delivery trips, worker commute trips, building construction, and other miscellaneous activities. Construction activities would result in mass emissions of NO _x , PM ₁₀ , and PM _{2.5} that exceed SMAQMD's thresholds. Therefore, construction-generated emissions of criteria air pollutants and ozone precursors may contribute to the existing nonattainment status of the SVAB with respect to the NAAQS and CAAQS for ozone. Implementation of Mitigation Measures 3.2.2-a and 3.2.2-b would reduce this impact to a less-than-significant level.	S	Mitigation Measure 3.2-2a: Implement Construction Emission Control Practices The following basic and enhanced emission control practices recommended by SMAQMD for the reduction of NO _x , PM ₁₀ , and PM _{2.5} shall be implemented during construction and included in Project improvement plans. The City Development Services Department will verify compliance with these measures identified below. Basic Construction Emission Control Practices <ul style="list-style-type: none"> ▶ Water all exposed surfaces two times daily. Exposed surfaces include, but are not limited to, soil piles, graded areas, unpaved parking areas, staging areas, and access roads. ▶ Cover or maintain at least 2 feet of freeboard 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 shall be covered. ▶ Use wet power vacuum street sweepers to remove any visible trackout mud or dirt onto adjacent public roads at least once a day. Use of dry power sweeping is prohibited. ▶ Limit vehicle speeds on unpaved roads to 15 miles per hour. 	LTS

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
NI = No impact LTS = Less than significant PS = Potentially significant S = Significant SU = Significant and unavoidable			
		<ul style="list-style-type: none"> ▶ Complete the paving of all roadways, driveways, sidewalks, and parking lots to be paved 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 by reducing the time of idling to 5 minutes (California Code of Regulations, Title 13, Sections 2449[d][3] and 2485). Provide clear signage that posts this requirement for workers at the entrances to the site. ▶ Provide current certificate(s) of compliance for CARB's In-Use Off-Road Diesel-Fueled Fleets Regulation (California Code of Regulations, Title 13, Sections 2449 and 2449.1). For more information, contact CARB at 877-593-6677, doors@arb.ca.gov, or www.arb.ca.gov/doors/compliance_cert1.html. ▶ Maintain all construction equipment in proper working condition according to manufacturers' specifications. The equipment must be checked by a certified mechanic and determined to be running in proper condition before it is operated. <p><u>Enhanced On-Site Exhaust Controls</u></p> <ul style="list-style-type: none"> ▶ The Project Applicant, or its designee, shall provide a plan for approval by SMAQMD that demonstrates that the heavy-duty off-road vehicles (50 horsepower or more) to be used 8 hours or more during Project construction will achieve a Project-wide fleet average 10-percent NO_x reduction compared to the most recent CARB fleet average. Acceptable options for reducing emissions may include use of cleaner engines, low-emission diesel products, alternative fuels, engine retrofit technology, after-treatment products, and/or other options as they become available. The plan shall have two components: an initial report submitted before construction and a final report submitted at the completion. <ul style="list-style-type: none"> ▪ Submit the initial report at least 4 business days before construction activity begins using SMAQMD's Construction Mitigation Tool (http://www.airquality.org/businesses/ceqa-land-use-planning/mitigation). ▪ Provide Project information and construction company information. ▪ Include the equipment type, horsepower rating, engine model year, projected hours of use, and CARB equipment identification number 	

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
NI = No impact LTS = Less than significant	PS = Potentially significant	S = Significant SU = Significant and unavoidable	
		<p>for each piece of equipment in the plan. Incorporate all owned, leased, and subcontracted equipment to be used.</p> <ul style="list-style-type: none"> ▪ Submit the final report at the end of the job, phase, or calendar year, as prearranged with SMAQMD staff and documented in the approval letter, to demonstrate continued Project compliance. ▶ SMAQMD may conduct periodic site inspections to determine compliance. Nothing in this mitigation shall supersede other air district, State, or federal rules or regulations. ▶ On-site exhaust controls identified above will sunset on January 1, 2028, when full implementation of the CARB In-Use Off-Road Regulation is expected. <p>Mitigation Measure 3.2-2b: Pay Off-Site Construction Mitigation Fees Because modeled construction emissions of NO_x would not be reduced below SMAQMD's significance threshold with the implementation of its enhanced exhaust control measures, the Project Applicant must pay a mitigation fee into SMAQMD's off-site mitigation program. By paying the appropriate off-site mitigation fee, construction-generated emissions of NO_x will be reduced to a less-than-significant level. The fee calculation to offset daily NO_x emissions is based on the SMAQMD-determined cost to reduce 1 ton of NO_x (currently \$30,000 per ton but subject to change in future years) and an administrative fee of 5 percent.</p> <p>The Project Applicant, or its designee, shall pay the mitigation and administrative fees in full before the City Development Services Department issues any grading permits that would allow activity that would exceed SMAQMD's threshold. An alternative payment plan may be negotiated by the Project Applicant, or its designee, based on the timing of construction phases that are expected to exceed SMAQMD's threshold of significance. Any alternative payment plan must be acceptable to SMAQMD and agreed upon in writing before issuance of any grading permits by the City.</p> <p>In coordination with the City and SMAQMD, the Project Applicant, or its designee, may reanalyze construction NO_x emissions from the Project before starting construction to update the estimated Project emissions and associated mitigation fees, based on Project-specific information or emissions modeling software available at that time. If an updated analysis is performed, it must be submitted to the City for approval prior to issuance of any grading permits to</p>	

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		ensure compliance with this mitigation measure. If construction NOX emissions are reanalyzed, the following requirements apply: <ul style="list-style-type: none"> ▶ The analysis must be conducted using SMAQMD-approved emission model(s) and the fee rates published at the time of reanalysis. ▶ The analysis may include on-site measures to reduce construction emissions if deemed feasible by the City. 	
Impact 3.2-3: Result in a Net Increase in Long-Term Operational Criteria Air Pollutant and Precursor Emissions That Exceed SMAQMD-Recommended Thresholds Operation of the Project would generate emissions of ROG and NO _x , which are precursors to ozone, and PM ₁₀ and PM _{2.5} . ROG, NO _x , and PM ₁₀ emissions would exceed the applicable mass emission thresholds adopted by SMAQMD. Although implementation of available mitigation measures would reduce operational emissions to the extent feasible, the Project's maximum daily emissions of ROG, NO _x , and PM ₁₀ and annual emissions of PM ₁₀ would continue to exceed SMAQMD thresholds. Thus, long-term operational emissions of ROG, NO _x , and PM ₁₀ may contribute substantially to the nonattainment status of the SVAB with respect to the NAAQS and CAAQS for ozone and the CAAQS for PM ₁₀ . Even with implementation of Mitigation Measures 3.2-3a, 3.2-3b, and 3.2-3c, this impact would be significant and unavoidable.	S	Mitigation Measure 3.2-3a: Implement Mitigation Measure 3.14-1, Transportation Demand Management Plan Mitigation Measure 3.2-3b: Implement Mitigation Measure 3.7-1a, Reduce GHG Emissions On-Site Mitigation Measure 3.2-3c: Reduce Area-Source Emissions On-Site The Project Applicant shall implement the following measures to reduce area-source emissions: <ul style="list-style-type: none"> ▶ All landscape equipment will be electric. Design features that would support the use of electric landscape equipment may include, but will not be limited to installing multiple electrical receptacles on the exterior of all Project buildings that would be accessible for purposes of charging or powering electric landscaping equipment and provide an alternative to using fossil fuel-powered generators. ▶ All architectural coatings (e.g., paint) used in Project buildings and parking areas will not exceed a volatile organic compound content of 50 grams per liter. 	SU
Impact 3.2-4: Expose Sensitive Receptors to Substantial Increases in TAC Emissions Construction of Project buildings and off-site improvements and the addition of operational mobile sources to existing roadways would not result in the exposure of sensitive receptors to an incremental increase in cancer risk greater than 10 in 1 million or a hazard index greater than 1. However, should multiple new stationary sources associated with the proposed central plant be sited near one another, the combined emissions may result in higher levels of TAC concentrations. Additionally, some Project buildings associated with commercial, hospital, and educational uses would include truck loading/unloading facilities near residences, student housing, and child daycare, which may result in the exposure of these sensitive receptors to a	S	Mitigation Measure 3.2-4: Incorporate Design Features at Truck Loading Areas to Reduce Health-Risk Exposure at Sensitive Receptors Prior to operation of any project component that has a loading dock, the Project Applicant shall design Project buildings so that truck loading/unloading facilities and sensitive receptors are not located within 1,000 feet of each other, considering site design parameters. For the purpose of this mitigation measure, a truck loading/unloading facility is defined as any truck loading dock or truck loading or unloading area where more than one fossil fuel-powered truck with three or more axles will be present and idling for more than 10 minutes per week, on average, and sensitive receptors include residential land uses, campus dormitories and student housing, residential care facilities, schools, parks, playgrounds, and daycare facilities. A truck	LTS

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<p>level of cancer risk greater than 10 in 1 million. Implementation of Mitigation Measure 3.2-4 would ensure that a sensitive receptor (e.g., residences) and a truck loading/unloading facility would not be located within 1,000 feet of each other, which is the CARB-recommended setback distance (CARB 2005:15), unless a site-specific health risk assessment (HRA) shows that the associated level of cancer risk at the sensitive receptors would not exceed 10 in 1 million. Therefore, sensitive receptors would not be exposed to TAC concentrations that exceed 10 in 1 million. This impact would be reduced to less than significant with mitigation incorporated.</p>		<p>loading/unloading facility and a sensitive receptor can be located within 1,000 feet of each other only if the Project Applicant prepares a qualified, site-specific HRA showing that the associated level of cancer risk at the sensitive receptors shall not exceed 10 in 1 million. The HRA shall be conducted in accordance with guidance from SMAQMD. If the HRA determines that a nearby sensitive receptor would be exposed to an incremental increase in cancer risk greater than 10 in 1 million, then design measures shall be incorporated to reduce the level of risk exposure to less than 10 in 1 million. Design measures may include but are not limited to the following measures to reduce emissions:</p> <ul style="list-style-type: none"> ▶ Require all truck loading/unloading facilities to be equipped with one 110-/208-volt power outlet for every two dock doors or truck parking spaces. A minimum 2-foot-by-3-foot sign shall be clearly visible at each loading dock stating, "Diesel engine idling limited to a maximum of 5 minutes." The sign shall include instructions for diesel trucks idling more than 5 minutes to connect to the 110-/208-volt power to run any auxiliary equipment. ▶ Use electric-powered "yard trucks" or forklifts to move truck trailers around a truck loading/unloading facility. ▶ Use buildings or walls to shield truck activity from nearby sensitive land uses. ▶ Plant and maintain a vegetative buffer between the truck loading/unloading facility and nearby sensitive receptors. As part of the detailed site design, a landscape architect licensed by the California Landscape Architects Technical Committee shall identify all locations where trees should be located, accounting for areas where shade is desired, such as along pedestrian and bicycle routes, the locations of solar photovoltaic panels, and other infrastructure. <p>Documentation in compliance with this mitigation measure will be provided to the City Development Services Department prior to operation of each building.</p>	
<p>Impact 3.2-5: Result in Other Emissions (Such as Those Leading to Odors) Adversely Affecting a Substantial Number of People</p> <p>The Project would introduce new odor sources into the area (e.g., temporary diesel exhaust emissions during construction and from delivery trucks associated with operation of the hospital, commercial, and educational land</p>	LTS	No mitigation is required.	LTS

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<p>uses). However, these odors would be temporary and intermittent and would dissipate rapidly. Further, the Project would not locate land uses near any existing odor sources. The Project is not anticipated to result in the installation of any major odor sources that would result in a potentially significant impact on the occupants of the proposed land uses. As a result, potential exposure of sensitive receptors to odors would be a less-than-significant impact.</p>			
Biological Resources			
<p>Impact 3.3-1: Disturbance to or Loss of Special-Status Wildlife Species or Habitat as a Result of Construction Activities</p> <p>Project construction would include ground disturbance, tree removal, building demolition, and construction of new buildings, which may result in disturbance to or loss of special-status wildlife species and reduced breeding productivity of these species. Implementation of Mitigation Measures 3.3-1a and 3-3-1b would reduce significant impacts on Swainson's hawk, white-tailed kite, other raptors, other common native nesting birds, burrowing owl, greater sandhill crane, and lesser sandhill crane as a result of tree removal, construction, and off-site improvement activities because it would require preactivity surveys; implementation of avoidance measures (e.g., no-disturbance buffers) to prevent injury, mortality, disturbance, and nest abandonment if active nests are determined to be present on or near the Project site or off-site improvements; and minimization of construction noise during nighttime hours. These mitigation measures would reduce impacts to a less-than-significant level.</p>	S	<p>Mitigation Measure 3.3-1a: Conduct Preactivity Nesting Bird Surveys and Implement Avoidance Measures</p> <p>Before construction activities begin, the following measures, which are intended to avoid and minimize impacts on special-status birds, raptors, and common native nesting birds, shall be implemented. These measures shall be reflected in Project improvement plans to the satisfaction of the City Development Services Department and Public Works Department.</p> <p><u>Swainson's Hawk, White-Tailed Kite, and Other Raptors</u></p> <ul style="list-style-type: none"> ▶ Prior to initiation of any Project activities during the nesting bird season (February 1–August 31), a qualified biologist shall conduct preconstruction surveys for nesting raptors and shall identify active nests within 0.5 mile (for Swainson's hawk) and within 0.25 mile (for white-tailed kite and other nesting raptors) of the Project site and off-site improvement areas. The surveys shall be conducted between February 1 and August 31, no more than 7 days prior to initiation of construction activities. The results of these surveys shall be provided to the City Development Services Department. ▶ Impacts on nesting Swainson's hawks and other raptors shall be avoided by establishing appropriate buffers around active nest sites identified during preconstruction raptor surveys. Project activities shall not commence within the buffer areas until a qualified biologist has determined, in consultation with CDFW, that the young have fledged, that the nest is no longer active, or that reducing the buffer would not likely result in nest abandonment. CDFW guidelines recommend implementation of a 0.5-mile-wide buffer for Swainson's hawk and a 500-foot buffer for other raptors, but the size of the buffer may be adjusted if a qualified biologist, in consultation with CDFW, determines that such an adjustment would not be likely to adversely affect the nest. Factors to be 	LTS

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		<p>considered for determining buffer location will include presence of natural buffers provided by vegetation, buildings, or topography; nest height above ground; baseline levels of noise and human activity (e.g., I-5, other nearby urban development); and species sensitivity. Monitoring of the nest by a qualified biologist during and after construction activities shall be required if the activity has potential to adversely affect the nest. 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 shall be increased until the agitated behavior ceases.</p> <p><u>Common Native Birds</u></p> <ul style="list-style-type: none"> ▶ To minimize the potential for disturbance to or loss of common native bird nests, tree and other vegetation removal activities within the Project site shall occur only during the nonbreeding season (September 1–January 31). ▶ If all tree removal activities are not completed prior to the start of the bird nesting season (February 1), a qualified biologist shall conduct a preactivity nesting bird survey within all trees planned for removal. If no bird nests are discovered, further mitigation is not required prior to tree removal. ▶ If active nests are observed, a no-disturbance buffer shall be implemented around the nest, and tree removal shall not commence until the nest is determined to be inactive by a qualified biologist and all young have fledged. Buffer size will be determined by a qualified biologist. Factors to be considered for determining buffer location will include presence of natural buffers provided by vegetation, buildings, or topography; nest height above ground; baseline levels of noise and human activity (e.g., roads, other nearby urban development); and species sensitivity. <p><u>Burrowing Owl</u></p> <ul style="list-style-type: none"> ▶ The implementing party shall retain a qualified biologist to conduct focused breeding and nonbreeding season surveys for burrowing owls in areas of suitable habitat on and within 1,500 feet of the SMUD distribution substation site (i.e., public utility easement adjacent to Stone Lakes National Wildlife Refuge). Surveys shall be conducted prior to the 	

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		<p>start of off-site improvement activities and in accordance with Appendix D of CDFW's <i>Staff Report on Burrowing Owl Mitigation</i> (CDFW 2012) or the most recent CDFW protocols. The results of these surveys shall be provided to the City Development Services Department.</p> <ul style="list-style-type: none"> ▶ If no occupied burrows are found, a letter report documenting the survey methods and results shall be submitted to CDFW, and no further mitigation will be required. ▶ If an active burrow is found during the nonbreeding season (September 1–January 31), the implementing party shall consult with CDFW regarding protection buffers to be established around the occupied burrow and maintained throughout off-site improvement activities adjacent to the burrow. If occupied burrows are present that cannot be avoided or adequately protected with a no-disturbance buffer, a burrowing owl exclusion plan shall be developed, as described in Appendix E of CDFW's 2012 Staff Report, and provided to the City Planning Division. Burrowing owls shall not be excluded from occupied burrows until the Project's burrowing owl exclusion plan is approved by CDFW. The exclusion plan shall include a plan for creation, maintenance, and monitoring of artificial burrows that are located in suitable habitat near the burrows to be destroyed and that provide substitute burrows for displaced owls. ▶ If an active burrow is found during the breeding season (February 1–August 31), occupied burrows shall not be disturbed and shall be provided with a 150- to 1,500-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 shall depend on the time of year and level of disturbance as outlined in the CDFW Staff Report (CDFW 2012) or the most recent CDFW protocols. The size of the buffer may be reduced if a broad-scale, long-term monitoring program acceptable to CDFW is implemented to ensure that burrowing owls are not detrimentally affected. After the fledglings are capable of independent survival, the owls can be evicted and the burrow can be destroyed pursuant to the terms of a CDFW-approved burrowing owl exclusion plan developed in accordance with Appendix E of CDFW's 2012 Staff Report or the most recent CDFW protocols. 	

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		<p>► If active burrowing owl nests are found on the site and are destroyed by implementation of off-site improvements, the implementing party shall mitigate the loss of occupied habitat in accordance with guidance provided in the CDFW 2012 Staff Report, which states that permanent impacts on nesting, occupied, and satellite burrows and on burrowing owl habitat shall be mitigated such that the habitat acreage, number of burrows, and active burrows affected are replaced through permanent conservation of comparable or better habitat with similar vegetation communities and burrowing mammals (e.g., ground squirrels) present to provide for nesting, foraging, wintering, and dispersal. The implementing party shall retain a qualified biologist to develop a burrowing owl mitigation and management plan to be provided to the City Development Services Department that incorporates the following goals and standards:</p> <ul style="list-style-type: none"> ▪ Mitigation lands shall be selected based on comparison of the habitat lost to the compensatory habitat, including type and structure of habitat; disturbance levels; potential for conflicts with humans, pets, and other wildlife; density of burrowing owls; and relative importance of the habitat to the species range wide. ▪ If feasible, mitigation lands shall be provided adjacent to or otherwise near the site so that displaced owls can relocate with reduced risk of take. The feasibility of providing mitigation adjacent to or otherwise near the Project site depends on the availability of sufficient suitable habitat to support displaced owls that may be preserved in perpetuity. ▪ If suitable habitat is not available for conservation adjacent to or otherwise near the Project site, mitigation lands shall be focused on consolidating and enlarging conservation areas outside of urban and planned growth areas and within foraging distance of other conservation lands. Mitigation may be accomplished through purchase of mitigation credits at a CDFW-approved mitigation bank, if available. If mitigation credits are not available from an approved bank and mitigation lands are not available adjacent to other conservation lands, alternative mitigation sites and acreage shall be determined in consultation with CDFW. 	

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		<ul style="list-style-type: none"> ▪ If mitigation is not available through an approved mitigation bank and will be completed through permittee-responsible conservation lands, the mitigation plan shall include mitigation objectives, site selection factors, site management roles and responsibilities, vegetation management goals, financial assurances and funding mechanisms, performance standards and success criteria, monitoring and reporting protocols, and adaptive management measures. Success shall be based on the number of adult burrowing owls and pairs using the site and whether the numbers are maintained over time. Measures of success, as suggested in the 2012 Staff Report, shall include site tenacity, the number of adult owls present and reproducing, colonization by burrowing owls from elsewhere, changes in distribution, and trends in stressors. <p>Mitigation Measure 3.3-1b: Implement Measures to Reduce Impacts on Roosting Birds as a Result of Construction Noise</p> <p>This measure, which is intended to avoid and minimize disturbance to roosting greater and lesser sandhill cranes within the nearby Stone Lakes National Wildlife Refuge, shall be implemented during construction. It shall be reflected in Project improvement plans to the satisfaction of the City Development Services Department and Public Works Department:</p> <ul style="list-style-type: none"> ► If construction activities will occur during the sandhill crane overwintering season (September 15–March 15), construction noise shall be reduced such that the noise level does not exceed 50 A-weighted decibels (dBA) equivalent continuous sound level (L_{eq}) (1 hour) at the nearest roost site in Stone Lakes National Wildlife Refuge, as shown in Draft EIR Figure 3.3-1, during nighttime hours (i.e., from 1 hour before sunset to 1 hour after sunrise). The dBA L_{eq} is a measurement used to characterize noise levels in loud environments. The result is expressed in dBA, a weighted decibel scale that filters frequency components to roughly imitate the hearing profile of the human ear. This can be accomplished by limiting construction activities that may result in noise levels exceeding 50 dBA at the roost site to daytime only (from 1 hour after sunrise to 1 hour before sunset). 	
Impact 3.3-2: Loss of Special-Status and Common Migratory Bird Species from Bird Strikes as a Result of Helicopter Operation and Hospital Building Design	PS	Mitigation Measure 3.3-2a: Implement Mitigation Measure 3.1-3: Minimize Light and Glare from Hospital Building	LTS

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<p>Project implementation would result in construction of a new hospital building that is 261 feet in height and helicopter trips to and from the hospital. Both of these conditions would be novel to local bird populations, including migratory waterbirds, and sandhill cranes using the Stone Lakes National Wildlife Refuge and nearby nesting Swainson's hawks. Bird collisions with the new 261-foot-tall building, as well as bird strikes with helicopters operating in the vicinity of the Project site, may result in injury or mortality of special-status and common migratory birds. Implementation of Mitigation Measures 3.3-2a, 3.3-2b, 3.3-2c, 3.3-2d, and 3.3-2e would reduce the potentially significant impact on birds as a result of building strikes, nighttime lighting, and helicopter operation because it would require minimization of artificial lighting and glare; compliance with the Leadership in Energy and Environmental Design (LEED) Pilot Credit 55 for bird collision deterrence, the use of helicopter landing site lighting that would minimize impacts on wildlife; seasonal restrictions and altitude and airspeed restrictions for helicopter operation; and consultation with CDFW, an incidental take permit, and potential compensatory mitigation for impacts on Swainson's hawk as a result of helicopter operation. Therefore, this impact would be mitigated to less than significant.</p>		<p>Mitigation Measure 3.3-2b: Comply with U.S. Green Building Council Pilot Credit 55 as Part of Leadership in Energy and Environmental Design Certification</p> <p>Consistent with its AB 900 application, the Project, upon completion, shall qualify for LEED Gold certification or better. Qualification for LEED Gold certification includes commitments to various green building strategies. The Project Applicant shall include Pilot Credit 55, "Bird Collision Deterrence," as part of the LEED certification process. This credit was crafted by the American Bird Conservatory and is their preferred guideline for building designers. To qualify for Pilot Credit 55, the Project Applicant must demonstrate that building façade, site features, and exterior lighting are "bird friendly" through calculating the overall "Bird Collision Threat Rating" based on established threat factor ratings. Threat factor ratings are based on various features, including but not limited to building materials, building size, and photometric characteristics of lighting to make the building visible as a physical barrier and eliminate conditions that create confusing reflections to birds. Additionally, Pilot Credit 55 requires development of a 3-year postconstruction monitoring plan to monitor the effectiveness of the buildings and site design in preventing bird collisions, including potential design solutions and a process for corrective action. This mitigation measure shall be implemented consistently with the performance standards in Mitigation Measure 3.1-3.</p> <p>Prior to issuance of plan approval or building permit by the California Office of Statewide Health Planning and Development Facilities Development Division, the Project Applicant shall submit the site plan, architectural elevations, and lighting plans to the City Development Services Department to verify compliance with this measure. The Project Applicant shall also provide a copy of the 3-year postconstruction monitoring plan and identification of any corrective actions to address bird strikes to the City Development Services Department.</p> <p>Mitigation Measure 3.3-2c: Use Flashing Lighting on the Helicopter Landing Site</p> <p>Prior to issuance of plan approval or building permit by the California Office of Statewide Health Planning and Development Facilities Development Division, the Project Applicant shall submit the final hospital building plans to the City Development Services Department to verify compliance with this measure:</p>	

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		<ul style="list-style-type: none"> ▶ Beacon lighting associated with the proposed helicopter landing site shall flash several times per minute rather than burn steadily consistent with Federal Aviation Administration standards and guidance. Steadily burning lights have been shown to attract birds more than flashing lights (FAA 2012). <p>Mitigation Measure 3.3-2d: Implement Seasonal Helicopter Flight Restrictions, Altitude Restrictions, and Airspeed Restrictions over Stone Lakes National Wildlife Refuge</p> <p>The following requirements shall be contained with the Conditional Use Permit associated with the operation of the helistop. The Project Applicant shall provide annual reporting demonstrating compliance with these requirements to the City Development Services Department:</p> <ul style="list-style-type: none"> ▶ During the sandhill crane overwintering season (September 15 through March), helicopters arriving at or departing from the hospital from 1 hour before sunset to 1 hour after sunrise avoid flying adjacent or over the known sandhill crane roost sites shown in Draft EIR Figure 3.3-1. ▶ Every year, prior to the start of the nesting season for Swainson's hawk and white-tailed kite, a qualified biologist shall determine the locations of active nests for both species within Stone Lakes National Wildlife Refuge and other areas within 0.5 mile of the hospital. Nest locations shall be determined through focused surveys and through consultation with refuge biologists at Stone Lakes National Wildlife Refuge. <p>If active Swainson's hawk or white-tailed kite nests are detected within Stone Lakes National Wildlife Refuge or other areas within 0.5 mile of the Project site, the qualified biologist shall map the nest locations and a 0.5-mile buffer around each nest and shall provide this map to the Project Applicant. The Project Applicant shall prepare and publish a graphic illustration "handout" for assisting helicopter pilots which depicts the recommended arrival and departure flight tracts for helicopters using the helicopter landing site. Helicopters shall avoid flying over these nests or within the 0.5-mile buffer around the nests when arriving or departing the hospital. Helicopters shall avoid these areas until the nests are no longer active (e.g., chicks have fledged), as verified by a qualified biologist.</p>	

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		<ul style="list-style-type: none"> ▶ Helicopters shall operate at altitudes of 2,000 feet or greater AGL when flying over or adjacent to any portion of Stone Lakes National Wildlife Refuge, except for during final descent into the helicopter landing area. If altitudes lower than 2,000 feet AGL are required because of weather conditions or other safety issues, the helicopter pilot shall operate over nonrefuge areas. ▶ Helicopters shall operate at speeds no greater than 80 knots when flying over or adjacent to any portion of Stone Lakes National Wildlife Refuge. If speeds greater than 80 knots are required because of safety concerns, the helicopter pilot shall operate over nonrefuge areas. <p>The Project Applicant shall provide these operation restrictions to all helicopter service providers in a manual or other documentation and require that helicopters comply with these restrictions. Proof of this documentation shall be provided to the City Development Services Department prior to operation of the helistop.</p> <p>Mitigation Measure 3.3-2e: Consult with CDFW and Obtain an Incidental Take Permit for Potential Loss of Swainson's Hawks from Helicopter Strikes</p> <p>Prior to operation of helistop at the hospital, the Project Applicant shall consult with CDFW to determine whether there are additional avoidance measures available that would reduce the likelihood of helicopter strikes by nearby nesting Swainson's hawks or that would reduce risk of abandonment of active Swainson's hawk nest sites, and whether an incidental take permit pursuant to California Fish and Game Code Section 2081 would be required for take of Swainson's hawk. If the permit is required, the Project Applicant shall implement measures required under the permit, which may include compensatory mitigation for impacts on a Swainson's hawk territory and potential loss of an active nest site. Compensatory mitigation may include participation in the City Municipal Code Chapter 16.130 (Swainson's Hawk Impact Mitigation Fees), in-lieu purchase of credits at a CDFW-approved mitigation bank in Sacramento County or off-site habitat creation, or restoration through a conservation easement. Impact minimization may also include a program to identify and monitor active nests during the nesting season in collaboration with CDFW. Documentation of compliance with this mitigation measure shall be provided to the City Development Services Department prior to helistop operation.</p>	

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Impact 3.3-3: Interference with Resident or Migratory Wildlife Corridors or Native Wildlife Nursery Sites Project implementation would largely include activities on a previously developed site that is not currently serving as a wildlife corridor and that does not contain native wildlife nursery sites. The Project site is, however, close to Stone Lakes National Wildlife Refuge, which is an important stopover and wintering area for migrating waterfowl, shorebirds, and greater sandhill cranes. Building design features would reduce some of the risk of bird-building collisions. However, Project implementation, namely construction of the new hospital building, may disrupt resident or migratory wildlife corridors, and operation of helicopters may result in adverse effects, including abandonment of native wildlife nursery sites or important wintering sites. Implementation of Mitigation Measures 3.3-3a, 3.3-3b, 3.3-3c, and 3.3-3d would reduce the potentially significant impact on migratory wildlife corridors and rookeries and roost sites in Stone Lakes National Wildlife Refuge associated with building strikes, nighttime lighting, and helicopter operation to a less-than-significant level because it would require minimization of artificial lighting and glare, the use of lighting that would minimize impacts on wildlife, minimization of landscaping (e.g., trees and shrubs) adjacent to ground level windows, and seasonal restrictions and altitude and airspeed restrictions for helicopter operation.	PS	Mitigation Measure 3.3-3a: Implement Mitigation Measure 3.1-2: Minimize Light and Glare from Hospital Building Mitigation Measure 3.3-3b: Implement Mitigation Measure 3.3-2a: Comply with U.S. Green Building Council Pilot Credit 55 as Part of Leadership in Energy and Environmental Design Certification Mitigation Measure 3.3-3c: Implement Mitigation Measure 3.3-2c: Use Flashing Lighting on the Helicopter Landing Site Mitigation Measure 3.3-3d: Implement Mitigation Measure 3.3-2d: Implement Seasonal Helicopter Flight Restrictions, Altitude Restrictions, and Airspeed Restrictions over Stone Lakes National Wildlife Refuge	LTS
Impact 3.3-4: Consistency with Local Plans and Policies The Project would not remove any trees designated as trees of local importance under City of Elk Grove Municipal Code Chapter 19.12: Tree Preservation and Protection. Implementation of Mitigation Measure 3.3-4 would require identification and protection measures for trees of local importance and would avoid potential trees impacts to a less-than-significant level.	PS	Mitigation Measure 3.3-4: Implement Protection Measures for Trees of Local Importance Project improvement plans for each phase shall identify the location of the eight coastal live oak trees that meet the definition of a tree of local importance and shall specify measures to avoid damage to these trees. This shall include at a minimum protective fencing and signage. These plans shall be provided to the City Development Services Department for review and verification of this measure prior to the start of the construction activities.	LTS
Cultural Resources			
Impact 3.4-1: Cause a Substantial Adverse Change in the Significance of Archaeological Resources Implementation of the Project would result in demolition of on-site structures, construction of a new medical center campus and associated facilities and amenities, and construction of off-site transportation and utility improvements.	PS	Mitigation Measure 3.4-1a: Develop and Implement a Worker Environmental Awareness Program The Project Applicant shall retain a qualified professional archaeologist meeting the Secretary of the Interior's Professional Qualification Standards for archaeologists to prepare a worker environmental awareness program. The	LTS

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<p>Although no known archaeological resources have been identified on the Project site or in the areas identified for off-site improvements, Project-related ground-disturbing activities may result in the discovery or damage of yet undiscovered archaeological resources as defined in State CEQA Guidelines Section 15064.5. Implementation of Mitigation Measures 3.4-1a and 3.4-1b would reduce this impact to a less-than-significant level by requiring that a worker environmental awareness program be prepared and provided to all construction personnel and supervisors who will have the potential to encounter and alter heritage and cultural resources, requiring construction to halt if potential archaeological resources are discovered, coordination with Native American groups (if applicable), implementation of preservation options (including data recovery, mapping, capping, or avoidance), and proper curation if significant artifacts are recovered.</p>		<p>program shall be provided to all construction personnel and supervisors who will have the potential to encounter and alter heritage and cultural resources. A copy of the worker environmental awareness program shall be provided to the City Development Services Department before construction activities begin. The topics to be addressed in the worker environmental awareness program will include, at a minimum:</p> <ul style="list-style-type: none"> ▶ types of cultural resources expected on the Project site; ▶ types of evidence that indicates cultural resources might be present (e.g., ceramic shards, lithic scatters); ▶ what to do if a worker encounters a possible resource; ▶ what to do if a worker encounters bones or possible bones; and ▶ penalties for removing or intentionally disturbing heritage and cultural resources, such as those identified in the Archaeological Resources Protection Act. <p>Mitigation Measure 3.4-1b: Procedures for Discovery of Subsurface Archaeological Features and Tribal Cultural Resources</p> <p>If any prehistoric or historic-era subsurface archaeological features or deposits (e.g., ceramic shard, trash scatters), including locally darkened soil ("midden"), which may conceal cultural deposits, are discovered during construction, all ground-disturbing activity within 100 feet of the resources shall be halted, and a qualified professional archaeologist meeting the Secretary of the Interior's Professional Qualification Standards for archaeology shall be retained to assess the significance of the find. If the qualified archaeologist determines the archaeological material to be Native American in nature, the City shall contact the appropriate California Native American tribe. A tribal representative from a California Native American tribe that is traditionally and culturally affiliated with a geographic area may make recommendations for further evaluation and treatment as necessary, and for input on the preferred treatment of the find. If the find is determined to be significant by the archaeologist or the tribal representative (i.e., because it is determined to constitute a unique archaeological resource or a tribal cultural resource, as appropriate), the archaeologist and tribal representative, as appropriate, shall develop, and the City shall implement, appropriate procedures to protect the integrity of the resource and ensure that no additional resources are affected. Procedures may include but would not necessarily be limited to preservation in place (which</p>	

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		shall be the preferred manner of mitigating impacts on archaeological and tribal sites), archival research, subsurface testing, or contiguous block unit excavation and data recovery (when it is the only feasible mitigation, and pursuant to a data recovery plan). No work at the discovery location shall resume until all necessary investigation and evaluation of the resource has been satisfied. This requirement shall be placed on Project improvement plans and will be verified by the City Development Services Department.	
Impact 3.4-2: Cause a Substantial Adverse Change in the Significance of a Tribal Cultural Resource Tribal consultation has not resulted in the identification of tribal cultural resources on the Project site. However, previously recorded tribal resource P-24-5225 was identified during the NCIC records search. Additionally, excavation activities associated with Project construction may disturb or destroy previously undiscovered significant subsurface tribal cultural resources. Implementation of Mitigation Measure 3.4-2 would reduce impacts related to tribal cultural resources to less than significant by requiring that a worker environmental awareness program be prepared and provided to all construction personnel and supervisors who will have the potential to encounter and alter heritage and cultural resources, requiring construction to halt if potential archaeological resources are discovered, coordination with Native American groups (if applicable), implementation of preservation options (including preservation in place, data recovery, mapping, capping, or avoidance), and proper curation if significant artifacts are recovered.	PS	Mitigation Measure 3.4-2a: Implement Mitigation Measure 3.4-1a Mitigation Measure 3.4-2b: Implement Mitigation Measure 3.4-1b	LTS
Impact 3.4-3: Disturb Human Remains The results of the NCIC records search indicate that prehistoric human interments are present in the vicinity of the Project site and the locations of off-site improvements. Ground-disturbing construction activities resulting from Project implementation may disturb or destroy previously undiscovered human remains. Compliance with California Health and Safety Code Sections 7050.5 and 7052 and PRC Section 5097, as outlined in Mitigation Measure 3.4-3, would provide an opportunity to avoid or minimize the disturbance of human remains and to appropriately treat any remains that are discovered. Therefore, this impact would be less than significant with mitigation incorporated.	PS	Mitigation Measure 3.4-3: Implement Response Protocol If Human Remains Are Uncovered Consistent with California Health and Safety Code Sections 7050.5 and 7052 and PRC Section 5097, if suspected human remains are discovered, ground-disturbing activities in the area of the remains shall be halted immediately, and the Sacramento County coroner shall be notified immediately. The responsibilities for acting upon notification of a discovery of Native American human remains are specifically identified in PRC Section 5097.94. If the remains are determined by the coroner to be Native American, the NAHC shall be notified within 24 hours, and the guidelines of the NAHC shall be adhered to in the treatment and disposition of the remains. Following the coroner's findings, the NAHC-designated MLD and the landowner shall determine the	LTS

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		ultimate treatment and disposition of the remains and take appropriate steps to ensure that additional human interments, if present, are not disturbed. This requirement shall be included in Project improvement plans and will be verified by the City Development Services Department.	
Energy			
Impact 3.5-1: Wasteful, Inefficient, or Unnecessary Consumption of Energy during Project Construction or Operation Construction and operation of Project features and off-site improvements would result in consumption of fuel (gasoline, diesel, and jet fuel), electricity, and natural gas. Energy consumption associated with construction would be temporary and would not require additional capacity or increased peak or base period demands for electricity or other forms of energy. Implementation of Mitigation Measure 3.5-1a would require the Project to obtain LEED Gold certification, Mitigation Measure 3.5-1b (Mitigation Measure 3.14-1) would require the Project to achieve at least 15-percent greater transportation efficiency than comparable projects in the City (30 percent reduction in trips), and Mitigation Measure 3.5-1c would require Project compliance with California Energy Code Tier 1 standards. Thus, through implementation of these mitigation measures, impacts related to the wasteful, inefficient, or unnecessary consumption of energy would be less than significant.	PS	Mitigation Measure 3.5-1a: Complete LEED Gold Certification Consistent with the LEED commitment letter included in the Project's certified AB 900 application, the Project Applicant shall complete the following. The Project shall achieve at least LEED Gold certification under LEED version 4 or newer. This shall be in addition to compliance with the California Energy Code Tier 1 standards provided in Mitigation Measure 3.5-1c. <ul style="list-style-type: none"> ▶ For buildings within the jurisdiction of the California Office of Statewide Health Planning and Development Facilities Development Division: <ul style="list-style-type: none"> ▪ Prior to issuance of plan approval or building permit by the California Office of Statewide Health Planning and Development Facilities Development Division, submit to the City Development Services Department a copy of the LEED Project Registration and Green Building Council-approved Design Documentation Submittal (01 81 13 - LEED Project Requirements). ▪ Submit a copy of the updated detailed LEED Scorecard prior to public operation of the building. ▪ Within one year of building occupancy, submit final approved LEED certification to the City. The City may limit the issuance of subsequent building permits for the Project site until the Final LEED Certification has been provided to the City. ▶ For buildings within the jurisdiction of the City: <ul style="list-style-type: none"> ▪ Concurrently with submittal of the building permit application, submit to the City Development Services Department a copy of the LEED Project Registration and Green Building Council-approved Design Documentation Submittal (01 81 13 - LEED Project Requirements). ▪ Submit a copy of the updated detailed LEED Scorecard prior to public operation of the building. 	LTS

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		<ul style="list-style-type: none"> Within one year of building occupancy, submit final approved LEED certification to the City. The City may limit the issuance of subsequent building permits for the Project site until the Final LEED Certification has been provided to the City. <p>Mitigation Measure 3.5-1b: Implement Mitigation Measure 3.14-1</p> <p>Mitigation Measure 3.5-1c: Compliance with California Energy Code Tier 1 Standards</p> <p>Prior to issuance of plan approval or building permit by the California Office of Statewide Health Planning and Development Facilities Development Division, the Project Applicant shall provide plans and/or documentation demonstrating compliance with California Energy Code Tier 1 standards to the City Development Services Department. Documentation of compliance with this measure shall also be provided to the City Development Services Department prior to issuance of building permits by the City for other buildings not under the jurisdiction of the California Office of Statewide Health Planning and Development Facilities Development Division.</p>	
<p>Impact 3.5-2: Conflict with or Obstruct a State or Local Plan for Renewable Energy or Energy Efficiency</p> <p>Renewable energy generation from on-site solar photovoltaics would result in an increase in renewable energy use, which would directly support the goals and strategies in the State's 2008 Update Energy Action Plan (EAP) and the City General Plan and CAP. Additional electricity demand not met through on-site renewables because of site constraints would be met through purchasing SMUD Greenergy electricity, which is 100 percent renewable. Construction and operation of Project buildings would be in compliance with the 2019 California Energy Code or later iterations of the code, which would improve energy efficiency compared to buildings constructed according to earlier iterations of the code. Therefore, construction and operation of the Project would not conflict with or obstruct a State or local plan for renewable energy or energy efficiency. This impact would be less than significant.</p>	LTS	No additional mitigation is required.	LTS
Geology and Soils			
<p>Impact 3.6-1: Directly or Indirectly Cause Adverse Effects Related to Strong Seismic Shaking</p> <p>An earthquake of moderate to high magnitude occurring within the region may cause strong ground shaking at the site. However, the Project structures</p>	LTS	No mitigation is required in addition to CBC seismic standards, which includes specific standards for hospital facilities under OSHPD authority.	LTS

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would be designed to meet CBC seismic standards at a minimum, which includes specific standards for hospital facilities under OSHPD authority. Structures designed to meet CBC standards are expected to withstand a major earthquake without collapse or loss of life. Off-site infrastructure improvements, which would be placed primarily underground, also would be constructed to these standards. Project construction and operation would not create new seismic events or exacerbate existing seismic hazards. This impact would be less than significant.			
Impact 3.6-2: Result in Substantial Soil Erosion or Loss of Topsoil Project construction and off-site improvements would involve ground disturbance and the potential for soil erosion and sedimentation off-site. The potential for increased erosion would be minimized through compliance with City Municipal Code Chapter 16.44 and the requirement of SWRCB Construction General Permit Order 2009-0009-DWQ to implement measures to control soil erosion and sedimentation. This impact would be less than significant.	LTS	No mitigation is required in addition to compliance with City Municipal Code Chapter 16.44 and the requirement of SWRCB Construction General Permit Order 2009-0009-DWQ.	LTS
Impact 3.6-3: Locate Project Facilities on an Unstable Geologic Unit or Expansive Soils The Geotechnical Exploration Report identified no geologic stability issues with Project site development. The Project site and off-site improvements would be located in areas where expansive soils likely occur; however, the Project would be required to comply with CBC requirements for the design and construction methods for dealing with expansive soils. This impact would be less than significant.	LTS	No mitigation is required beyond compliance with the recommendations of the Project Geotechnical Exploration Report after approval by OSHPD.	LTS
Impact 3.6-4: Directly or Indirectly Destroy a Paleontological Resource Deep excavations required for Project construction and off-site infrastructure improvements may disturb or destroy unique paleontological resources. Implementation of Mitigation Measure 3.6-4 would reduce impacts to a less-than-significant level.	PS	Mitigation Measure 3.6-4: Paleontological Monitoring for Deep Excavations Before the start of any excavation activities, the Project Applicant shall retain a qualified scientist (e.g., geologist, biologist, paleontologist) to train all construction personnel involved with earth-moving activities, including the site superintendent, regarding the possibility of encountering fossils, the appearance and types of fossils likely to be seen during construction, and proper notification procedures to take if fossils are encountered. Training on paleontological resources shall also be provided to all other construction workers but may use a video recording of the initial training and/or written materials rather than in-person training.	LTS

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		If any paleontological resources (fossils) are discovered during grading or construction activities on the Project site, work shall be halted immediately within 50 feet of the discovery, and the City Planning Division shall be immediately notified. The Project Applicant shall retain a qualified paleontologist to evaluate the resource and prepare a recovery plan in accordance with Society of Vertebrate Paleontology guidelines. The recovery plan may include but is not limited to a field survey, construction monitoring, sampling and data recovery procedures, museum storage coordination for any specimen recovered, and a report of findings. Recommendations in the recovery plan that are determined by the City to be necessary and feasible shall be implemented by the Project Applicant before construction activities resume in the area where the paleontological resources were discovered.	

Greenhouse Gas Emissions and Climate Change

<p>Impact 3.7-1: Generate GHG Emissions That May Have a Significant Impact on the Environment</p> <p>Construction activity associated with development of the Project is estimated to generate a total of 8,886 MTCO₂e. Operation of the Project would result in GHG emissions associated with mobile sources, area sources, building energy, water consumption, and wastewater and solid waste generation. After full buildout of the Project in 2030, the Project would generate 43,991 MTCO₂e/year, including the total construction emissions amortized by 30 years. The existing Project site generates 8,673 MTCO₂e/year. Thus, the Project would result in a net increase in GHG emissions of 35,318 MTCO₂e/year, which would exceed the identified threshold of no net additional increase in GHG emissions over existing conditions. Implementation of Mitigation Measures 3.7-1a and 3.7-1b would reduce carbon emissions and require purchasing offsets, such that the Project would result in no net additional increase in GHG emissions associated with Project implementation. These mitigation measures would reduce this impact to a less-than-significant level.</p>	S	<p>Mitigation Measure 3.7-1a: Reduce GHG Emissions On-Site</p> <p>The Project Applicant shall implement the following measures identified in Appendix F of the certified AB 900 application, which would offset the net increase in GHG emissions to the satisfaction of the City Development Services Department (included as Appendix C of this EIR):</p> <ul style="list-style-type: none"> ▶ Solar photovoltaics: The Project shall install solar photovoltaics on Project building roofs. Solar installations shall generate approximately 5,443 megawatt-hours of electricity per year. ▶ SMUD Greenergy program: After installation of the solar photovoltaics, the Project would still consume electricity provided by SMUD. The Project shall purchase 100-percent renewable energy provided through SMUD's Greenergy program for the remaining electricity demands of the Project, rather than using SMUD's average renewable mix in 2030. This will effectively offset all electricity-related GHG emissions associated with the Project. ▶ Electric vehicle chargers: The Project shall install Level 2 electric vehicle (EV) charging stations. Each EV charging station shall serve multiple parking spaces, and the electricity load for the parking garages shall ensure that all EV chargers are able to be in service at the same time. Installation of the charging stations shall be phased in the following manner so that EV charging is available for 5 percent of the total parking for each phase, consistent with City Municipal Code Section 23.58.120. 	LTS
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		<p>Final site plans for parking shall also identify an additional 5 percent of parking for each phase for potential future EV charging consistent with City Municipal Code Section 23.58.120:</p> <ul style="list-style-type: none"> ▪ Phase 1: 37 total charging stations that serve 74 total parking spaces, ▪ Phase 2: 73 total charging stations that serve 144 total parking spaces, and ▪ Phase 3: 84 total charging stations that serve 166 parking spaces. <p>► Transportation Demand Management Plan: The Project shall include a Transportation Demand Management (TDM) Plan consistent with the City CAP and the City TDM Plan Guidelines. The TDM Plan developed for the Project shall include measure categories such as marketing and promotion, bike facilities, on-site amenities, transit, commuter benefits, and parking facilities. With the implementation of these measures, the Project will achieve at least a 30-percent transportation efficiency (which would result in a 30-percent reduction in VMT). Implementing a TDM Plan is included in this EIR as Mitigation Measure 3.14-1 in Section 3.14, "Transportation."</p> <p>► Vegetation change: After Project construction, 313 new trees shall be planted.</p> <p>These design features would result in reduced GHG emissions on-site. Each feature was quantified in the AB 900 application, which is included as Appendix C. Table 3.7-6 shows the GHG emission reduction associated with each Project design feature.</p> <p><i>[Table 3.7-6, GHG Reduction Associated with Project Features in 2030 (MTCO₂e), can be found on page 3.7-13 of Section 3.7, Greenhouse Gas Emissions and Climate Change.]</i></p> <p><i>[Table 3.7-7, Summary of Net Increase in GHG Emissions in 2030 with Project Features (MTCO₂e), can be found on page 3.7-14 of Section 3.7, Greenhouse Gas Emissions and Climate Change.]</i></p> <p>Mitigation Measure 3.7-1b: Purchase Carbon Offset Credits</p> <p>The net increase in GHG emissions from Project implementation is the amount of annual GHG emissions that will need to be offset through the purchase of carbon credits. The Project Applicant shall meet the requirement set forth in PRC Section 21183(c) to demonstrate that implementing the Project would</p>	

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		<p>result in no net additional GHG emissions through the purchase of voluntary carbon offset credits sufficient to offset all projected additional GHG emissions. A copy of the Project Applicant commitment letter is provided in Appendix C. As shown in Table 3.7-7, above, the Project shall be required to purchase 18,651 MTCO₂e/year of credits.</p> <p>Such offsets shall meet the requirements of State CEQA Guidelines Section 15126.4(C)(3) and meet the following criteria, consistent with the standards set forth in Health and Safety Code Section 38562, subdivisions (d)(1) and (d)(2):</p> <ul style="list-style-type: none"> ▶ Real—They represent reductions actually achieved (not based on maximum permit levels). ▶ Additional/surplus—They are not already planned or required by regulation or policy (i.e., not double-counted). ▶ Quantifiable—They are readily accounted for through process information and other reliable data. ▶ Enforceable—They are acquired through legally binding commitments/agreements. ▶ Verifiable—They are verified through the accurate means by a reliable third party. ▶ Permanent—They will remain as GHG reductions in perpetuity. <p>Such credits shall be based on protocols that are consistent with the criteria set forth in subdivision (a) of Section 95972 of Title 17 of the California Code of Regulations and shall not allow the use of offset projects originating outside of California, except to the extent that the quality of the offsets, and their sufficiency under the standards set forth herein, can be verified by Sacramento County and/or SMAQMD. Such credits must be purchased through one of the following: (i) a CARB-approved registry, such as the Climate Action Reserve, the American Carbon Registry, or the Verified Carbon Standard; (ii) any registry approved by CARB to act as a registry under the California cap-and-trade program; or (iii) the California Air Pollution Control Officers Association GHG Rx and the SMAQMD.</p> <p>CNU shall enter into one or more contracts to purchase carbon credits, and the contract(s), together with any previous contracts, shall be evidence for the purchase of carbon credits in an amount sufficient to offset the net increase in GHG emissions attributable to each building constructed on the Project site over</p>	

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		the analysis horizon of 30 years. Prior to issuance of plan approval or building permit by the California Office of Statewide Health Planning and Development Facilities Development Division, the Project Applicant shall submit documentation of compliance with this measure to the City Development Services Department to verify compliance with this measure. Documentation of compliance with this measure shall be provided to the City Development Services Department prior to issuance of building permits by the City for other buildings not under the jurisdiction of the California Office of Statewide Health Planning and Development Facilities Development Division. Carbon offset credits required for each phase of the Project must be purchased before issuance of any Temporary Certificate of Occupancy for any building in that phase.	
Impact 3.7-2: Conflict with an Applicable Plan, Policy, or Regulation of an Agency Adopted for the Purpose of Reducing Emissions of GHGs The Project was evaluated, qualitatively, for consistency with applicable local and State plans that were developed with the intent of reducing GHG emissions. The Project would be required to achieve no net increase in GHG emissions above existing conditions through a combination of on-site GHG reduction measures and purchasing carbon offset credits as stated in the AB 900 certification for the Project. Implementation of Mitigation Measures 3.7-2a and 3.7-2b would ensure that the Project reduces GHG emissions on-site, partly by implementing GHG reduction measures from the City's 2019 CAP, and that all remaining GHG emissions would be offset through the purchase of carbon credits. The Project would result in no net additional GHG emissions and thus would not conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing GHG emissions. This impact would be less than significant.	S	Mitigation Measure 3.7-2a: Implement Mitigation Measure 3.7-1a Mitigation Measure 3.7-2b: Implement Mitigation Measure 3.7-1b	LTS
Hazards and Hazardous Materials			
Impact 3.8-1: Create a Hazard through the Routine Transport, Use, or Disposal of Hazardous Materials, Including Reasonably Foreseeable Upset or Accidents during Construction Project construction would involve the use of materials that may create a hazard if released into the environment. Use, transport, and disposal of materials in compliance with established regulations would effectively address hazards associated with the use of these materials. This impact would be less than significant.	LTS	No mitigation is required in addition to implementation of General Plan policies and applicable regulations.	LTS

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Impact 3.8-2: Create a Hazard through the Routine Transport, Use, or Disposal of Hazardous Materials, Including Reasonably Foreseeable Upset or Accidents during Operation Operation of the Project would require the routine use of hazardous materials. Federal, State, and local regulations provide protection to the public and the environment from hazardous materials. This impact would be less than significant.	LTS	No mitigation is required in addition to implementation of General Plan policies, City Municipal Code requirements, and other applicable regulations.	LTS
Impact 3.8-3: Impair Implementation of, or Physically Interfere with, an Adopted Emergency Response Plan or Emergency Evacuation Plan The Project would not impair the implementation of emergency response or evacuation plans, and it would not permanently alter the capacity of key transportation routes. Temporary road closures during construction, if required, would not be expected to substantially impair evacuation and response. Access to I-5 would not be affected. This impact would be less than significant.	LTS	No mitigation is required in addition to compliance with the City's and CCSD Fire Department's design standards.	LTS
Hydrology and Water Quality			
Impact 3.9-1: Violate Any Water Quality Standards or Waste Discharge Requirements or Substantially Degrade Surface Water or Groundwater Quality during Construction Activities Project site construction activities and off-site improvements would consist of ground-disturbing and excavation activities that would expose soils to wind and water erosion and potentially transport pollutants to surface water bodies, particularly during storm events. In addition, accidental spills of construction-related fuels, oils, hydraulic fluid, and other hazardous substances may contaminate stormwater flows, resulting in the potential degradation of surface water quality downstream of the disturbance area. Excavation activities may encounter groundwater and require dewatering activities that may directly affect groundwater quality. This may affect the water quality of Stone Lakes and the Sacramento River and groundwater beneath the construction sites. The potential for erosion and transport of sediment and pollutants would be addressed through compliance with City Municipal Code Chapter 16.44, which requires all projects to implement erosion control measures to minimize erosion, sediment, dust, and other pollutant runoff created by improvement activities. Additionally, any project that disturbs more than 1 acres of soil would be required to obtain coverage under the Construction General NPDES permit, including completion of a SWPPP. With compliance with these existing	LTS	No mitigation is needed in addition to requirements associated with NPDES permitting and other stormwater management requirements consistent with the City Municipal Code.	LTS

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regulations, the potential for construction activities related to both on-site and off-site improvements to violate water quality standards or degrade surface water or groundwater would be a less-than-significant impact.			
Impact 3.9-2: Violate Any Water Quality Standards or Substantially Degrade Surface Water or Groundwater Quality from Polluted Stormwater Runoff Development can increase the rate of runoff and eliminate storage and infiltration that would naturally occur along drainage paths. Runoff from developed areas can carry pollutants and sediment, which can be potentially harmful to downstream receiving waters. Implementation of the Project would decrease the total area of impervious coverage from 75.8 percent (under existing conditions) to 70.2 percent through conversion of exiting pavement to pervious or landscaped areas. Additionally, the Project would implement LID measures to prevent the contamination of stormwater and infiltrate the majority of stormwater on-site. All pollution control measure would be designed in accordance with the Sacramento Region Stormwater Quality Design Manual and enforced through the City permitting process. Therefore, the potential for on-site improvements to generate contaminated stormwater runoff or adversely affect surface water and groundwater would be less than significant.	LTS	No mitigation is required beyond LID measures required through the MS4 permit and described in the 2018 Sacramento Region Stormwater Quality Design Manual and Municipal Code Chapter 15.12. LID measures are provided in Table 5 of Appendix H.	LTS
Impact 3.9-3: Substantially Decrease Groundwater Supplies or Interfere Substantially with Groundwater Recharge Such That the Project May Impede Sustainable Groundwater Management Implementation of the Project would reduce the total extent of impervious area at the site and would allow for increased recharge of shallow groundwater systems. Although implementing the Project would increase water demand relative to existing conditions, this change represents a small percentage of the service volume for the Laguna Vineyard service area and would not substantially decrease groundwater supplies or impede sustainable groundwater management. This impact would be less than significant.	LTS	No mitigation is required.	LTS
Impact 3.9-4: Increase Localized Flooding Risk Because of Changes in Site Drainage Implementation of the Project would result in a 5-percent decrease in the total area of impervious coverage. Additionally, the Project would incorporate LID measures to capture precipitation from the 95th percentile storm event on-site. Stormwater runoff that exceeds that capacity of on-site stormwater systems would be directed to existing City stormwater infrastructure. LID	LTS	No mitigation is required beyond LID measures required through the MS4 permit and described in the 2018 Sacramento Region Stormwater Quality Design Manual. LID measures are provided in Table 5 of Appendix H.	LTS

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measures would reduce peak stormwater flows below existing flow conditions. This impact would be less than significant.			
Impact 3.9-5: Impede or Redirect Flood Flows Implementation of the Project would result in modification of General Plan Policy ER-2-3 and Municipal Code Section 23.42.040.D to allow construction of essential health care facilities in the 200-year floodplain consistent with State law. The Project would alter the built environment within the 200-year floodplain but would comply with General Plan Policy ER-2-2, prohibiting construction that would result in new or increased flooding impacts on adjacent areas, and General Plan Policy ER-2-8, which requires that each project demonstrate flood protection compliance. The proposed alteration of the Project site is expected to result in negligible changes in surface elevation (0.01 foot to 0.10 foot) and would not result in substantial expansion of the 200-year floodplain. Additionally, any future essential health care facilities located in the 200-year floodplain as a result of the proposed amendment to General Plan Policy ER-2-3 would be required to meet the protective standards of General Plan Policies ER-2-2 and ER-2-8. This impact would be less than significant.	LTS	No mitigation is required.	LTS
Impact 3.9-6: Release of Pollutants Due to Inundation by Floodwaters The Project site is located within the 200-year floodplain, and proposed on-site improvements would include the development of new industrial facilities (such as the maintenance yard and central plant), which would house fuels, lubricants, and industrial chemicals not typical of the existing commercial uses at the site. The potential for 200-year floodwaters to be contaminated by pollutants released from the Project site would be potentially significant. Implementation of Mitigation Measure 3.9-6 would ensure that Project fuel and chemical storage is provided above the 200-year floodplain or in dry floodproofed locations and would reduce the risk of water quality impacts to a less-than-significant level.	S	Mitigation Measure 3.9-6: Elevate Generator, Fuel, and Chemical Storage above the 200-Year Floodplain Generator fuel tanks shall be protected by dry floodproofing consistent with American Society of Civil Engineers (ASCE) standard ASCE 24, Flood Resistant Design and Construction. Other chemical storage shall be elevated outside of the 200-year floodplain. All Project building fuel and chemical storage (excluding generator fuel) shall be shown in building plans prior to issuance of building permits. The City Development Services Department will verify compliance with this mitigation measure.	LTS
Land Use and Planning			
Impact 3.10-1: Physically Divide an Established Community The Project would be contained within an existing developed site bounded by local roadways and I-5. No Project features would create a new physical division of the residential areas east and south of the site. The Project would have no impact.	NI	No mitigation is required.	NI

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<p>Impact 3.10-2: Cause a Significant Environmental Impact Because of a Conflict with any Land Use Plan, Policy, or Regulation Adopted for the Purpose of Avoiding or Mitigating an Environmental Effect</p> <p>Implementation of the Project would include General Plan amendments, rezoning, and text changes to Municipal Code Section 23.42.040.D. These changes to the General Plan and Municipal Code would not alter or conflict with General Plan land use policy provisions. With implementation of Mitigation Measure 3.10-1, the Project would be consistent with General Plan policies and would comply with City Municipal Code requirements that address environmental effects from development. The Project would also be consistent with the SACOG 2020 MTP/SCS. This impact would be less than significant with mitigation incorporated.</p>	S	<p>Mitigation Measure 3.10-1: Implement Mitigation Measures 3.1-3, 3.2-2a, 3.2-2b, 3.2-3a, 3.2-3b, 3.3-4, 3.4-1a, 3.4-1b, 3.5-1, 3.7-1a, 3.7-1b, 3.11-2a, 3.11-2b, 3.11-2c, and 3.14-1.</p>	LTS
Noise and Vibration			
<p>Impact 3.11-1: Create Construction-Generated Noise</p> <p>Construction noise would expose nearby noise-sensitive receptors to elevated noise levels that would often exceed local standards, including the interior noise standard of 40 dB Leq at the church and the exterior and interior noise standards shown in Table 3.11-3, Table 3.11-4, and Table 3.11-5 at nearby residences. In addition, construction noise would be excessive because it would expose some residential land uses to noise levels that are more than 10 dB louder than the applicable noise standard. While the linear nature and limited duration of the off-site improvements would ensure that no receptor would be affected for an extended period, on-site construction may occur over an extended 9- to 10-year period. Construction activity would occur primarily on weekdays during the less noise-sensitive daytime hours. However, construction activity may occasionally occur beyond the allowed hours of construction (weekdays from 7 a.m. to 6 p.m.) designated in Section 7-8.01 of the City of Elk Grove Construction Specifications Manual. A written request to conduct construction work outside these allowed hours would be submitted to the City at least 2 working days in advance, pursuant to Section 7-8.02 of the Construction Specifications Manual. The strategies listed in Mitigation Measure 3.11-1 would decrease exposure of sensitive receptors to on- and off-site construction-generated noise, but the effectiveness of these mitigation strategies cannot be described quantitatively at the time of writing this EIR. Therefore, even with implementation of Mitigation Measure 3.11-1, noise-</p>	S	<p>Mitigation Measure 3.11-1: Implement Measures to Reduce Exposure of Noise-Sensitive Receptors to On- and Off-Site Construction-Generated Noise</p> <p>To minimize noise levels generated by on- and off-site construction activities, the Project Applicant shall require its construction contractors to comply with the following measures during construction:</p> <ul style="list-style-type: none"> ▶ All construction equipment and material staging areas shall be set back as far as possible from nearby off-site noise-sensitive receptors, including but not limited to the residences on the north side of Ruddy Duck Way and the residences on the east side of West Taron Drive. ▶ All construction equipment shall be properly maintained and equipped with noise-reduction intake and exhaust mufflers and engine shrouds, in accordance with manufacturer specifications. Equipment engine shrouds shall be closed during equipment operation. ▶ Construction equipment with back-up alarms shall be equipped with either audible self-adjusting backup alarms or alarms that sound only when an object is detected. Self-adjusting backup alarms shall automatically adjust to 5 dB louder than the surrounding background levels. All non-self-adjusting backup alarms shall be set to the lowest setting required to be audible above the surrounding noise levels. ▶ Arrival and departure of trucks hauling construction materials and equipment to and from staging areas and construction sites shall occur 	SU

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<p>sensitive receptors may be exposed to construction-generated noise levels that exceed applicable noise standards. Thus, this impact would be significant and unavoidable.</p>		<p>only from 7 a.m. to 6 p.m. on weekdays, pursuant to Section 7-8.01 of the City of Elk Grove Construction Specifications Manual. If such activity is necessary to complete the Project, a written request shall be submitted to the City at least 2 working days in advance, pursuant to Section 7-8.02 of the Construction Specifications Manual. No construction-related hauling or transport shall occur without prior authorization from the City.</p> <ul style="list-style-type: none"> ▶ For all on-site staging areas that would be located within 860 feet of a residential property line and all on-site construction and demolition activity that would take place within 860 feet of a residential property line, temporary noise barriers or noise curtains shall be installed such that they block the line of sight between the noise source and the receiver. For example, during construction of the parking garage and retail building that is demarcated as Building C in Figure 3.11-3, a noise curtain or other barrier shall be installed along the eastern boundary of the Project site in such a way that the residences on the east side of West Taron Drive would be shielded from noise generated by construction of the on-site building. Temporary noise curtains shall consist of durable, flexible composite material featuring a noise barrier layer bounded to sound-absorptive material on one side. The noise barrier layer shall consist of rugged, impervious material with a surface weight of at least 1 pound per square foot. This noise reduction measure applies only to on-site demolition and construction work. This measure would not be feasible for the off-site construction work, which is linear in nature, because the length of the sound barrier would be excessive, and the location of noise-generating construction activity would change frequently. ▶ The Project Applicant shall provide advanced notice to owners of all residential or transient lodging land uses located within 300 feet where nighttime construction activity would take place. This notification shall inform the recipients of when and where nighttime construction would occur and the types of measures being implemented to lessen the impact at potentially affected receptors. This noticing shall also provide the contact information for the designated noise complaint and enforcement manager, discussed further below. ▶ The Project Applicant shall post visible signs along the perimeter of the construction site that disclose construction times and duration, as well as a contact number for a noise complaint and enforcement manager. The 	

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		<p>on-site noise complaint and enforcement manager's duties shall include documenting noise complaints, responding to and investigating noise-related complaints, implementing any feasible and appropriate measures to reduce noise at the receiving land uses, and reporting the complaints to City Planning Division staff on a weekly basis. Additional measures to remedy complaints received from the public may include:</p> <ul style="list-style-type: none"> ▪ implementing noise-reducing enclosures and techniques around stationary noise-generating equipment (e.g., concrete mixers, generators, compressors) and ▪ for construction activity that occurs near existing sensitive land uses, installing additional temporary noise curtains within the direct line of sight to the nearby sensitive receptor(s). <p>These measures shall be included in final building plans and improvement plans. Prior to issuance of plan approval or building permit by the California Office of Statewide Health Planning and Development Facilities Development Division, the Project Applicant shall submit the site plan and other requested items to the City Development Services Department to verify compliance with this measure. All funding for the implementation of these measures shall be provided by the Project Applicant.</p>	
<p>Impact 3.11-2: Create Noise Generated by Operational On-Site Activities The Project would involve the long-term operation of new noise sources and new noise-generating activities on the Project site that may expose off-site noise-sensitive receptors to excessive noise levels. New operational noise sources would include the central plant and mechanical yard; mechanical equipment that is part of buildings' HVAC systems; activity at parking facilities and sport courts; and delivery activity by trucks. Operation of HVAC units and activity at parking facilities, sport courts, and delivery areas would expose existing off-site residential land uses to noise levels that exceed applicable local noise standards. Implementation of Mitigation Measures 3.11-2a, 3.11-2b, and 3.11-2c would reduce impacts to a less-than-significant level.</p>	S	<p>Mitigation Measure 3.11-2a: Implement Design Measures to Ensure That Operation of On-Site HVAC Equipment Does Not Expose Off-Site Residences to Noise Levels That Exceed Applicable Standards The Project Applicant shall implement design measures to ensure that all mechanical building equipment that is part of the HVAC systems, in combination with other types of on-site operational noise sources, do not expose off-site residential land uses, including the single-family homes on the east side of West Taron Drive and north side of Ruddy Duck Way, to noise levels that exceed 55 L_{eq} during daytime hours (7 a.m. to 10 p.m.) or 45 L_{eq} during nighttime hours (10 p.m. to 7 a.m.). The Project Applicant shall identify design measures necessary to achieve these performance standards prior to operation of any HVAC systems on new buildings located within 875 feet of off-site residential land uses and confirm that the selected measures are sufficiently effective after they are implemented. All design measures and their effectiveness shall be demonstrated in an acoustic analysis subject to review and approval by City Development Services Department staff, and if</p>	LTS

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		<p>determined necessary by City Development Services Department staff, the City can hire a qualified acoustical engineer to peer review the documentation provided by the Project Applicant that shows these performance criteria would be achieved. All funding for the study and implementation of the measures, including the cost of the City hiring an acoustical engineer to peer review the analysis demonstrating the effectiveness of the Project Applicant's proposed design measures, shall be provided by the Project Applicant.</p> <p>Measures to achieve these performance standards may include, but shall not be limited to, the following measures:</p> <ul style="list-style-type: none"> ▶ Design and build sound barriers near all noise-generating HVAC units that enclose mechanical equipment as much as possible and completely block the line of sight between the equipment and off-site residential land uses. Sound barriers can consist of a wall, earthen berm, or some combination thereof. ▶ Locate HVAC units within equipment rooms or enclosures that incorporate noise reduction features, such as acoustical louvers. Equipment enclosures shall be oriented so that major openings (i.e., intake louvers, exhaust) are directed away from nearby noise-sensitive receptors. ▶ Set back all HVAC units as much as possible from off-site noise-sensitive receptors, including residential land uses. ▶ Position HVAC units on the opposite side of an on-site buildings from off-site sensitive receptors so that the buildings serve as an intervening noise barrier. <p>Prior to issuance of plan approval or building permit by the California Office of Statewide Health Planning and Development Facilities Development Division, the Project Applicant shall submit the site plan, acoustic analysis, and other requested items to the City Development Services Department to verify compliance with this measure. Documentation of compliance with this measure shall be provided to the City Development Services Department prior to issuance of building permits by the City for other buildings not under the jurisdiction of the California Office of Statewide Health Planning and Development Facilities Development Division.</p>	

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		<p>Mitigation Measure 3.11-2b: Implement Measures to Reduce Parking Facility and Sport Court–Generated Noise Exposure at Nearby Noise-Sensitive Receptors</p> <p>The Project Applicant shall implement design measures to ensure that activity at surface parking lots, parking structures, and the rooftop sport courts, in combination with other types of on-site operational noise sources, do not expose off-site residential land uses to noise levels that exceed 55 dB L_{eq} during daytime hours (7 a.m. to 10 p.m.) or 45 dB L_{eq} during nighttime hours (10 p.m. to 7 a.m.). The Project Applicant shall identify design measures necessary to achieve these performance standards prior to operation of surface parking lots, parking structures, or sport courts located near off-site residential land uses and confirm the selected measures are sufficiently effective after they are implemented. All design measures and their effectiveness shall be demonstrated in an acoustic analysis subject to review and approval by City Development Services Department staff, and if determined necessary by City Development Services Department staff, the City can hire a qualified acoustical engineer to peer review the documentation provided by the Project Applicant that shows these performance criteria would be achieved. All funding for the study and implementation of the measures, including the cost of the City hiring an acoustical engineer to peer review the analysis demonstrating the effectiveness of the Project Applicant's proposed design measures, shall be provided by the Project Applicant.</p> <p>Measures to achieve these performance standards may include, but shall not be limited to, the following measures:</p> <ul style="list-style-type: none"> ▶ Restrict access of the sport courts to daytime hours from 7 a.m. to 10 p.m. every day with a locked gate or some other mechanism. ▶ Design the parking structures so that the vehicle entrance and exits are on the side of the structure opposite from that of the nearest off-site residences. This measure shall be implemented only to the extent it is consistent with recommendations in Draft EIR Appendix K regarding on-site circulation. ▶ Design and build a sound barrier along the south and east sides of the rooftop sport court that blocks the line of sight from activities on the sport courts to the backyards of the single-family dwellings along the east side of West Taron Drive and the north side of Ruddy Duck Way. 	

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		<p>This barrier may consist of a solid wall or a louvered barrier that allows air to pass through but still reflects sound away from off-site residences. The sound barriers shall be in place prior to use of the sport courts.</p> <ul style="list-style-type: none"> ▶ Move the sport courts to the rooftop of a different on-site building that would be more distant from off-site residential land uses or move the sport courts indoors, within an on-site building rather than on a rooftop. ▶ Include a sound wall or louvered sound barrier along those sides of parking structures that face the single-family dwellings along the east side of West Taron Drive or the north side of Ruddy Duck Way. For the parking structure near the east side of the Project site (with retail stores on the top floor), the barriers shall be installed on the east and south sides of the structure. For the parking structure closest to the single-family residences on Ruddy Duck Way, a barrier shall be installed on the south side of the structure. The sound barriers on each parking structure shall be in place prior to use of the use of the parking structure. ▶ Set back surface parking lots and parking structures further from off-site residential receptors. ▶ Install sound barriers (i.e., a wall, berm, or combination thereof) between some surface parking areas and off-site residential receptors. These sound barriers can consist of a wall, earthen berm, or some combination thereof. <p>Documentation of compliance with this measure shall be provided to the City Planning Division prior to issuance of building permits by the City.</p> <p>Mitigation Measure 3.11-2c: Implement Design Measures to Ensure That Delivery Truck Activity Does Not Expose Off-Site Residences to Noise Levels That Exceed Applicable Standards</p> <p>The Project Applicant shall implement design and/or operational measures to ensure that delivery truck activity would not expose off-site residential land uses, including the single-family homes on the east side of West Taron Drive and north side of Ruddy Duck Way, to noise levels that exceed 75 L_{max} during daytime hours (7 a.m. to 10 p.m.) or 70 L_{max} during nighttime hours (10 p.m. to 7 a.m.). The Project Applicant shall identify measures necessary to achieve these performance standards prior to operation of buildings or parking areas located within 175 feet of off-site residential land uses and confirm that the selected measures are sufficiently effective after they are implemented. All</p>	

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		<p>design measures and their effectiveness shall be demonstrated in an acoustic analysis subject to review and approval by City Development Services Department staff, and if determined necessary by City Development Services Department staff, the City can hire a qualified acoustical engineer to peer review the documentation provided by the Project Applicant that shows these performance criteria would be achieved. All funding for the study and implementation of the measures, including the cost of the City hiring an acoustical engineer to peer review the analysis demonstrating the effectiveness of the Project Applicant's proposed design measures, shall be provided by the Project Applicant. Measures to achieve these performance standards may include, but shall not be limited to, the following measures:</p> <ul style="list-style-type: none"> ▶ Design and build sound barriers near loading docks and delivery areas that block the line of sight between truck activity areas and off-site residential land uses. Sound barriers may consist of a wall, enlargement of an existing wall along southern boundary of the site, an earthen berm, or a combination thereof. Sound reduction may also be achieved by constructing loading dock pits that are below grade relative to the surrounding parking area. ▶ Place loading docks and truck delivery areas on the sides of on-site buildings opposite from the side of the closest off-site noise-sensitive receptor so that the on-site building serves as a sound barrier protecting existing off-site residential land uses. ▶ Require all loading docks and truck delivery areas to be set back a specific distance from off-site residential land uses, and prohibit truck travel and truck activity within the setback areas by posting signs and/or by installing gates that restrict truck access. The setback distance for truck activity during daytime hours (7 a.m. to 10 p.m.) can be different from the setback distance for truck activity during nighttime hours (10 p.m. to 7 a.m.). <p>Prior to issuance of plan approval or building permit by the California Office of Statewide Health Planning and Development Facilities Development Division, the Project Applicant shall submit the site plan and other requested items to the City Development Services Department to verify compliance with this measure. Documentation of compliance with this measure shall be provided to the City Development Services Department prior to issuance of building permits by the City for other buildings not under the jurisdiction of the</p>	

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		California Office of Statewide Health Planning and Development Facilities Development Division.	
Impact 3.11-3: Amphitheater Event Noise Noise generated by crowds and amplified speech and music at amphitheater events would not exceed local noise standards for daytime hours (i.e., 7:00 am to 10:00 p.m.), and no events would take place at the amphitheater during noise-sensitive nighttime hours (i.e., 10:00 pm to 7:00 a.m.). Therefore, this impact would be less than significant.	LTS	No mitigation is required.	LTS
Impact 3.11-4: Increase Occurrences of Ambulance Siren Noise Implementing the Project would result in an increase in emergency ambulance trips traveling along local roadways past existing noise-sensitive residential receptors. Although noise generated by emergency response activity is exempt from the City's noise standards, noise generated by ambulance sirens would result in an increase in sleep disturbance at affected residential dwellings. While some Project design features may decrease the occurrence of sleep disturbance caused by siren noise, there are no additional feasible mitigation measures for reducing exposure of residential land uses to ambulance noise and associated sleep disturbance. Therefore, this impact would be significant and unavoidable.	SU	There are no feasible mitigation measures to address this impact.	SU
Impact 3.11-5: Create Helicopter Noise Noise generated by helicopter landings and takeoffs at the helistop on the roof of the hospital would not expose off-site residential land uses to SENELs that result in more than 5 percent of people to be awakened from sleep. This impact would be less than significant because the helicopter flight path proposed for the Project would avoid residential land uses.	LTS	No mitigation is required beyond the Project proposed helicopter flight path along I-5 that avoids residential areas identified in Figure 2-22.	LTS
Impact 3.11-6: Create Long-Term (Operational) Traffic-Generated Noise Project-generated traffic would not expose residential land uses to interior noise levels at residential buildings that exceed 45 dB, to increases in exterior traffic noise levels that would exceed the City's incremental noise increase criteria for transportation noise sources, or to perceptible increases in traffic noise. Therefore, this impact would be less than significant.	LTS	No mitigation is required.	LTS

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Population, Employment, and Housing			
Impact 3.12-1: Directly or Indirectly Induce Substantial Unplanned Population Growth Implementing the Project would increase the potential employment opportunities on the Project site. The 3,843 jobs would represent approximately 3 percent of the 122,155 jobs anticipated with buildout of the General Plan and would not be expected to exceed the City's development capacity, as well as within the forecasts of the SACOG 2020 MTP/SCS, and would not be expected to exceed the City's development capacity. The type and location of the employment opportunities provided through Project implementation would be compatible with the relevant policies in the Elk Grove General Plan. Therefore, implementing the Project would not result in substantial unplanned population growth. This impact would be less than significant.	LTS	No mitigation is required.	LTS
Public Services			
Impact 3.13-1: Result in Substantial Adverse Physical Construction-Related Impacts Associated with the Provision or the Need for New or Physically Altered Fire Facilities, to Maintain Acceptable Service Ratios and Response Times The Project would result in several new structures, including a hospital building, offices, parking, retail buildings, and dormitories. The Cosumnes CSD Fire Department has identified the need to hire additional staff to provide fire protection services and for the hospital to include additional fire safety equipment because of its height. However, no construction or expansion of fire protection facilities would be required to service the Project. Thus, the impact related to fire facilities would be less than significant.	LTS	No mitigation is required.	LTS
Impact 3.13-2: Result in Substantial Adverse Physical Construction-Related Impacts Associated with the Provision or the Need for New or Physically Altered Police Facilities, to Maintain Acceptable Service Ratios and Response Times Implementing the Project would result in an increase in demand for police services. The Project Applicant has signed an agreement that will be up for approval by the City at the same time as consideration of this Project. This Agreement would fund on-site law enforcement services. This Agreement would assist with upholding acceptable service ratios and response times without the need for additional police facilities. Thus, the impact related to police facilities would be less than significant.	LTS	No mitigation is required beyond execution and implementation of the agreement with the City to fund on-site law enforcement services to address the estimated increase in police service demand (see Appendix E).	LTS

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Transportation			
<p>Impact 3.14-1: Result in a Conflict with City Circulation System Programs and Policies That Require Reductions in Local Commute Trips</p> <p>Implementation of the Project would create new land uses on the Project site that would increase local vehicle trips above existing conditions. City General Plan Policy NR-4-5 and CAP Measure TACM-3 identify the need to reduce single-occupancy and local commute vehicle trips. Implementation of mitigation would reduce this impact to less than significant.</p>	S	<p>Mitigation Measure 3.14-1: Implement Transportation Demand Management Plan</p> <p>The Project Applicant shall develop and implement the TDM Plan that was outlined in the Project's AB 900 application provided in Appendix C of the Draft EIR, which requires the Project to achieve at least 15-percent greater transportation efficiency than comparable projects in the City (30 percent reduction in trips). The TDM Plan shall be consistent with the City TDM Plan Guidelines. The following TDM measures shall be required:</p> <ul style="list-style-type: none"> ▶ transportation marketing services, ▶ short-term bicycle parking, ▶ long-term bicycle parking, ▶ improved access to bike network, ▶ showers and locker rooms, ▶ on-site café, ▶ subsidized transit passes, ▶ shuttle bus service, ▶ carpooling program, ▶ guaranteed ride home, and ▶ parking cash-out program. <p>The City shall review and approve the Project TDM Plan prior to issuance of plan approval or building permit by the California Office of Statewide Health Planning and Development Facilities Development Division for the hospital building.</p> <p>The Project Applicant shall be subject to annual reporting and monitoring requirements to ensure that the TDM Plan and all the associated measures are being implemented. The Project Applicant shall submit annual progress reports on implementation of the TDM Plan to the City Development Services Department beginning one year after the date of TDM Plan approval. If the Project Applicant fails to submit an annual report demonstrating implementation of the TDM Plan within 60 days following the established date for annual report submittal, an administrative citation will be issued pursuant</p>	LTS

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		to Municipal Code Chapter 1.12. The required items to be included in the annual progress report are: <ul style="list-style-type: none"> ▶ contact information for the Project TDM coordinator, ▶ sample of marketing materials provided to new employees about the TDM program, ▶ number of employees participating in each TDM measure offered to employees, ▶ commute mode share of employees at the Project site, and ▶ other information demonstrating implementation of specific TDM measures. 	
Impact 3.14-2: Result in an Exceedance of City of Elk Grove General Plan VMT Thresholds Project-generated VMT per service population would not result in an exceedance of the VMT per service population threshold for the Employment Center land use designation (i.e., 47.1 VMT). Further, the addition of Project-generated total daily VMT within the City would not result in an exceedance of the established Citywide limit of 6,367,833 VMT. Therefore, this impact would be less than significant.	LTS	No mitigation is required.	LTS
Impact 3.14-3: Impact on Transit Facilities Based on Federal Transit Administration transit system performance data, demand for transit within the City is low. Therefore, it is anticipated that Project-generated transit demand may be accommodated by the existing transit service and that the crush load capacity of the transit system would not be exceeded. Additionally, the proposed Project would not permanently alter the physical transportation network external to the Project site such that the bus stops serving these routes would be adversely affected. Thus, this impact would be less than significant.	LTS	No mitigation is required.	LTS
Impact 3.14-4: Impact on Bicycle Facilities The proposed Project would provide on- and off-site bicycle facilities, including a Class I multipurpose trail along the eastern border of the Project site adjacent to West Taron Drive and secure bicycle parking areas throughout the Project site. An amendment to the City's Bicycle, Pedestrian, and Trails Master Plan is proposed for the Project to construct the Class I multipurpose trail along this proposed alignment. This bicycle facility would enhance the bicycle	LTS	No mitigation is required.	LTS

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network safety and access in the vicinity of the Project site by providing an off-street alternative for some users. Additionally, the Project would not add trips to an existing transportation facility or service that does not meet current design standards and would not degrade the Bicycle Streetscore LTS that is used to determine consistency with the <i>City of Elk Grove Transportation Analysis Guidelines</i> . Therefore, this impact would be less than significant.			
Impact 3.14-5: Impacts on Pedestrian Facilities The proposed Project would provide on-site pedestrian facilities and would not disrupt any existing or planned pedestrian facilities City General Plan and Bicycle, Pedestrian, and Trails Master Plan. Additionally, the Project would not add trips to an existing transportation facility or service that does not meet current design standards or degrade the Pedestrian Streetscore LTS that is used to determine consistency with the City of Elk Grove Transportation Analysis Guidelines. Therefore, this impact would be less than significant.	LTS	No mitigation is required.	LTS
Impact 3.14-6: Substantially Increase Hazards Because of a Design Feature or Incompatible Uses The proposed Project would be subject to, and constructed in accordance with, applicable roadway design and safety guidelines. Therefore, the Project would not increase hazards because of a roadway design feature or incompatible uses. However, the proposed hospital building and helicopter landing site may create an air navigation hazard if marking and lighting were not provided. Implementation of mitigation would reduce this impact to less than significant.	PS	Mitigation Measure 3.14-6: Provide Marking and Lighting Consistent with FAA Requirements The Project Applicant shall incorporate marking and lighting specifications into the final engineering and design plans. The marking and lighting for the hospital and the proposed helicopter landing site shall be consistent with FAA Advisory Circular 150/5390-2C (Heliport Design), Chapter 4 (Hospital Heliports), and Section 415 (Heliport Lighting), and navigation lighting shall be consistent with FAA Advisory Circular 70/7460-1L Change 2 (Obstruction Marking and Lighting). The Project Applicant shall provide plans, permits, and documentation demonstrating compliance and required approvals from FAA and the California Department of Transportation Division of Aeronautics to City Development Services Department prior to operation of the hospital and helicopter landing site. Additionally, the Project Applicant shall file FAA Form 7460-2, Notice of Actual Construction or Alteration, any time the Project is abandoned or within 5 days after the construction reaches its greatest height.	LTS
Impact 3.14-7: Result in Inadequate Emergency Access Implementation of the Project would result in additional Project site access points. Additionally, the internal circulation network and any changes to the external circulation network would be subject to review by the City and Cosumnes Community Services District Fire Department, thus ensuring that the Project would be designed to meet all applicable emergency access and	LTS	No mitigation is required.	LTS

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<p>design standards. Therefore, adequate emergency access would be provided. This impact would be less than significant.</p>			
<p>Impact 3.14-8: Result in Temporary but Prolonged Construction Transportation Impacts</p> <p>Construction of the proposed Project would occur adjacent to and within the public roadway right-of-way; thus, it would likely require temporary lane closures and may result in unexpected slowing of vehicular traffic if not properly planned and managed. Additionally, the hauling of heavy machinery (e.g., bulldozers, excavators) and operation of large trucks associated with construction activities may necessitate travel along roadways not designated as truck routes and may potentially cause damage to the roadbed. Therefore, construction of the Project may potentially result in temporary but prolonged construction transportation impacts. Implementation of mitigation would reduce this impact to less than significant.</p>	PS	<p>Mitigation Measure 3.14-8: Prepare and Implement a Temporary Traffic Control Plan</p> <p>Prior to construction of each Project phase, the construction contractor shall coordinate with the City Traffic Engineering Section of the Public Works Department to determine the required process, permits, and approvals. Additionally, the construction coordinator shall prepare a temporary traffic control plan to the satisfaction of the City Traffic Engineering Section of the Public Works Department. The temporary traffic control plan shall at a minimum:</p> <ul style="list-style-type: none"> ▶ describe the proposed work zone; ▶ delineate construction areas in a manner that protects vehicles, bicyclists, and pedestrians; ▶ describe applicable detours and lane closures; ▶ describe appropriate tapers and lengths, signs, and spacing; ▶ identify appropriate channelization devices and spacing; ▶ identify work hours and workdays; ▶ identify proposed speed limit changes if applicable; ▶ describe the signalized and nonsignalized intersections that would be affected by the work; ▶ describe the trucks that would be used during construction, including the number and size of the trucks used per day, their expected arrival and departure times, their general weight and size, and circulation patterns; ▶ identify all staging areas; ▶ require that access to all nearby parcels be maintained; ▶ present a strategy/plan with the City to address how potential Project-related pavement damage will be addressed; ▶ provide a description and/or documentation of the pavement conditions along the roadways used to access the site before the commencement of construction and at the conclusion of construction; 	LTS

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		<ul style="list-style-type: none"> ▶ coordinate with the City to determine how any potential pavement damage directly resulting from construction of the Project would be mitigated; and ▶ require that adequate emergency vehicle access to all surrounding parcels and properties be maintained at all times. 	
Utilities and Service Systems			
Impact 3.15-1: Environmental Impacts from Expansion of Infrastructure The Project would include the construction of off-site improvements to electrical distribution facilities and wastewater conveyance pipelines that would result in significant environmental impacts. Implementation of mitigation measures identified in this EIR would mitigate these impacts with the exception of visual character and construction noise. This impact would be significant and unavoidable.	S	There are no feasible mitigation measures to address this impact.	SU
Impact 3.15-2: Sufficient Water Supplies Based on the WSA for the Project, prepared by SCWA, there is sufficient water to meet the demands of the Project during normal, single, and multiple dry years. This impact would be less than significant.	LTS	No mitigation is required.	LTS
Impact 3.15-3: Impacts to Available Wastewater Treatment Capacity The proposed Project's would have a wastewater generation of approximately 0.24 mgd and would result in 0.17 percent increase over existing wastewater treatment volumes. This would be within the SRWTP's permitted capacity of 181 mgd. Therefore, the Project's wastewater generation would be accommodated within the existing and planned treatment capacity of the SRWTP. This impact is considered less than significant	LTS	No mitigation is required.	LTS
Impact 3.15-4: Impacts to Solid Waste Facilities and Compliance with Regulations Related to Solid Waste The Project would include uses that would increase the generation solid waste, including municipal solid waste, medical waste, and radioactive waste. Waste generated at the Project site may be accommodated by several permitted haulers, and wastes would be hauled to a permitted landfill for disposal as selected by the hauler. There is substantial remaining capacity in the landfills serving local waste haulers, with an average remaining capacity of more than 70 percent. Therefore, because the Project would not generate solid waste in excess of State or local standards or in excess of the capacity of the local	LTS	No mitigation is required beyond federal, State, and City regulations that address solid waste handling, recycling and diversion requirements.	LTS

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
NI = No impact LTS = Less than significant PS = Potentially significant S = Significant SU = Significant and unavoidable			
infrastructure, negatively impact the provisions of solid waste services, or impact the attainment of solid waste reduction goals, this impact would be less than significant.			
Cumulative Impacts			
Impact 4-1: Contribute to Cumulative Visual Character Impacts	Cumulatively considerable and significant and unavoidable	No feasible mitigation measures are available to mitigate the substantial alteration of the Project site's visual character as proposed associated with the height of the proposed hospital and its alteration of the City skyline. Project design alternatives associated with height are considered in Chapter 5, "Alternatives." This impact would be cumulatively considerable and significant and unavoidable.	Cumulatively considerable and significant and unavoidable
Impact 4-2: Contribute to Cumulative Light and Glare Impacts	Cumulatively considerable and significant and unavoidable	Mitigation Measure 3.1-3 would avoid daytime glare through the use of nonreflective materials consistent with City Design Guideline 11 Chapter 5B. Although the use of curtains/blinds would reduce the extent of building interior lighting at night, it would not eliminate all light sources, such as building entry features and the helicopter landing site. Because of the height and mass of the hospital building, no feasible mitigation measures are available to offset the Project's contribution to lighting impacts. This impact would be cumulatively considerable and significant and unavoidable.	Cumulatively considerable and significant and unavoidable
Impact 4-3: Contribute to Cumulative Conflicts with or Obstruction of Implementation of an Applicable Air Quality Plan	Not cumulatively considerable	No mitigation is required.	Not cumulatively considerable
Impact 4-4: Contribute to Cumulative Construction Air Pollutant or Precursor Emissions	Not cumulatively considerable	No mitigation is required.	Not cumulatively considerable
Impact 4-5: Contribute to Cumulative Long-Term Operational Criteria Air Pollutant or Precursor Emissions	Cumulatively considerable and significant and unavoidable	Although Mitigation Measures 3.2-3a, 3.2-3b, and 3.2-3c would reduce operational emissions to the extent feasible, long-term emissions would not be fully offset. Project operations may contribute to the nonattainment status of the Sacramento Valley Air Basin with respect to the NAAQS and CAAQS. This impact would be cumulatively considerable and significant and unavoidable.	Cumulatively considerable and significant and unavoidable
Impact 4-6: Contribute to Cumulative Impacts on Biological Resources	Not cumulatively considerable	No mitigation is required.	Not cumulatively considerable
Impact 4-7: Contribute to Cumulative Impacts on Archaeological Resources, Tribal Cultural Resources, and Human Remains	Not cumulatively considerable	No mitigation is required.	Not cumulatively considerable
Impact 4-8: Contribute to Cumulative Energy Impacts	Not cumulatively considerable	No mitigation is required.	Not cumulatively considerable

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
NI = No impact LTS = Less than significant PS = Potentially significant S = Significant SU = Significant and unavoidable			
Impact 4-9: Contribute to Cumulative Disturbance to or Loss of Paleontological Resources	Not cumulatively considerable	No mitigation is required.	Not cumulatively considerable
Impact 4-10: Contribute to Cumulative Impacts Related to Greenhouse Gas Emissions and Climate Change	Not cumulatively considerable	No mitigation is required.	Not cumulatively considerable
Impact 4-11: Contribute to Cumulative Impacts Related to Creation of a Hazard through the Routine Transport, Use, or Disposal of Hazardous Materials, Including Reasonably Foreseeable Upset or Accidents during Construction and Operation	Not cumulatively considerable	No mitigation is required.	Not cumulatively considerable
Impact 4-12: Contribute to Cumulative Impacts Related to Impairment of or Physical Interference with an Adopted Emergency Response or Emergency Evacuation Plan.	Not cumulatively considerable	No mitigation is required.	Not cumulatively considerable
Impact 4-13: Contribute to Cumulative Water Quality Impacts	Not cumulatively considerable	No mitigation is required.	Not cumulatively considerable
Impact 4-14: Contribute to Cumulative Impacts Related to Drainage and Flooding	Not cumulatively considerable	No mitigation is required.	Not cumulatively considerable
Impact 4-15: Contribute to Cumulative Groundwater Impacts	Cumulatively considerable and significant and unavoidable	The Project has incorporated a thorough water use efficiency and conservation strategy, including compliance with the City water conservation strategy to reduce the water demands of the Project. Landscape irrigation would also comply with the Chapter 14.10 (Water Efficient Landscape Requirements) of the City Municipal Code. In addition, the Project would be constructed with recycled water infrastructure ("purple pipe") throughout the site to facilitate future connection to recycled water supplies when these become available. No further mitigation is possible to reduce the water demand of the Project while meeting Project objectives. Therefore, the Project's contribution to substantial effects related to groundwater depletion and recharge would be cumulatively considerable and significant and unavoidable.	Cumulatively considerable and significant and unavoidable
Impact 4-16: Contribute to Cumulative Impacts Related to Conflicts with a Land Use Plan, Policy, or Regulation Adopted for the Purpose of Avoiding or Mitigating an Environmental Effect	Not cumulatively considerable	No mitigation is required.	Not cumulatively considerable
Impact 4-17: Contribute to Cumulative Construction Noise Impacts	Cumulatively considerable and significant and unavoidable	Implementation of Mitigation Measure 3.11-1 would ensure that noise exposure from on-site construction at off-site noise-sensitive receptors would be minimized. However, City noise standards may still be exceeded because construction of the Project and the Elk Grove Independent Senior Housing	Cumulatively considerable and significant and unavoidable

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
NI = No impact LTS = Less than significant PS = Potentially significant S = Significant SU = Significant and unavoidable			
		Project would occur close to the same noise-sensitive receptors. Mitigation Measure 3.11-1 would assist in decreasing exposure to the construction-generated noise contributions of the Project, but it is not expected to fully offset Project construction noise contributions to cumulative noise impacts. Therefore, this impact would be cumulatively considerable and significant and unavoidable.	
Impact 4-18: Contribute to Cumulative Stationary Noise Impacts	Not cumulatively considerable	No mitigation is required.	Not cumulatively considerable
Impact 4-19: Contribute to Cumulative Noise Impacts from Ambulance Sirens and Helicopter Events	Not cumulatively considerable	No mitigation is required.	Not cumulatively considerable
Impact 4-20: Contribute to Cumulative Traffic Noise Impacts	Not cumulatively considerable	No mitigation is required.	Not cumulatively considerable
Impact 4-21: Contribute to Cumulative Inducement of Unplanned Growth	Not cumulatively considerable	No mitigation is required.	Not cumulatively considerable
Impact 4-22: Contribute to Cumulative Impacts on Fire Protection and Emergency Medical Response Facilities	Not cumulatively considerable	No mitigation is required.	Not cumulatively considerable
Impact 4-23: Contribute to Cumulative Impacts on Police Protection Facilities	Not cumulatively considerable	No mitigation is required.	Not cumulatively considerable
Impact 4-24: Contribute to Cumulative Impacts on Vehicle Miles Traveled	Not cumulatively considerable	No mitigation is required.	Not cumulatively considerable
Impact 4-25: Contribute to Cumulative Impacts on Transit, Bicycle, and Pedestrian Facilities	Not cumulatively considerable	No mitigation is required.	Not cumulatively considerable
Impact 4-26: Contribute to Cumulative Construction-Related Transportation Impacts	Not cumulatively considerable	No mitigation is required.	Not cumulatively considerable
Impact 4-27: Contribute to Cumulative Water Supply Impacts	Cumulatively considerable and significant and unavoidable	The Project has incorporated a thorough water use efficiency and conservation strategy, including compliance with the City water conservation strategy to reduce the water demands of the Project. Landscape irrigation would also comply with the Chapter 14.10 (Water Efficient Landscape Requirements) of the City Municipal Code. In addition, the Project would be constructed with recycled water infrastructure ("purple pipe") throughout the site to facilitate future connection to recycled water supplies when these become available. No further mitigation is possible to reduce the water demand of the Project while	Cumulatively considerable and significant and unavoidable

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
NI = No impact LTS = Less than significant PS = Potentially significant S = Significant SU = Significant and unavoidable			
		meeting Project objectives. Therefore, the Project's contribution to water supply impacts would be cumulatively considerable and significant and unavoidable.	
Impact 4-28: Contribute to Cumulative Impacts on Wastewater Services	Cumulatively considerable and significant and unavoidable	There is no feasible mitigation available to the Project that could offset its increase in wastewater demands. Therefore, the Project's contribution to wastewater impacts would be cumulatively considerable and significant and unavoidable.	Cumulatively considerable and significant and unavoidable
Impact 4-29: Contribute to Cumulative Solid Waste Impacts	Not cumulatively considerable	No mitigation is required.	Not cumulatively considerable

1 INTRODUCTION

This draft environmental impact report (Draft EIR) evaluates the environmental impacts of the proposed California Northstate University (CNU) Medical Center Project (Project). It has been prepared under the direction of the City of Elk Grove (City) in accordance with the requirements of the California Environmental Quality Act (CEQA) (Public Resources Code [PRC] Section 21000 et seq.) and the State CEQA Guidelines (California Code of Regulations, Title 14, Chapter 3, Section 15000 et seq.). This chapter of the Draft EIR provides information on:

- ▶ the Project requiring environmental analysis (synopsis);
- ▶ the type, purpose, and intended uses of this Draft EIR;
- ▶ the scope of this Draft EIR;
- ▶ agency roles and responsibilities;
- ▶ the public review process;
- ▶ the organization of this Draft EIR; and
- ▶ standard terminology.

1.1 PROJECT REQUIRING ENVIRONMENTAL ANALYSIS

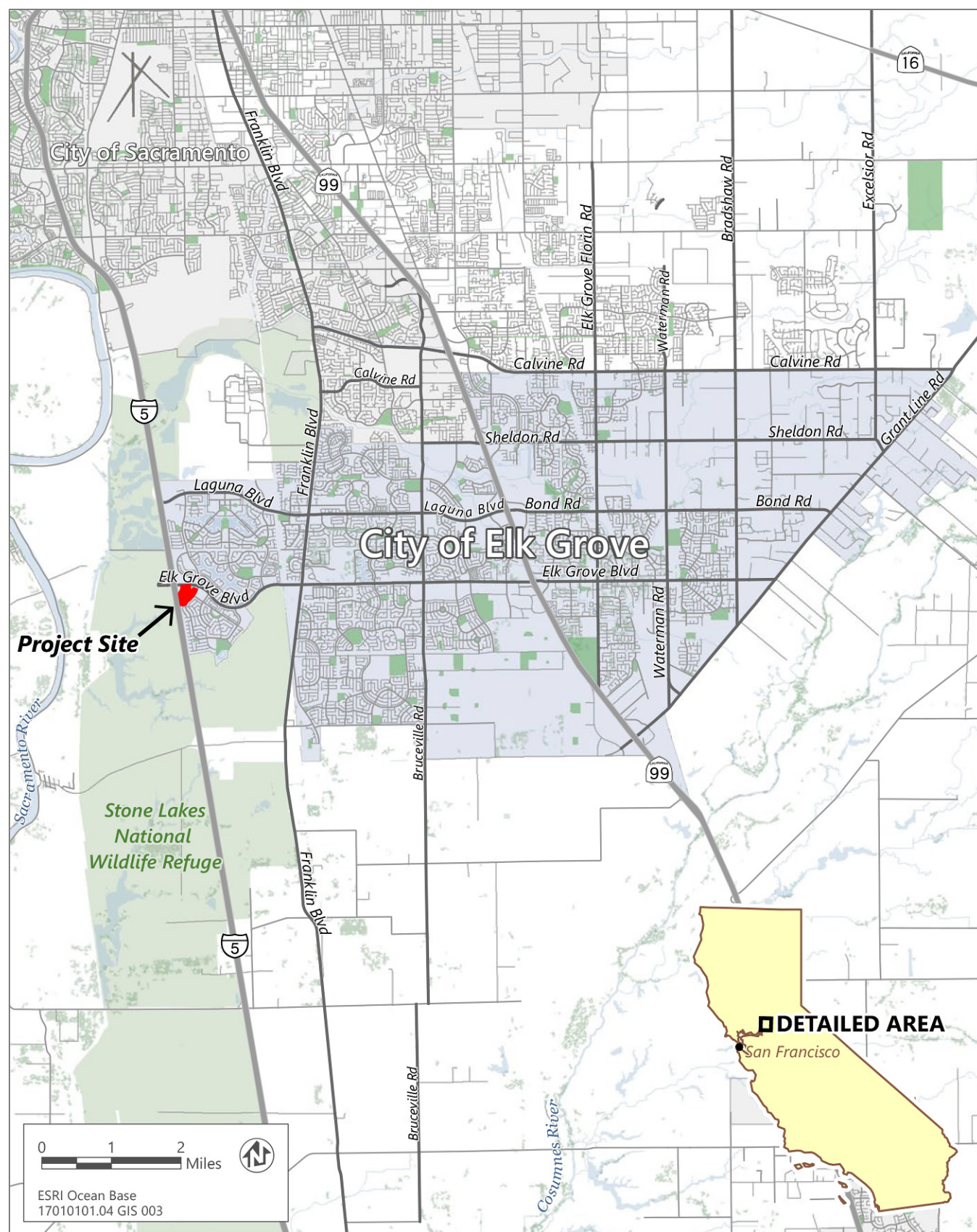
This section presents a synopsis of the Project characteristics. For further information on the proposed Project, see Chapter 2, "Project Description."

CNU is proposing to redevelop several CNU-owned parcels located along the western edge of the City in Sacramento County, California, just east of Interstate 5 (I-5) (Figure 1-1). CNU is a private education institution that operates its School of Medicine on the proposed Project site. The remainder of the site is developed with retail, restaurant, and other uses. The Project would redevelop the approximately 24.4-acre Project site to include a hospital with a helistop and associated central plant and mechanical yard; an outpatient clinic; a medical office building; a dormitory adjacent to the existing School of Medicine; three parking structures, including two with accessory retail; and public gathering spaces. At buildout, the Project would employ approximately 4,000 people and house up to 300 students.

1.2 PURPOSE AND INTENDED USES OF THIS DRAFT EIR

According to CEQA, preparation of an EIR is required whenever it can be fairly argued, based on substantial evidence, that a proposed project may result in a significant environmental impact. An EIR is an informational document used to inform public-agency decision makers and the general public of the significant environmental impacts of a project, identify possible ways to minimize the significant impacts, and describe reasonable alternatives to the project that could feasibly attain most of the basic objectives of the project while substantially lessening or avoiding any of the significant environmental impacts. Public agencies are required to consider the information presented in the EIR when determining whether to approve a project.

This Draft EIR has been prepared to meet the requirements of a project EIR as defined by Section 15161 of the State CEQA Guidelines. A project EIR focuses on the changes in the physical environment that would result from the implementation of a project, including its planning, construction, and operation. The State's intention is that a lead agency preparing a project EIR would not be required to provide further environmental analysis for additional regulatory approvals following approval of the project, absent conditions requiring a subsequent EIR, a supplement to the EIR, or an addendum. (See State CEQA Guidelines Sections 15162–15164.)



Source: Adapted by Ascent Environmental in 2019

Figure 1-1 **Project Location**

1.3 SCOPE OF THIS DRAFT EIR

This Draft EIR includes an evaluation of the following 15 environmental issue areas, as well as other CEQA-mandated issues (e.g., cumulative impacts, growth-inducing impacts, significant irreversible environmental changes, significant unavoidable impacts, and alternatives):

- ▶ Aesthetics;
- ▶ Air Quality;
- ▶ Biological Resources;
- ▶ Cultural and Tribal Cultural Resources;
- ▶ Energy;
- ▶ Geology and Soils;
- ▶ Greenhouse Gas Emissions and Climate Change;
- ▶ Hazards and Hazardous Materials;
- ▶ Hydrology and Water Quality;
- ▶ Land Use and Planning;
- ▶ Noise and Vibration;
- ▶ Population, Employment, and Housing;
- ▶ Public Services;
- ▶ Transportation; and
- ▶ Utilities and Service Systems.

Under the CEQA statute and the State CEQA Guidelines, a lead agency may limit an EIR's discussion of environmental effects when such effects are not considered potentially significant (PRC Section 21002.1[e]; State CEQA Guidelines Sections 15128, 15143). Information used to determine which impacts would be potentially significant was derived from review of the applicant's Project plans and technical studies, review of applicable planning documents and CEQA documentation, fieldwork, feedback from public and agency consultation, and comments received on the Notice of Preparation (NOP) (see Appendix A of this Draft EIR).

The NOP was distributed on May 29, 2019, to responsible agencies, interested parties, and organizations, as well as private organizations and individuals that may have an interest in the Project. A scoping meeting for the Project was held from 5:30 p.m. to 7:30 p.m. on Monday, June 24, 2019, at the Elk Grove City Council Chambers located at 8400 Laguna Palms Way in Elk Grove. The purpose of the NOP and the scoping meeting was to provide notification that an EIR for the Project was being prepared and to solicit input on the scope and content of the environmental document. Through review of existing information and the scoping process, it was determined that each of the issue areas listed above should be evaluated fully in this Draft EIR. Further information on the NOP and scoping process is provided below in Section 1.5, "Public Review Process."

1.4 AGENCY ROLES AND RESPONSIBILITIES

1.4.1 Lead Agency

The City is the lead agency responsible for approving the Project and for ensuring that the requirements of CEQA have been met. After the EIR public review process is complete, the City Council will determine whether to certify the EIR (see State CEQA Guidelines Section 15090) and approve the Project.

1.4.2 Trustee and Responsible Agencies

A trustee agency is a State agency that has jurisdiction by law over natural resources that are held in trust for the people of the State of California. The only trustee agency that has jurisdiction over resources potentially affected by the Project is the California Department of Fish and Wildlife.

Responsible agencies are public agencies other than the lead agency that have discretionary-approval responsibility for reviewing, carrying out, or approving elements of a project. Responsible agencies should participate in the lead agency's CEQA process, review the lead agency's CEQA document, and use the document when making a decision on project elements. The following agencies may have responsibility for, or jurisdiction over, the implementation of elements of the Project.

STATE AGENCIES

- ▶ California Department of Fish and Wildlife (CDFW)
- ▶ California Department of Public Health (CDPH)
- ▶ California Department of Transportation (Caltrans) Division of Aeronautics
- ▶ California Office of Statewide Health Planning and Development (COSHDP) Facilities Development Division
- ▶ Central Valley Regional Water Quality Control Board (Central Valley RWQCB)

REGIONAL AND LOCAL AGENCIES

- ▶ Sacramento Metropolitan Air Quality Management District (SMAQMD)
- ▶ Sacramento Area Sewer District (SASD)
- ▶ Sacramento County Water Agency (SCWA)
- ▶ Sacramento Municipal Utility District (SMUD)

1.5 PUBLIC REVIEW PROCESS

As identified above in Section 1.4, "Scope of This Draft EIR," in accordance with CEQA regulations, a NOP was distributed on May 29, 2019, to responsible agencies, interested parties and organizations, and private organizations and individuals that could have interest in the Project.

The purpose of the NOP was to provide notification that an EIR for the Project was being prepared and to solicit input on the scope and content of the document. The NOP and responses to the NOP are included in Appendix A of this Draft EIR.

This Draft EIR is being circulated for public review and comment for a period of 45 days. During this period, comments from the general public, as well as organizations and agencies, on environmental issues may be submitted to the lead agency.

Upon completion of the public review and comment period, a Final EIR will be prepared that will include both written and oral comments on the Draft EIR received during the public review period, responses to those comments, and any revisions to the Draft EIR made in response to public comments. Together, the Draft EIR and Final EIR make up the EIR for the Project.

1.6 DRAFT EIR ORGANIZATION

This Draft EIR is organized into chapters, as identified and briefly described below. The chapters are further divided into sections (e.g., Chapter 3, “Environmental Setting, Impacts, and Mitigation Measures,” and Section 3.5, “Energy”):

- ▶ The Executive Summary: This chapter introduces the Project; provides a summary of the environmental review process and key environmental issues; and lists significant impacts and mitigation measures to reduce significant impacts to a less-than-significant level.
- ▶ Chapter 1, “Introduction”: This chapter provides a synopsis of the Project; identifies the type, purpose, and intended uses of this Draft EIR; describes the scope of this Draft EIR; identifies the lead and responsible agencies; describes the public review process; describes the organization of this Draft EIR; and identifies standard terminology.
- ▶ Chapter 2, “Project Description”: This chapter describes the location, background, and goals and objectives for the Project and describes the Project elements in detail.
- ▶ Chapter 3, “Environmental Setting, Impacts, and Mitigation Measures”: The sections in this chapter evaluate the expected environmental impacts generated by the Project, arranged by subject area (e.g., Hydrology and Water Quality). The introduction to this chapter describes the approach to the environmental analysis and also lists the effects found not to be significant and therefore not evaluated further in the subsections of Chapter 3. In each subsection of Chapter 3, the regulatory background, existing conditions, analysis methodology, and thresholds of significance are described. The anticipated changes to the existing conditions after development of the Project are then evaluated for each subject area. For any significant or potentially significant impact that would result from Project implementation, mitigation measures are presented, and the level of impact significance after mitigation is identified. Environmental impacts are numbered sequentially within each section (e.g., Impact 3.2-1, Impact 3.2-2, Impact 3.2-3 and so forth and so on). Any required mitigation measures are numbered to correspond to the impact numbering; therefore, the mitigation measure for Impact 3.2-2 would be Mitigation Measure 3.2-2.
- ▶ Chapter 4, “Cumulative Impacts”: This chapter provides information required by CEQA regarding cumulative impacts that would result from implementation of the Project together with other past, present, and probable future projects.
- ▶ Chapter 5, “Alternatives”: This chapter evaluates alternatives to the Project, including alternatives considered but eliminated from further consideration, the No-Project Alternative, and two alternative development options. The environmentally superior alternative is identified.
- ▶ Chapter 6, “Other CEQA-Mandated Sections”: This chapter evaluates growth-inducing impacts and the irreversible and irretrievable commitment of resources and discloses any significant and unavoidable adverse impacts.
- ▶ Chapter 7, “Report Preparers”: This chapter identifies the preparers of the document.
- ▶ Chapter 8, “References”: This chapter identifies the organizations and persons consulted during preparation of this Draft EIR and the documents and individuals used as sources for the analysis.

The following appendices are also included in this EIR:

- ▶ Appendix A, “Notice of Preparation and Comments”;
- ▶ Appendix B, “California Northstate University Medical Center Submittal and Signage Plan”;
- ▶ Appendix C, “California Northstate University AB 900 Application”;
- ▶ Appendix D, “EIR Construction and Operation Assumptions”;
- ▶ Appendix E, “Proposed Agreement for Elk Grove Police Services”;
- ▶ Appendix F, “Air Quality, Energy, and Greenhouse Gases Modeling Data”;
- ▶ Appendix G, “Air Quality Mitigation Plan”;

- ▶ Appendix H, "California Northstate Medical Center Project Drainage Study";
- ▶ Appendix I, "Noise Measurement Data and Noise Modeling Calculations";
- ▶ Appendix J, "California Northstate University Medical Center Helicopter Noise Report";
- ▶ Appendix K, "Traffic Analysis"; and
- ▶ Appendix L, "Water Supply Assessment."

1.7 STANDARD TERMINOLOGY

This Draft EIR uses the following standard terminology:

- ▶ "AB 900" refers to the Jobs and Economic Improvement Through Environmental Leadership Act, which created PRC Chapter 6.5 under Division 13 of the PRC (CEQA).
- ▶ "Applicant" means a person who proposes to carry out a project that needs a lease, permit, license, certificate, or other entitlement for use or financial assistance from one or more public agencies when that person applies for the governmental approval or assistance (CEQA Guidelines Section 15351).
- ▶ "Less-than-significant impact" means no substantial adverse change in the physical environment (no mitigation is needed).
- ▶ "No impact" means no measurable change from existing conditions (no mitigation is needed).
- ▶ "Potentially significant impact" means a substantial adverse change in the environment (mitigation is recommended because potentially significant impacts are treated as significant impacts).
- ▶ "Project" means the California Northstate University Medical Center Project.
- ▶ "Significant impact" means a substantial adverse change in the physical environment (mitigation is recommended).
- ▶ "Significant and unavoidable impact" means a substantial adverse change in the physical environment that cannot be avoided even with the implementation of all feasible mitigation.

2 PROJECT DESCRIPTION

2.1 PROJECT OVERVIEW

CNU is a private education institution that operates a pharmacy and medical college (hereinafter “School of Medicine”) at 9700 West Taron Drive and an approximately 15,000-square-foot (sq. ft.) event center in the office building at 9650 West Taron Drive in Elk Grove, California. The establishment of CNU at its current location was permitted via a conditional use permit (EG-11-003) approved by the City Planning Commission on March 3, 2011.

CNU is proposing to expand its facilities and services to provide emergency and other medical-related services in the western portion of the City through redevelopment of several CNU-owned parcels adjacent to the existing CNU School of Medicine. The Project would retain the existing pharmacy and medical college and add a hospital with a helicopter landing site (helistop), an outpatient clinic, a medical office building, two parking structures with accessory retail, a dormitory, one student parking structure with rooftop sports facilities, a central plant and mechanical yard, public gathering spaces, and surface parking. The Project would employ approximately 4,000 people at buildout. The Project’s dormitory would include 150 units to house 300 students. The hospital would consist of 733,290 sq. ft. and 400 total patient beds.

2.2 PROJECT LOCATION AND SETTING

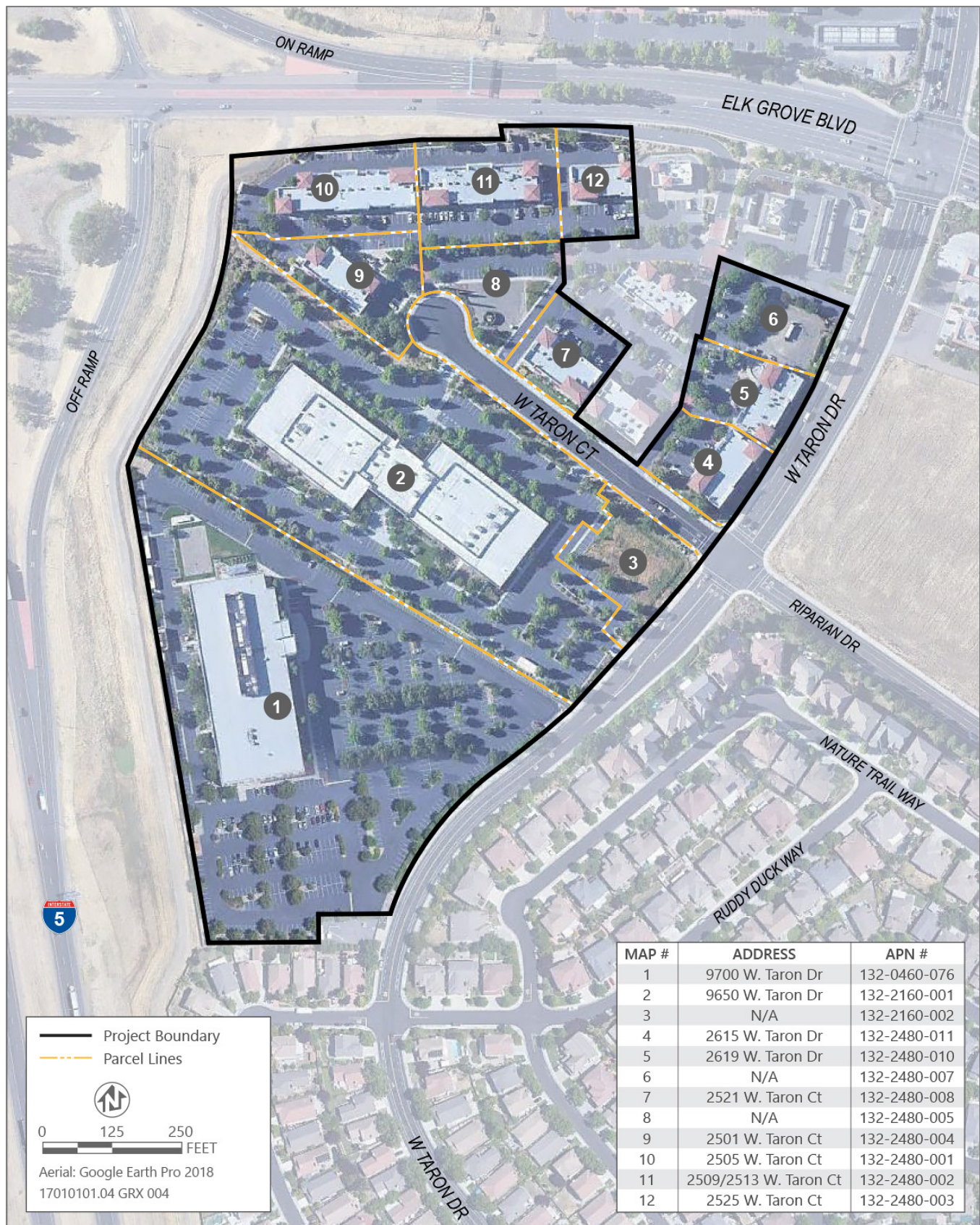
The Project site is located along the western boundary of the City in Sacramento County, California, just east of I-5 (Figure 1-1). The approximately 24.4-acre Project site consists of 12 parcels owned by CNU (Assessor Parcel Numbers [APNs] 132-2480-001, -002, -003, -004, -005, -007, -008, -010, and -011; 132-2160-001 and -002; 132-0460-076) (Figure 2-1). The site is bordered by Elk Grove Boulevard to the north, I-5 to the west, West Taron Drive to the east, and the Laguna Stone Lake subdivision to the south.

The site is developed, except for an approximately 0.5-acre vacant lot (APN 132-2160-002) on the southwest corner of West Taron Court and West Taron Drive and an approximately 0.75-acre vacant lot (APN 132-2480-007) along West Taron Drive north of West Taron Court. A total of nine structures encompassing approximately 243,837 sq. ft. of building space currently occupy the Project site (Figure 2-1). This total includes the 109,300 sq. ft., two-story School of Medicine building at 9700 West Taron Drive. Current uses on the Project site include the existing CNU Medical College and Pharmacy College, an office building (ALLDATA), a brewery, an animal hospital, several eating establishments, and other commercial and retail uses. Directly adjacent to the site are a gas station, restaurants, single-family residences, and a church. Roadway access to the Project site is provided from West Taron Drive and Riparian Drive, and West Taron Court provides access to the interior of the site.

2.3 PROJECT OBJECTIVES

The primary objectives of the CNU Medical Center Project are to:

- ▶ develop a hospital close to the CNU School of Medicine campus to provide training opportunities for its students,
- ▶ offer health care for patients in southwestern Sacramento County,
- ▶ offer emergency access to medical services along the I-5 corridor, and
- ▶ Develop a hospital of sufficient size with complete clinical services and the capability to provide highly specialized care as required for a designation as a teaching hospital.



Source: Ascent Environmental 2019

Figure 2-1 Current Project Site Conditions

2.4 PROPOSED PROJECT

This section describes the requested entitlements needed to support Project implementation and includes a detailed description of all Project elements.

2.4.1 General Plan and Zoning Changes

To accommodate the proposed land uses, the Project would require the City General Plan land use designation for nine parcels on the Project site to be changed from Community Commercial (CC) to Employment Center (EC) and for three parcels to be changed from Light Industrial (LI) to EC (Figure 2-2).

Because the Project site is located in the 200-year floodplain (0.5-percent chance of a flood occurring in any given year), the Project would also include the following proposed text revisions to General Plan Policy ER-2-3, which would allow construction of an essential health care facility in the floodplain. These text changes would align the policy with existing State law and would apply Citywide:

To the extent feasible, locate, and encourage other agencies to locate, new essential government service facilities and essential healthcare facilities outside of 100-year and 200-year flood hazard zones, except in cases where such locations would compromise facility functioning or ensure they are constructed so as to minimize damage to said facilities if located in such area. For purposes of this section, essential public facilities include, but are not limited to, hospitals and health care facilities, emergency shelters, fire stations, emergency command centers, and emergency communications facilities.

The Project would also require rezoning of nine parcels on the Project site from General Commercial (GC) to Business and Professional Office Park (BP) and three from Industrial-Office Park (MP) to BP to allow the proposed development (Figure 2-3). Additionally, for the same reasons General Plan Policy ER 2-3 would be amended, the following revisions to the Elk Grove Municipal Code Title 23 (Zoning), Section 23.42.040.D would be required and would apply Citywide:

2. Health care facilities and government facilities shall be prohibited from being built in the F district. The City Council may approve exceptions to this if it determines that the operations of the proposed facility would be substantially compromised in an alternative location. To the extent feasible, new essential public facilities should be located outside of the F100, F200, and F100/200 areas, or should be constructed so as to minimize damage to said facilities if located in such area. For purposes of this section, essential public facilities include, but are not limited to, hospitals and health care facilities, emergency shelters, fire stations, emergency command centers, and emergency communications facilities.

2.4.2 Other Local and Regional Agency Approvals

The following other local and regional permits and approvals would be required for the Project:

- ▶ City approval of an amendment to the City Bicycle, Pedestrian, and Trails Master Plan to modify the location of a proposed Class I multipurpose trail alignment;
- ▶ City approval of a District Development Plan, including overall site plan approval and establishment of development elements, including, but not limited to, parking, landscaping, pedestrian improvements, general building size and location, and other features that are common across the site;
- ▶ City approval of a Design Review for the architecture of the proposed Phase 1 buildings (hospital and central plant);
- ▶ City approval of a Conditional Use Permit;
- ▶ City approval of a Uniform Sign Program;
- ▶ City abandonment of West Taron Court;
- ▶ City execution of the agreement for Elk Grove Police Department services;
- ▶ Sacramento County Water Agency approval of water supply distribution facility improvements;
- ▶ Sacramento Area Sewer District approval of wastewater conveyance facility improvements;

- ▶ Sacramento Municipal Utility District (SMUD) approval of electrical conveyance facility improvements; and
- ▶ Sacramento Metropolitan Air Quality Management District approval of an Authority to Construct and Permit to Operate.

2.4.3 State

The following State approvals would be required for the Project. As noted below the California Office of Statewide Health Planning and Development Facilities Development Division (OSHPD) would approve building permits associated with the proposed hospital and the medical office building. As part of the building permit process OSHPD would require the designation of a licensed general contractor, approval of the inspector of record by the architect of record and OSHPD, City entitlement approval, and Cosumnes Community Services District Fire Department approval.

- ▶ California Department of Public Health approval of a radioactive material license and licensing to operate the hospital and other health care facilities,
- ▶ California Office of Statewide Health Planning and Development Facilities Development Division approval of a building permit and certificate of occupancy,
- ▶ California Department of Transportation Division of Aeronautics permitting of the hospital helistop under Section 21666 of the Public Utilities Code, and
- ▶ California Department of Fish and Wildlife approval of an incidental take permit pursuant to California Fish and Game Code Section 2081 for Swainson's hawk.

2.4.4 Federal

The following Federal actions would be required for the Project:

- ▶ Federal Aviation Administration (FAA) actions under Federal Aviation Regulation Part 77 and Part 157 regarding objects affecting navigable air space and establishment of a helistop.

2.4.5 Project Development Plan Overview

The proposed CNU Medical Center would be subject to the City's design review process, including District Development Plan Design Review for the overall phased Project, and Design Review for each phase.

The Project would involve the demolition of existing buildings (Figure 2-4) and the construction of proposed buildings, parking structures, and associated uses (Figure 2-5) over three phases. Development of the Project would be guided by its District Development Plan, which would provide for overall site plan approval and establish development elements, including, but not limited to, pedestrian improvements, signage, landscaping, internal setbacks, lighting, parking, building architecture design parameters, building placement and configuration, and other features that are common across the site (Appendix B). Each phase of the Project would also require a Design Review permit, which is required for new construction of a single nonresidential building or structure, or multiple buildings or structures within a single shopping center complex, comprising 10,000 sq. ft. or more (e.g., commercial, office, industrial, public/quasi-public).

The City's Design Review process, permit requirements, and exemptions are detailed in Section 23.16.080 of its Zoning Code. The purpose of the City's design review process is "to promote the orderly and harmonious growth of the City; to encourage development in keeping with the desired character of the City; to ensure physical, visual, and functional compatibility between uses; and to help prevent the depreciation of land values by ensuring proper attention is given to site and architectural design." The design review process provides:

for consideration of development proposals in which the site, architectural, and overall project design are substantially improved by, and provides a City benefit with, the consideration of modifications to the conventional development regulations of the underlying zoning district under special circumstances. However, the flexibility does not apply to use of the land in that only those uses permitted within the underlying zoning district are allowed.

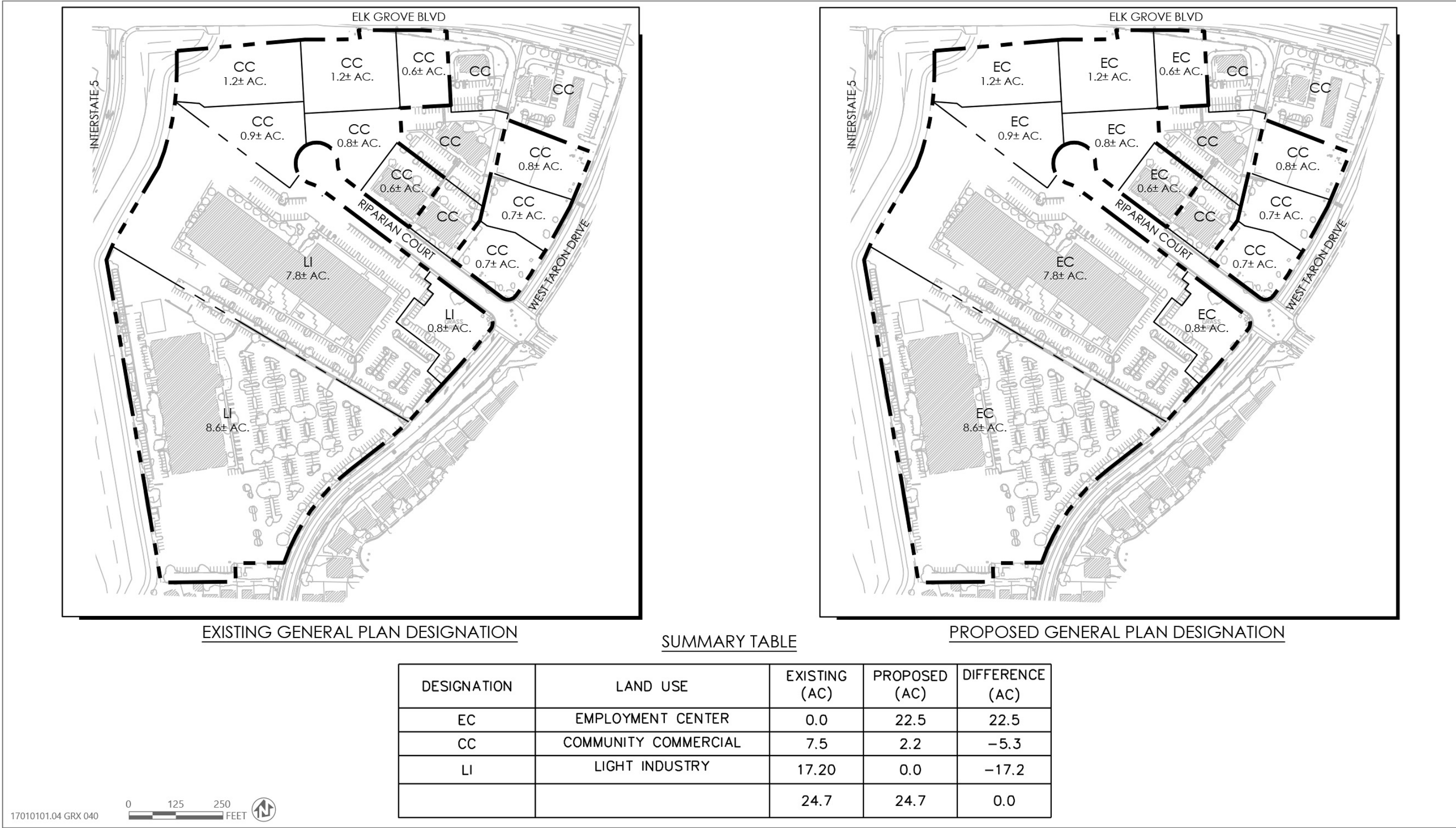


Figure 2-2 General Plan Land Use Designation Changes

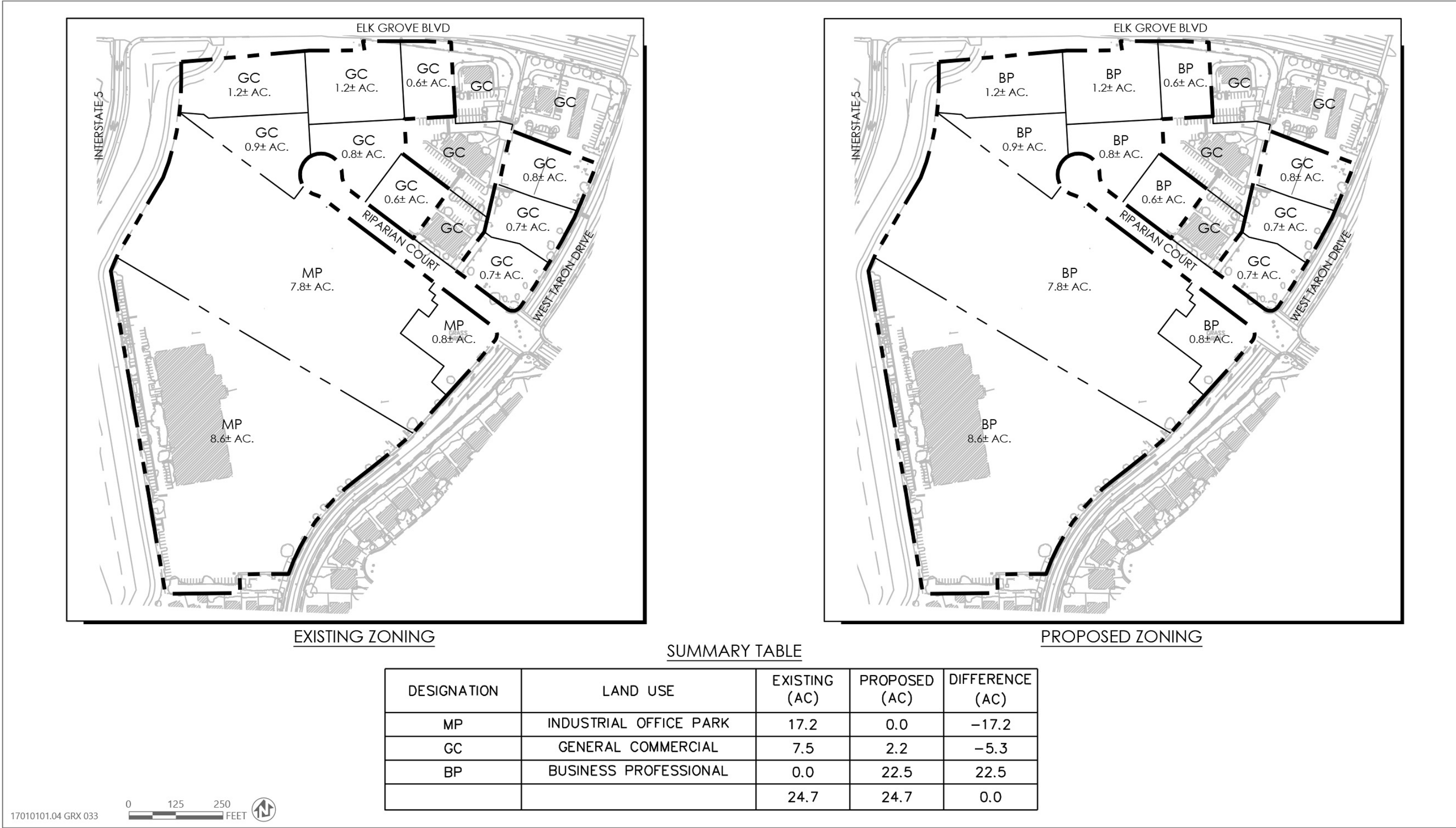


Figure 2-3 Zoning Changes



Figure 2-4 Building Retention and Demolition Plan

The City's District Development Plan design review may be combined with Major Design Review for the architecture of the initial phase of development. Therefore, Phase 1 is proposed for Major Design Review approval by the City concurrently with approval of the District Development Plan. The other phases must be consistent with the approved District Development Plan but would be considered for Major Design Review approval at a later date.

At buildout, the Project site would include the uses identified in Table 2-1. A detailed description of each phase is provided below. The anticipated building massing of the Project site at buildout is shown in Figure 2-6.

Table 2-1 Project Summary

Proposed Facility	Floor Plate Area (square feet)	Total Building Area (square feet)	Number of Levels Above Ground	Number of Levels Below Ground	Total Number of Levels
CNU School of Medicine (existing)	54,900	109,800	2	0	2
Hospital	76,000	733,290	13	1	14
Central plant	14,650	37,500	3	0	3
Mechanical yard	15,500	15,500	0	0	0
Outpatient clinic	33,700	168,500	4	1	5
Medical office building	20,000	100,000	5	0	5
Parking garage 1/retail	51,400	257,000	4	1	5
Parking garage 2/retail	41,400	207,000	4	1	5
Dormitory/administrative support	24,000	120,000	5	0	5
Student parking/sport courts	35,000	70,000	2 ¹	1	2

¹ One story above ground, but with sport courts on the roof top.

Source. Data provided by Fong & Chan Architects and compiled by Ascent Environmental in 2020

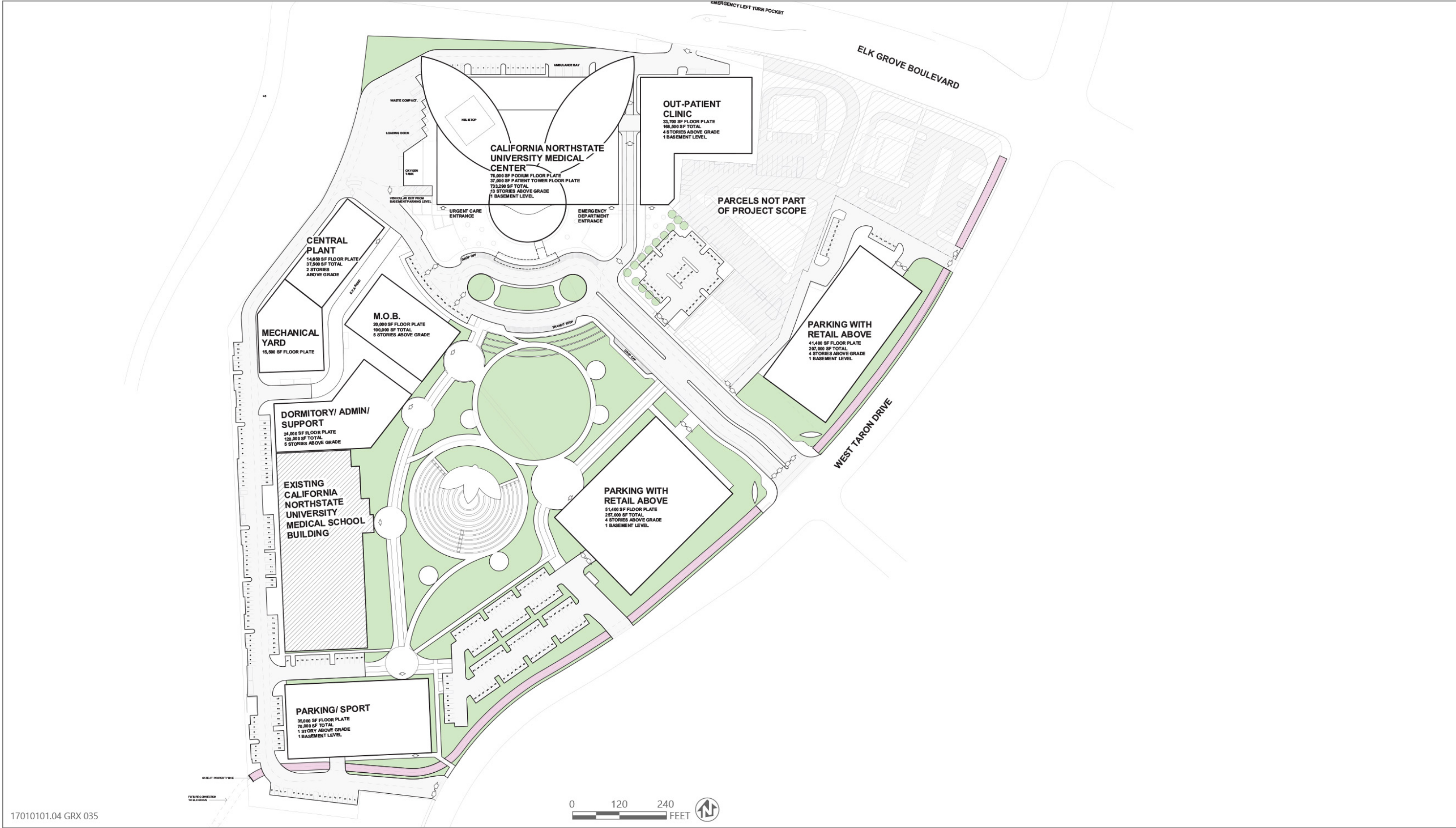
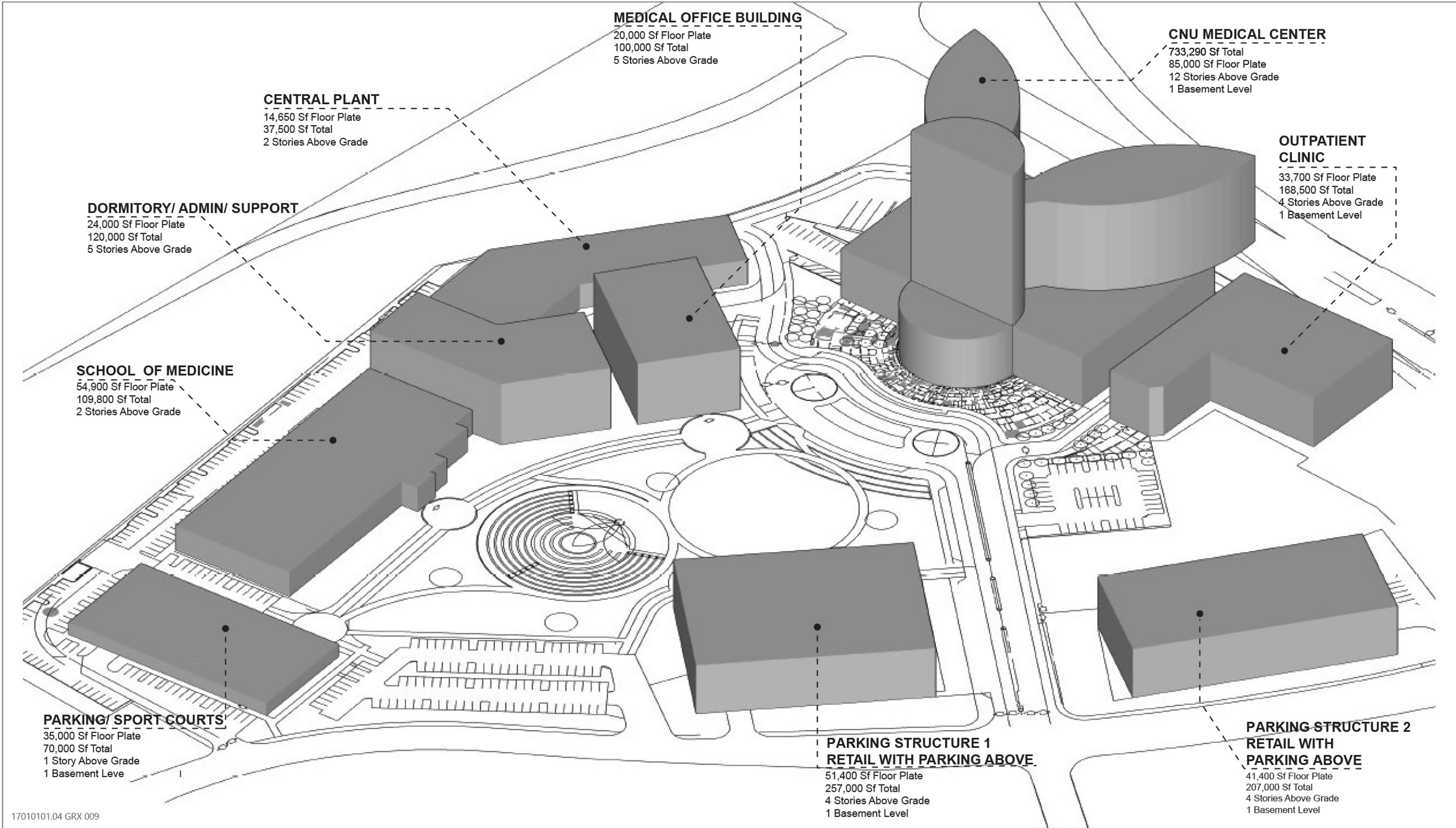


Figure 2-5 Master Site Plan



Source: Image produced and provided by Fong & Chan Architects in 2020

Figure 2-6 Building Massing at Buildout

2.4.6 Phase 1

Figure 2-7 shows the facilities proposed under Phase 1. Phase 1 would include construction of a 596,790 sq. ft., approximately 241-patient-bed (with the potential to be expanded to 250 beds) hospital in the northwest corner of the Project site. The hospital would include a nine-story central tower and single seven-story patient-bed wing with a floor plate area of 37,000 sq. ft. atop a four-story, main hospital podium with a 76,000 sq. ft. floor plate area. A helistop would be constructed on the roof of the patient-bed wing of the tower, and hospital administration would be housed on the eighth level of the central tower, such that the total height of the hospital would be a total of 13 stories above grade with a mechanical penthouse as the 13 floor on the top of the building (approximately 261 feet tall). The hospital would also include a partial basement level under the main hospital podium, providing underground parking for up to 230 vehicles. Because the hospital would be located within the 200-year floodplain, the first floor of the hospital building would be elevated structurally approximately 7 feet above the existing grade to prevent habitable space from being flooded during a 200-year flood event. The reader is referred to Appendix B for detailed building plans and the design of the helistop. The reader is referred to Appendix B for detailed building plans and the design of the helistop. The hospital building would also be required to install radio equipment for use by emergency personnel such as the City Police Department and the Cosumnes Community Services District.

FAA has determined that the hospital would not be a hazard to air navigation provided that the hospital building is marked/lighted in accordance with FAA's Advisory Circular 70/7460-1L Change 2 (Obstruction Marking and Lighting) Chapters 4 (Light Guideline), 8 (Dual Lighting with Red/Medium-Intensity Flashing White Light Systems), and 12 (Marking and Lighting Equipment and Information) of this Advisory Circular (Sanders 2020). Thus, building lighting is anticipated.

Phase 1 would also include construction of a 37,500 sq. ft., two-story central plant building with parking level at grade. The central plant would provide power and heating to the entire Project site and would include four diesel-powered emergency generators on the second floor. Approximately 90,000 gallons of diesel fuel would be stored in two underground tanks that would be designed to withstand being submerged during a flood event. The central plant would also house support equipment for the hospital on the second level and approximately 79 parking spaces on the ground level, provide an administrative mezzanine level, and include a 15,500 sq. ft. exterior mechanical yard. The main site access (West Taron Court) would be modified to provide a traffic circle drop-off area at the hospital and would consist of three lanes.

Figures 2-8 through 2-11 provide architectural renderings of the hospital building, while Figures 2-12 and 2-13 provide architectural renderings of the central plant building.

This phase would require demolition of existing buildings on the site before construction (see Figure 2-4). Demolition would remove a total of 37,446 sq. ft. of building space, along with the associated parking lots occupying 2501, 2505, 2509/2513, and potentially 2525 West Taron Court. A parking lot associated with 9650 West Taron Drive would also be removed.

When completed, Phase 1 would include 241 patient beds and a total of 1,427 parking spaces consisting of 1,118 surface parking spaces (1,078 existing spaces retained and 40 new spaces) (see Figure 2-7), 230 parking spaces on the lower level of the hospital, and 79 parking spaces (stacked) on the base level of the central plant building.

2.4.7 Phase 2

Phase 2 would include construction of a second patient-bed wing (136,500 sq. ft.) connected to the central tower atop the four-story main hospital podium, an outpatient clinic, a medical office building, and the first of two general-use parking structures serving the Project site (Figure 2-14). For structural purposes, the Project Applicant may construct a structural shell of the second patient wing of Phase 2 at the same time that the rest of the hospital is built. The addition of the second seven-story patient-bed tower would increase the hospital square footage to its ultimate size of 733,290 sq. ft. and 400 total patient beds. The 168,500 sq. ft. outpatient clinic would include four stories

aboveground with one basement-floor parking level accommodating 100 parking spaces using a stacked parking system. This ambulatory care building would contain outpatient medical services. The 100,000 sq. ft. medical office building would include five stories aboveground and contain outpatient medical clinics and hospital administration space. The first floor of both the outpatient clinic and medical office building would be elevated above the existing grade to prevent habitable space from being flooded during a 200-year event.

The parking structure would be 257,000 sq. ft. in size and include four stories aboveground and one basement level. The top floor would include approximately 50,000 sq. ft. of retail, medical offices, and/or other supporting uses. The basement level and three floors would provide parking for 1,700 vehicles. A semiautomatic stacked parking system is anticipated to be used on the parking levels and standard parking would be used on the basement level.

Phase 2 would modify the main access (West Taron Court) from a three-lane roadway under Phase 1 to a four-lane roadway with a median and would create an expanded passenger pickup and drop-off area in front of the hospital (Figure 2-14).

This phase would require demolition of a 7,337 sq. ft. building at 2521 West Taron Court, the 75,080 sq. ft. building at 9650 West Taron Drive, parking lots associated with 2521 and 2525 West Taron Court, the 5,315 sq. ft. building at 2525 West Taron Court and its associated parking lot if these were not demolished during Phase 1, and a parking lot associated with 9650 West Taron Drive (Figure 2-4). During construction of Phase 2, the existing School of Medicine, hospital, patient bed tower, helistop, and central plant constructed during Phase 1 would be operational.

Upon completion of Phase 2, the Project would include a total of 2,699 parking spaces consisting of 590 surface parking spaces (520 existing spaces retained and 70 new spaces), 309 parking spaces on the lower levels of the hospital and central plant building, 100 spaces in the outpatient clinic, and 1,700 parking spaces in the parking structure.

2.4.8 Phase 3

Phase 3 would include construction of a second general-use parking structure to serve the site, a dormitory, and a third parking structure for medical student use with sports facilities on the roof (Figure 2-15). The second parking structure would be 207,000 sq. ft. and would include four stories aboveground and one basement level. The top floor would include approximately 40,000 sq. ft. of retail, food service, and other supporting uses. The basement level and other three floors would provide parking for 1,000 vehicles. A semiautomatic stacked parking system would be used on the three aboveground stories, and the basement level would be standard parking. Phase 3 would also include construction of a 120,000 sq. ft., five-story dormitory directly adjacent to the existing School of Medicine building that would include 150 units capable of housing approximately 300 students on four floors, and 24,000 sq. ft. for office space for administration support services. This building would be designed so that all habitable space is structurally elevated above the 200-year flood elevation.

A 70,000 sq. ft. parking structure intended to provide parking and recreational facilities for medical students would also be constructed during this phase. This student parking structure would include one parking level above ground and one basement parking level that would accommodate a total of 200 total standard parking spaces. The roof of this parking structure would be occupied by basketball, tennis, and volleyball courts.

Demolition during this phase would remove a total of 14,674 sq. ft. of building space, the parking lots occupying 2615 and 2619 West Taron Court, and the parking lots associated with 9700 West Taron Drive (Figure 2-4). All facilities completed during Phases 1 and 2 would be operational during construction of Phase 3.

With completion of Phase 3, the Project would include a total of 3,404 parking spaces consisting of 363 surface parking spaces (323 existing spaces retained and 40 new spaces), 41 parking spaces on the lower level of the central plant (the hospital basement would be used for support service, and the central plant would be converted to standard parking in Phase 3), 100 spaces in the outpatient clinic, 2,700 parking spaces in the parking structures, and 200 parking spaces in the student parking structure.



Figure 2-7 Phase 1 Site Plan



Source: Image prepared and provided by Fong & Chan Architects in 2020

Figure 2-8 Hospital Building – East Exterior Elevation



17010101.04 GRX 011

Source: Image prepared and provided by Fong & Chan Architects in 2020

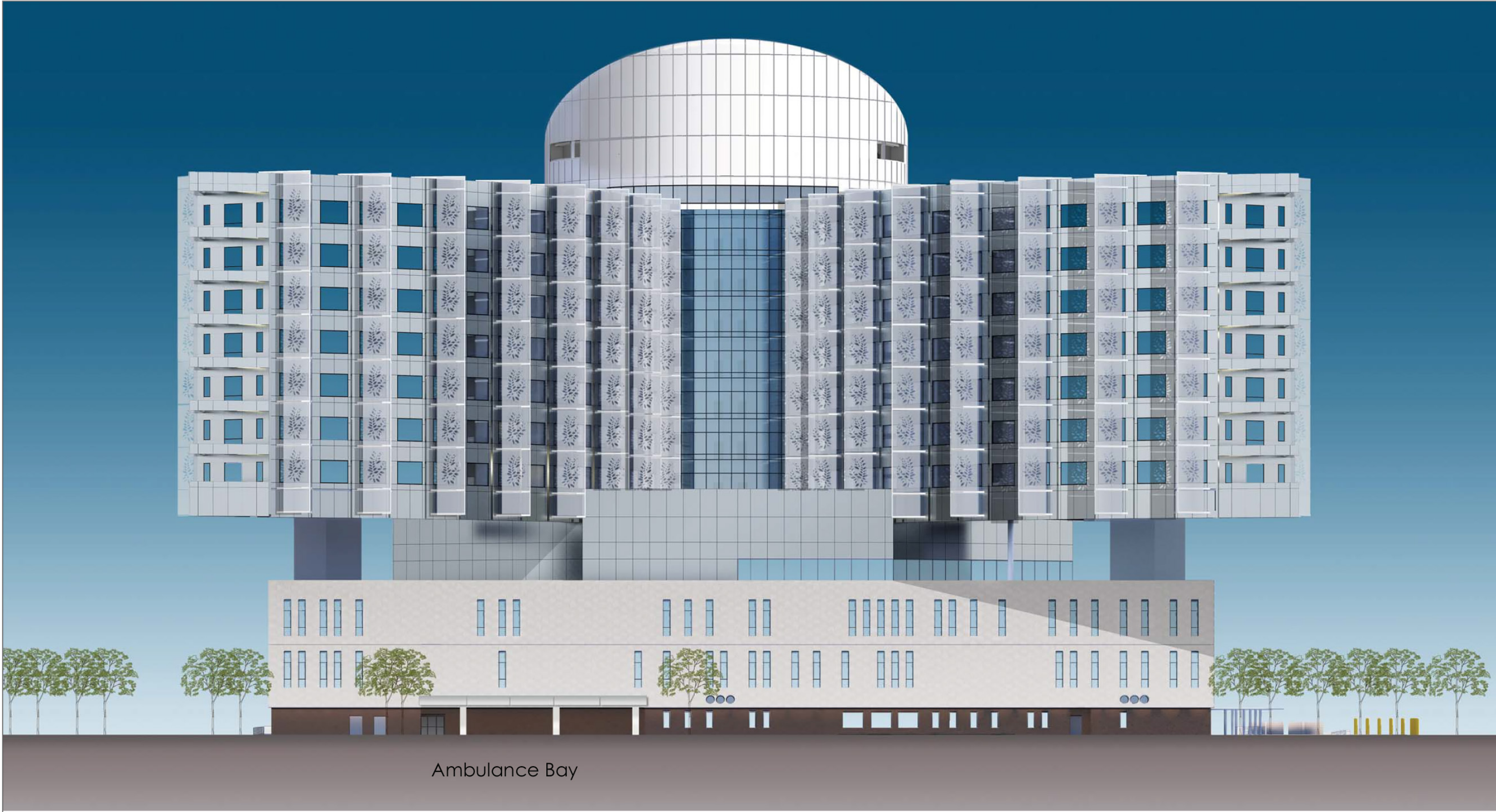
Figure 2-9 Hospital Building – South Exterior Elevation



17010101.04 GRX 012

Source: Image prepared and provided by Fong & Chan Architects in 2020

Figure 2-10 Hospital Building – West Exterior Elevation



17010101.04 GRX 013

Source: Image prepared and provided by Fong & Chan Architects in 2020

Figure 2-11 Hospital Building – North Exterior Elevation

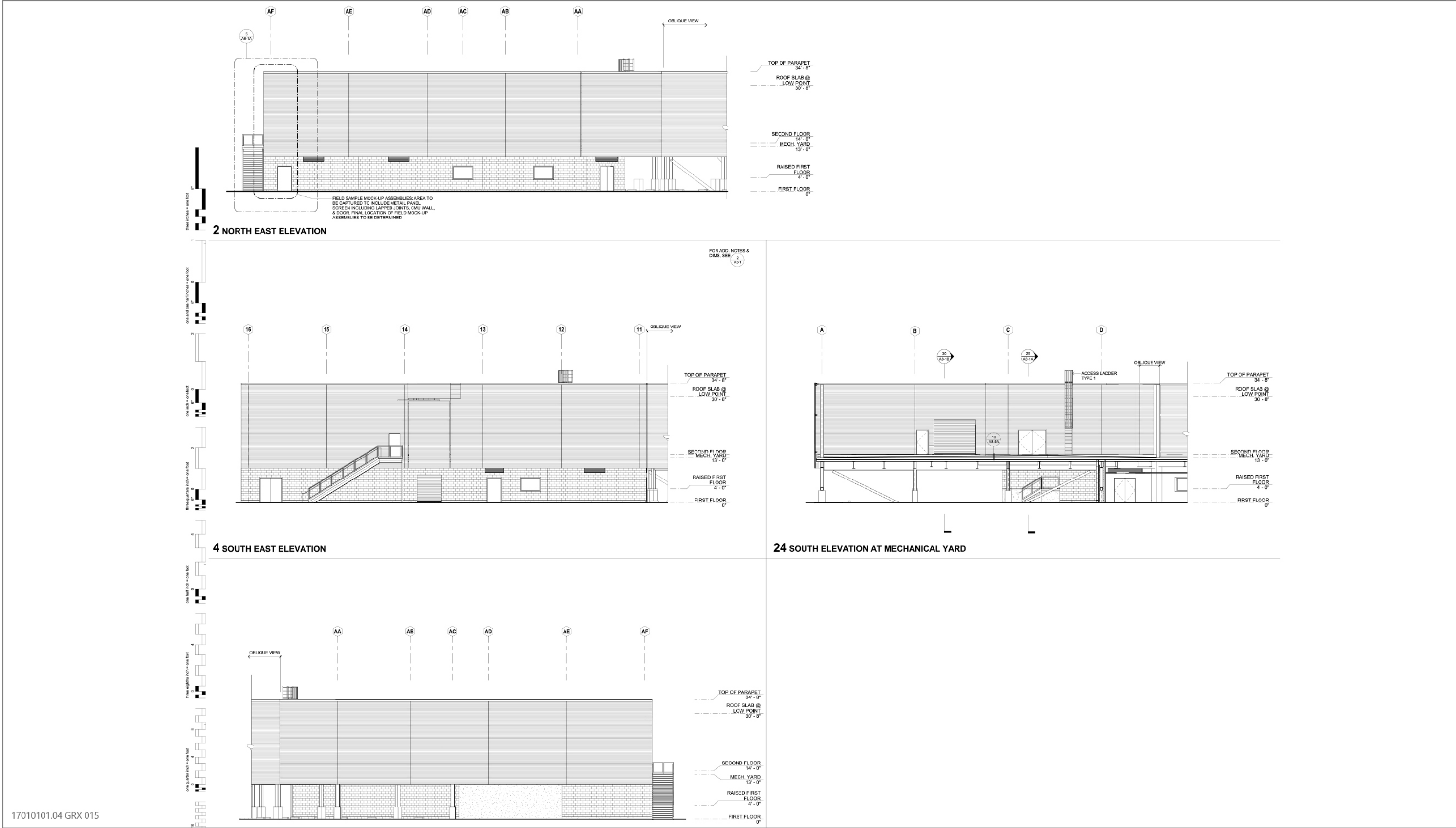
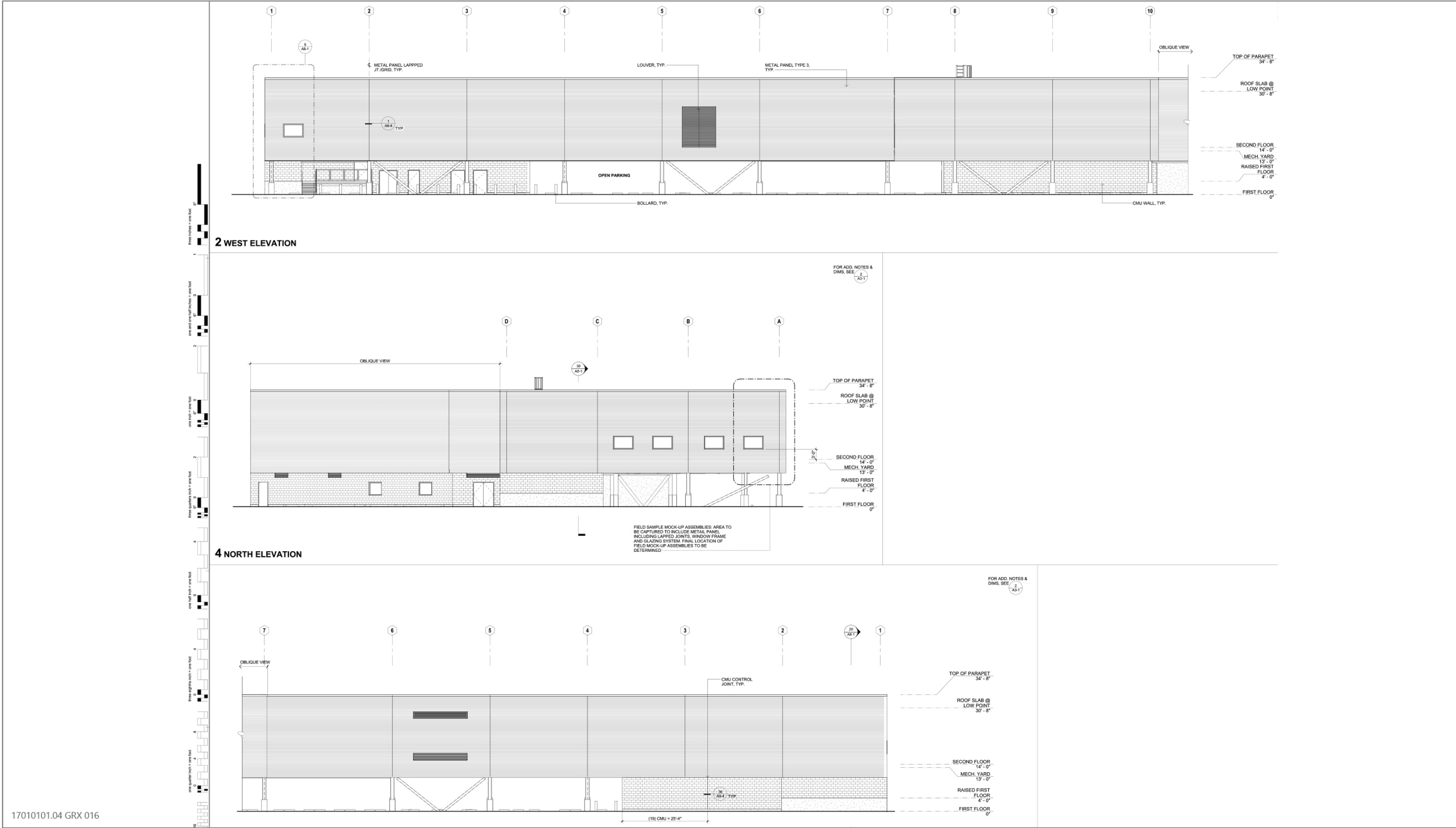


Figure 2-12 Central Plant Rendering – West, North, and East Exterior Elevations



Source: Image produced and provided by Fong & Chan Architects in 2020

Figure 2-13 Central Plant Rendering – Exterior Elevations of Southern Portion of Building

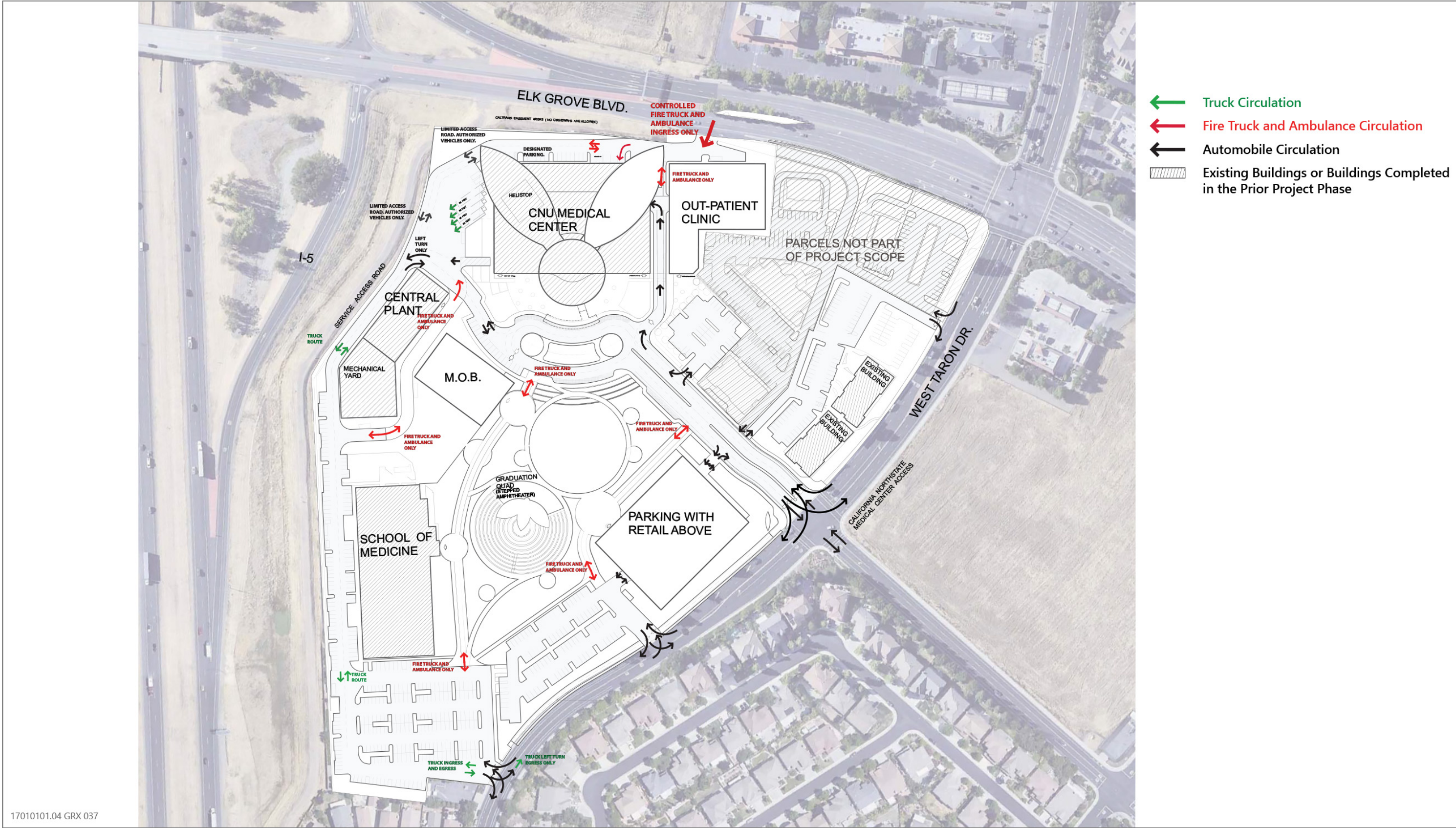


Figure 2-14 Phase 2 Site Plan

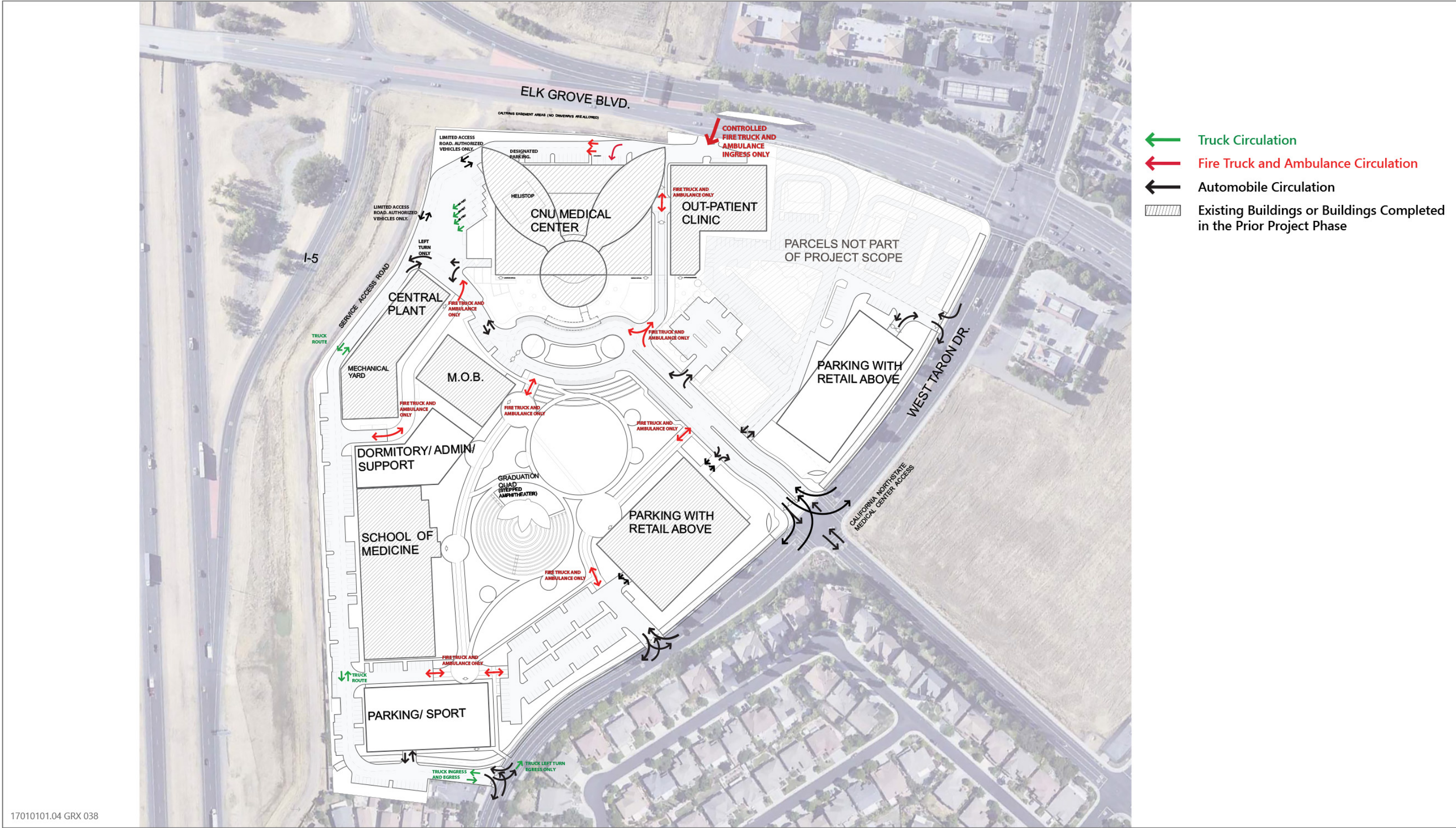


Figure 2-15 Phase 3 Site Plan

2.4.9 Other Project Improvements

BICYCLE AND PEDESTRIAN AMENITIES

Site amenities proposed to serve bicycle and pedestrian circulation are shown in Figure 2-16. At final buildout, the Project site would include a Class I multipurpose trail along the eastern border of the Project site adjacent to West Taron Drive with connections to West Taron Drive; secure bicycle parking areas in at least four locations throughout the Project site; pedestrian walkways throughout the site connecting the site to adjacent neighborhoods and recreational facilities; and Class II bike lanes on Elk Grove Boulevard, West Taron Drive, and Riparian Drive. The Class I multipurpose trail would be constructed along the eastern border of the Project site from the southwest corner of Elk Grove Boulevard and West Taron Drive to the southwest corner of the Project site during Phases 2 and 3. This trail would be 14 feet wide, including a 10-foot-wide two-lane section of pavement with 2-foot-wide decomposed granite shoulders on each side. The trail would be separated from the roadway by a minimum 5-foot-wide vegetated strip and from the Project site by a minimum 3-foot-wide vegetated strip.

An amendment to the City's Bicycle, Pedestrian, and Trails Master Plan would be required to modify the planned Class I trail along this proposed alignment.

LANDSCAPE IMPROVEMENTS

Landscape improvements during Phase 1 would include installation of hardscape and softscape features as shown in Figure 2-17. Figure 2-18 shows the proposed landscape improvements at Project buildout. Monuments with directional signals, flowering shrubs, and accent lighting would be installed at the Project site gateway along West Taron Drive. Pedestrian-scale lighting, consisting of pole-mounted and ground light fixtures, and columnar trees would be provided along the campus arrival spine. Parking lots would be 50 percent shaded with canopy shade trees. Building gateways would include seating elements, wayfinding signage, pedestrian-scale lighting, and flowering trees and shrubs. The quad on the west side of the campus would include a fully accessible amphitheater with a canopy-covered stage, formal and casual seating, and lawn terraces; WiFi-ready outdoor rooms with casual seating and low-scale lighting; rainwater gardens; and a promenade designed for emergency vehicle access with wayfinding signage, casual seating, and pedestrian-scale lighting. The campus edge would include evergreen screen trees and shrubs.

Along West Taron Drive, the streetscape would retain some existing trees, include new street trees, and include evergreen screen shrubs and ground cover. The Project is anticipated to result in the removal of 313 trees. There are eight trees that would meet the definition of "Trees of Local Importance" under Chapter 19.12 of the City's Municipal Code. These trees would not be removed and would be incorporated into Phase 2 improvements. A total of 313 new trees would be planted over the three phases of construction.

Landscaping would be irrigated by a water-efficient, low-flow, point-source system designed to provide adequate watering to support plant growth and ensure deeply rooted plant material while avoiding excess water application. The system would be programmable, allowing operation during late night and/or early morning hours, with multiple start times and cycles. The system would interface with a weather-based sensor that would adjust the amount of water applied to the plant material based on daily weather conditions. Irrigation materials specified for the site would be selected on the basis of durability and ease of maintenance. Landscape irrigation would also comply with Chapter 14.10 (Water Efficient Landscape Requirements) of the City Municipal Code. During operation, mowing and leaf blowing of landscaped areas would be performed weekly.

TRANSPORTATION IMPROVEMENTS

The Project is required to comply with Municipal Code development fee programs for transportation facilities. This includes the following:

- ▶ Chapter 16.95: Development Impact Fees – This chapter includes City roadway impact fees that are based on City transportation facility improvements.
- ▶ Chapter 16.96: Voluntary I-5 Subregional Corridor Transportation Improvements – The fee is based upon transportation improvement projects identified in the I-5 Subregional Corridor Improvement Plan, which includes the approximate location and cost estimate for the transportation improvements.

In addition to the above Municipal Code requirements, the Project is required to demonstrate consistency with roadway performance targets for operations of roadway segments and intersections under General Plan Policy MOB 1-3. The reader is referred to Section 3.14, "Transportation," for further information on General Plan Policy MOB 1-3. Based on the Project traffic operations analysis provided in Appendix K, the City will condition the Project to conduct the following improvements (Figure 2-19):

- ▶ West Taron Drive/Riparian Drive intersection: Signalize intersection and provide two eastbound left-turn lanes. The signal will need to be installed during Phase 1, and the left-turn lanes will be required at buildout.
- ▶ Elk Grove Boulevard/I-5 northbound ramp intersection: Signalize intersection at Project buildout.
- ▶ Elk Grove Boulevard/West Taron Drive/Harbour Point Drive intersection: Modify p.m. peak-hour traffic signal cycle length to 120 seconds at Project buildout.
- ▶ Elk Grove Boulevard/Franklin Boulevard intersection: Provide three northbound left-turn lanes by converting inside southbound travel lane to develop third northbound left-turn lane, which will require restriping the southbound travel lanes (north of Elk Grove Boulevard through the intersection). General Plan includes the reduction in through travel lanes on Franklin Boulevard from six to four lanes. This will require striping adjustment on eastbound approach to accommodate third northbound left-turn lane. These improvements will be required at Project buildout.
- ▶ West Taron Drive/Shell gas station driveway/Chevron gas station driveway intersection: Modify on-site design at the Project driveway associated with the parking garage to provide a southbound right-turn pocket at Project buildout.

These roadway improvements would occur within the existing paved right-of-way, as well as on the Project site. No significant ground disturbance impacts from these improvements would occur.

Emergency Left-Turn Pocket on Elk Grove Boulevard

The Project proposes to construct a new left-turn pocket on Elk Grove Boulevard for emergency vehicle use (i.e., ambulances, police, and fire vehicles) (Figure 2-5). As shown in Figure 2-20, the left-turn pocket paving would be marked, and signage would be provided that identifies that the turn lane is for emergency vehicles only. An emergency traffic signal would be installed to control eastbound traffic on Elk Grove Boulevard that would be triggered by emergency vehicles using the turn lane. The entrance to the Project access would be controlled with an arm barrier that could be operated only by emergency vehicle personnel and will be maintained by the hospital.



Source: Image produced and provided by Wood Rodgers in 2020

Figure 2-16 Bicycle and Pedestrian Amenities at Buildout



City of Elk Grove
California Northstate University Medical Center Campus Project Draft EIR



Source: Image produced and provided by Fong & Chan Architects in 2020

Figure 2-18 Landscape Plan at Buildout

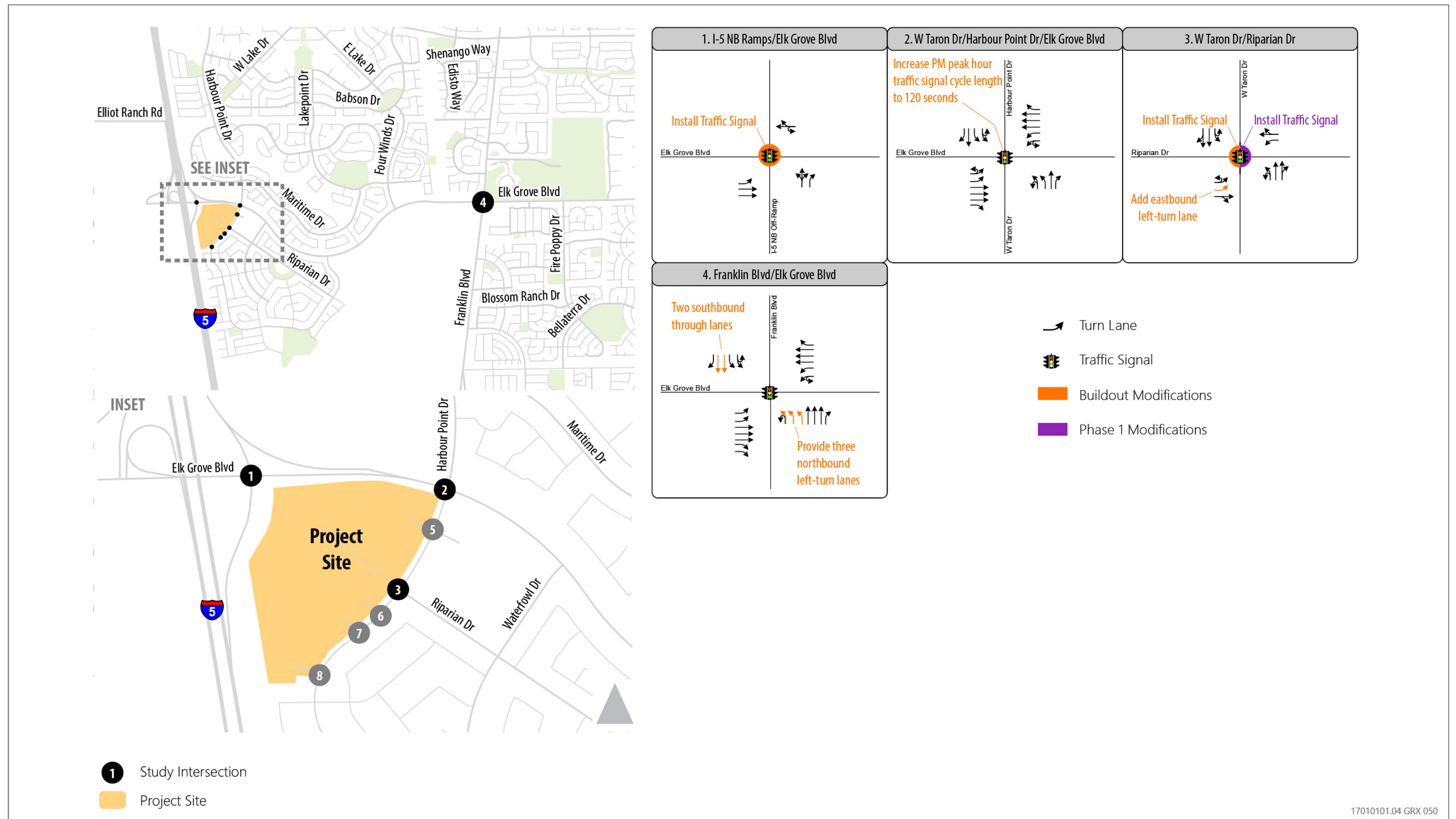


Figure 2-19 Intersection Modifications

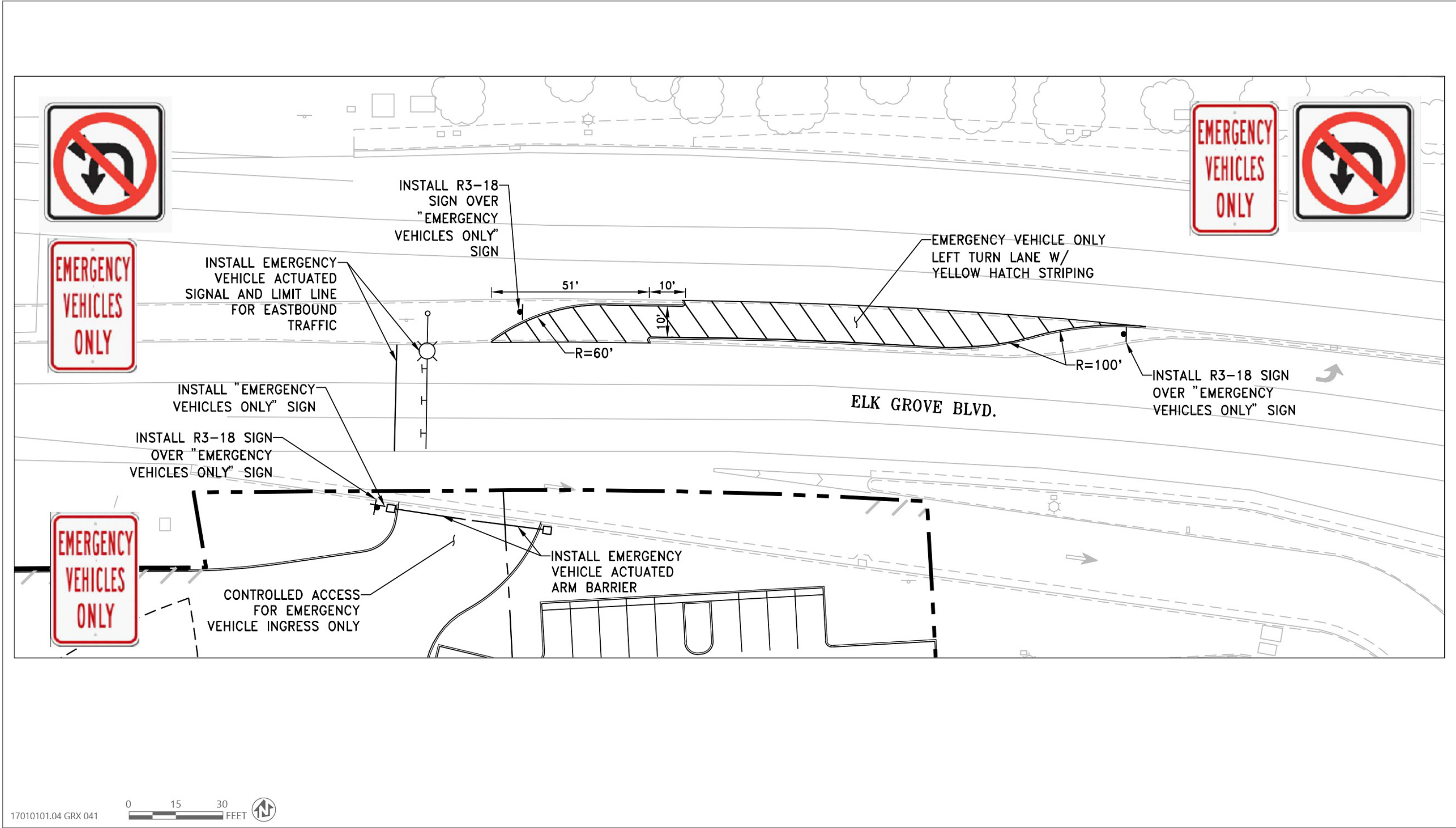


Figure 2-20 Emergency Left-Turn Pocket on Elk Grove Boulevard

INFRASTRUCTURE IMPROVEMENTS

Drainage and Water Quality

The existing site is largely developed with storm drain and water quality infrastructure in place. The site drains to a storm drainage pipeline along West Taron Drive at four locations. The upstream end of this pipeline is adjacent to the Project site, just southwest of the West Taron Drive/Elk Grove Boulevard intersection. The pipeline flows southwest and receives runoff from West Taron Drive and a portion of Riparian Drive to the southeast, in addition to runoff from the Project site. The pipeline ultimately outfalls to a detention basin to the south.

The estimated existing impervious surface area of the entire site is 75.8 percent, and the estimated post-Project imperviousness for the entire site is 70.2 percent (Wood Rodgers 2020a). CNU is proposing to install low-impact development bioretention planters with underdrains and rain gardens in landscaped areas on the Project site to provide treatment benefits while reducing the volume of runoff that must be treated before discharge from the site (Appendix B). In addition, six 8-foot by 24-foot treatment vaults would be installed at stormwater discharge locations to treat residual runoff and address trash capture requirements. The existing City storm drain facilities would continue to serve the Project. New water quality features would employ best management practices designed and installed to comply with the Stormwater Quality Design Manual for the Sacramento Region.

Water Supply Service

The Sacramento County Water Agency serves the Project site through a series of water supply pipelines sized from 10 to 12 inches in diameter. These pipelines would be used to serve the fire and domestic water needs of the Project. No off-site water supply pipeline improvements are proposed to serve the Project (Wood Rodgers 2020b).

Wastewater Service

The Sacramento Area Sewer District serves the site through a series of wastewater collection pipelines. To accommodate full buildout of the Project, off-site wastewater pipeline improvements would be required (Figure 2-21). These improvements would be implemented during Phase 1 of the Project and would include upsizing the pipeline along Riparian Drive between West Taron Drive and East Taron Drive. This pipeline would be upsized from 8 inches to 10 inches in diameter between West Taron Drive and Stonelake Club Drive, from 10 inches to 12 inches in diameter between Stonelake Club Drive and Club Park Drive, and from 15 inches to 18 inches in diameter between Club Park Drive and East Taron Drive (Wood Rodgers 2020c).

Recycled Water Service

Recycled water service is not yet available on the Project site. However, the Project is proposing to include recycled water infrastructure throughout the site to facilitate connection in the future. When this service becomes available, CNU proposes to use recycled water for landscape irrigation and other allowable uses.

Electrical Service

SMUD provides electricity to the Project site from existing underground 12-kilovolt (kV) facilities that would remain and are connected to SMUD's underground 12-kV facilities along Elk Grove Boulevard and West Taron Drive. Electrical service would be provided by SMUD and through the on-site generation of renewables, including a planned solar photovoltaic system. The Project would install solar photovoltaics on Project building roofs. Phase 1 would include solar installations on the existing CNU School of Medicine building, covering approximately 47,000 sq. ft. Phase 2 plans for solar installations on the outpatient clinic, medical office building, and Parking Garage 1, covering approximately 89,000 sq. ft. Phase 3 plans for solar installations on the dormitory and Parking Garage 2, covering approximately 56,600 sq. ft. The remaining electrical demand at Project buildout is planned to be met with 100-percent renewable energy provided through SMUD's Greenergy program. The reader is referred to Section 3.5 of this Draft EIR, "Energy," and to the Project's Assembly Bill 900 (AB 900) Application (Appendix C) for further energy details.

In addition to the upgrading of on-site electrical facilities, the Project would require SMUD to construct off-site improvements to its distribution improvements. These improvements would include a new 12-/69-kV transformer at the existing SMUD substation located southeast of the Elk Grove Boulevard/Franklin Boulevard intersection, as well as upgrades to the underground 12-kV distribution system within the public utility easement along Franklin Boulevard, Elk Grove Boulevard, and West Taron Drive (Figure 2-21). These off-site improvements would add two new 12-kV primary service points to the Project site: one 4-mega volt ampere for the hospital and one 2-mega volt ampere for the central plant.

Natural Gas Service

Natural gas is supplied to the Project site by Pacific Gas and Electric Company (PG&E). No off-site improvements to PG&E gas lines are proposed to accommodate buildout of the proposed Project. Additional information on the energy demands of each phase of the proposed Project is presented in Section 3.5, “Energy,” and Appendix C.

Electric-Vehicle Charging Stations

Consistent with the Project’s AB 900 Application commitments (see Appendix C) and City standards, the Project would install Level 2 electric vehicle (EV) charging stations as part of each phase. Level 2 EV chargers require a dedicated 240-volt or 208-volt electrical circuit, similar to what is required for a clothes dryer or electric range. Level 2 charging times are much faster than with a Level 1 EV charging station. Table 2-2 identifies the proposed number of Level 2 EV chargers that would be installed in each phase and the number of parking spaces they would serve. Upon completion of the proposed Project, the site would include a total of 84 EV chargers serving 166 parking spaces throughout the Project site (Table 2-2).

Table 2-2 Proposed Electric-Vehicle Charging Stations

Phase	Number of EV Chargers (Level 2)	Number of EV Charging Spaces Served
1	37	74
2	36	70
3	11	22
Total	84	166

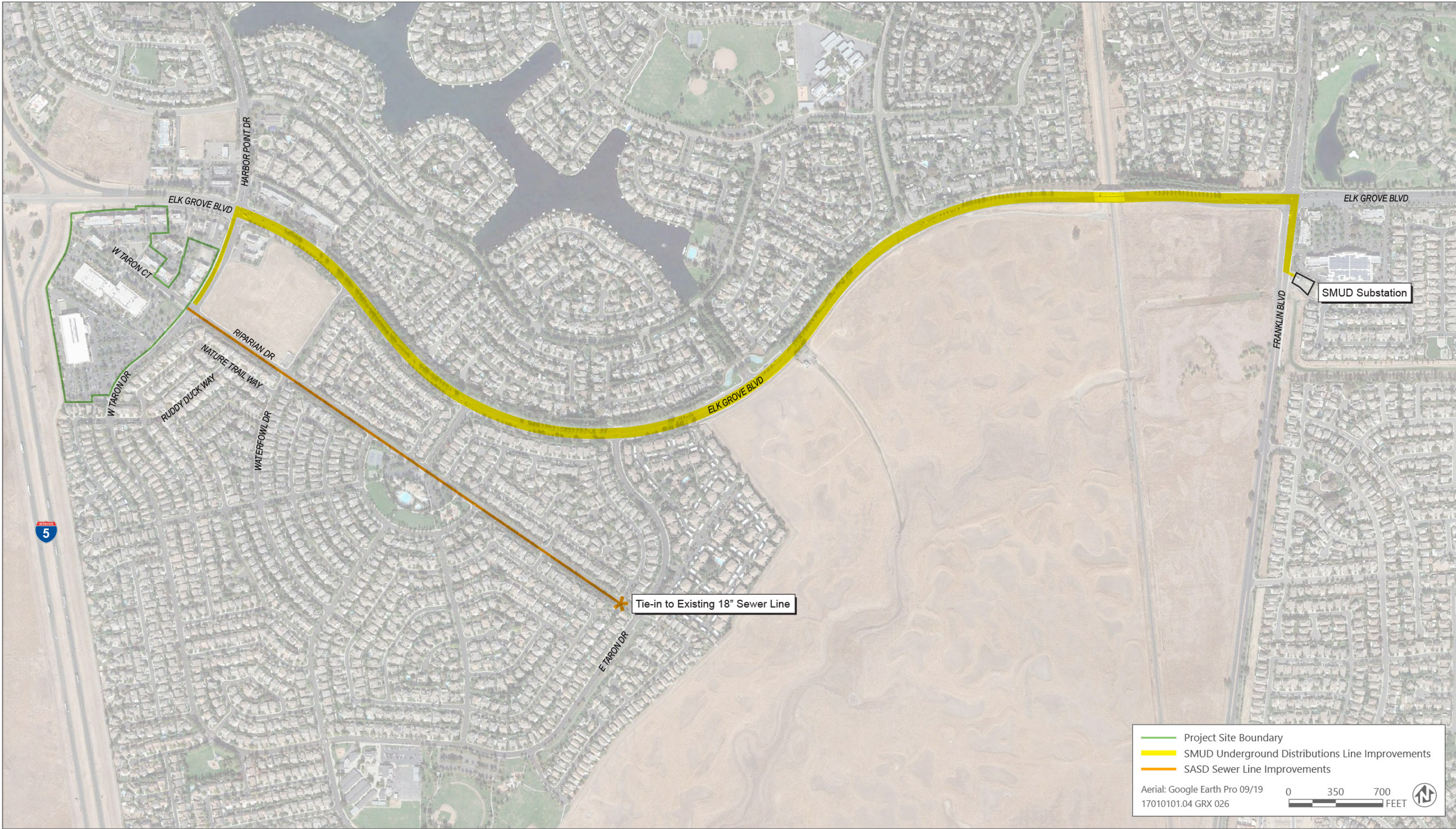


Figure 2-21 Off-Site Infrastructure Improvements

2.5 PROJECT OPERATIONS

The hospital would be designed and equipped to operate as a Level II Trauma Center to accommodate a possible future designation by Sacramento County based on distribution of emergency services and facility capability. A Level II Trauma Center, which can initiate definitive care for all injured patients, includes the following elements:

- ▶ provides 24-hour immediate coverage by general surgeons, as well as coverage by the specialties of orthopedic surgery, neurosurgery, anesthesiology, emergency medicine, radiology, and critical care;
- ▶ provides tertiary care needs, such as cardiac surgery and hemodialysis;
- ▶ provides trauma prevention and continuing education programs for staff; and
- ▶ incorporates a comprehensive quality assessment program.

2.5.1 Project Employment and Visitation

The facilities constructed during each phase of the Project would become operational upon completion and would continue to operate during construction of subsequent phases. Phase 1 would provide jobs for approximately 1,140 permanent hospital employees who would fill a range of jobs, including 420 nursing positions and 180 physician positions. Upon completion of Phase 2, the Project would provide jobs for approximately 2,280 full-time employees, associated with the hospital and related medical services. Upon completion of Phase 3, the Project would support approximately 4,000 jobs that include the 2,280 medical staff, 350 employees associated with the CNU School of Medicine, and approximately 1,370 employees associated with retail and office uses. The Project would also include 300 students living on-site.

The number of visitations to the Project site under existing conditions has been estimated at approximately 3,400 daily visits (Appendix K: Attachment B). At Project buildout, daily visitation (e.g., employees, patients, deliveries, visitors, and students) would consist of approximately 14,700 visits (Appendix K: Attachment B). These estimates include visitation associated with the existing CNU School of Medicine operations. At the end of each school year, there would be a graduation ceremony at the CNU School of Medicine that would temporarily increase the visitation. The maximum approximate number of attendees during graduation ceremonies would be 1,600 people.

2.5.2 Helicopter and Ambulance Trips

The anticipated average number of ambulance and helicopter trips during operation of Phases 1 and 2, and following buildout of Phase 3, are summarized in Table 2-3.

Table 2-3 Number of Anticipated Average Ambulance and Helicopter Trips to the Hospital

Phase	Ambulance Trips per year	Ambulance Trips per week	Helicopter Trips per year	Helicopter Trips per week
1	3,600	69	52	1
2	4,200	81	78	1.5
3	4,200	81	78	1.5

The ambulance bay would be located on the north side of the hospital, adjacent to I-5. Ambulances would access the Project site from the emergency access along Elk Grove Boulevard (see Figures 2-15 and 2-20).

The proposed helicopter landing site on the hospital building would be a helistop. It would serve only to transfer patients and medical staff from one site to another; it would not serve as a permanent base for air ambulance vehicles, and no fueling, service, long-term parking, or storage of helicopters or related equipment would occur at the Project site. The design of the helistop and the flight paths to and from the Project site are regulated by FAA. (See Chapter 4 of the FAA Advisory Circular 150/5390-2B, September 2004.) The proposed helistop would be designed to accommodate aircraft similar to the Airbus H135 helicopter model. Anticipated flight paths are shown in Figure 2-22,

although helicopters may fly alternative routes under certain weather conditions or in the case of a life-threatening emergency. The hospital and helistop would be lighted in accordance with FAA Advisory Circular 70/7460-1L Change 2 (Obstruction Marking and Lighting) and FAA Advisory Circular 150/5390-2C (Heliport Design), Chapter 4 (Hospital Heliports), Section 415 (Heliport Lighting), respectively, including, but not limited to, obstruction lighting, landing pad perimeter lighting, and other related lighting. Helicopters would use typical running lights, which would include red and green right-of-way lights on the sides of the aircraft and a strobe light to indicate the helicopter's position in low-visibility conditions.

2.5.3 City Police Services

The City and CNU propose to enter into an agreement for funding of dedicated City law enforcement services for the Project that would include police presence and on-site patrol to augment CNU security staff. This would consist of the dedication of two police officers to the Project site for a total of 80 hours per week. An additional two police officers may be added at the completion of Phase 2 of the Project based on an evaluation of calls for service during Phase 1. Appendix E includes the proposed agreement.

2.6 PROJECT CONSTRUCTION

The general construction schedule and phasing for the Project, along with a brief description of the construction activities, equipment, materials and services, and workforce associated with Project construction, are presented below. Some construction activities and schedules may change as the Project design is finalized. The reader is referred to Appendix D, regarding construction activity assumptions used for the EIR impact analysis.

Businesses occupying existing buildings proposed for demolition are assumed to continue operations in their current location and then to move to new commercial space created by the Project or other space somewhere within the City.

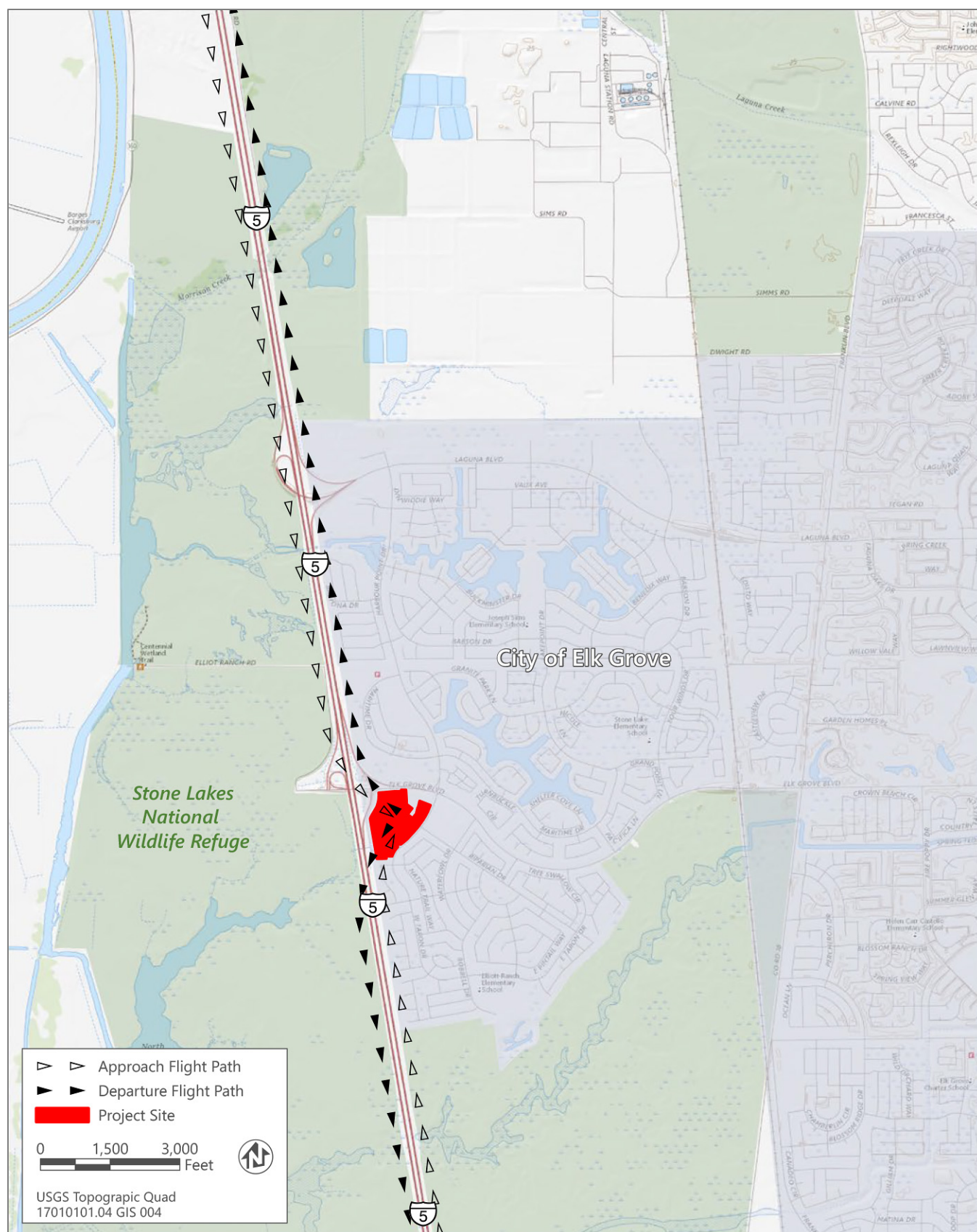
2.6.1 Construction Timing

Construction of all three phases of the proposed Project is assumed to be completed within a period of 9–10 years. Timing of Project site buildout would ultimately be based on economic and market conditions. Construction would generally occur 5 days per week (Monday through Friday), up to 11 hours per day. The sixth and seventh days of the week (Saturday and Sunday) would be used if and as necessary to maintain the Project construction schedule.

The Project may request the ability to conduct construction activities outside of the daytime construction hour limits of 6:00 p.m. and 7:00 a.m. established under Section 6.32.100 of the Municipal Code and the City's Construction Specifications Manual for the following types of construction activities where the nature of the work necessitates that it be continued despite construction hour restrictions:

- ▶ utility work,
- ▶ off-site infrastructure improvements associated with wastewater facilities and potentially electric distribution improvements,
- ▶ construction stocking and loading for next day's shift,
- ▶ overnight hospital building slab concrete pour,
- ▶ other building concrete pours, and
- ▶ excavation and hauling of materials.

Approval of these after-hour construction activities would require the submittal of written request to the City's Development Services Engineering Department, consistent with Section 7-8.02 of the City of Elk Grove Standard Construction Specifications.



Source: Adapted by Ascent Environmental in 2019

Figure 2-22 Approach and Departure Flight Paths for Helistop

City of Elk Grove
California Northstate University Medical Center Project Draft EIR

2.6.2 Construction Activities

This section summarizes the general types of construction activities, workforce, and equipment anticipated for building construction.

CONSTRUCTION STAGING

Equipment and materials would be temporarily staged in existing unused parking lots adjacent to current building sites during construction. All staging areas would be fenced to prevent unlawful entry and protect public safety. Staging areas located on the Project site would also be located so as not to interfere with the circulation of traffic associated with existing uses in operation on or adjacent to the Project site during construction.

DEMOLITION AND SITE PREPARATION

As described above, eight existing buildings would be demolished and removed during Project construction: four during Phase 1, two during Phase 2, and two during Phase 3. These activities, as well as the management and disposal of the wastes from the various construction activities, would be conducted in accordance with established procedures and the applicable regulatory requirements. Metals would be recycled, and nonrecyclable materials would be properly disposed of at suitable landfills. Hazardous materials, if any, would be disposed of at the appropriate Class I or Class II disposal facilities in accordance with hazardous waste regulations. Applicable storm water pollution prevention plan requirements would be implemented throughout demolition activities (City of Elk Grove Municipal Code Title 15, "Water and Sewers," Chapter 15.12, "Stormwater Management and Discharge Control"). Excavation work would be minimized to limit dust emissions. For purposes of the analysis in this EIR, it is assumed that debris would be transported off-site in 20-cubic-yard (cy) haul trucks to a solid waste transfer station within 20 miles of the Project site and disposed of at a permitted facility.

EXCAVATION AND GRADING

Excess soil from grading activities on the Project site would be temporarily stockpiled in on-site staging areas during construction and removed subsequent to completion of final landscaping or transported off-site as it is being generated. Phase 1 would involve excavating approximately 115,500 cy (see Appendix D). Based on review of conceptual plans and building footprints for Phases 2 and 3, the total excavation for buildout of the Project is estimated at approximately 193,600 cy (see Appendix D). Any contaminated soil excavated would be managed in conformance with a regional water quality control board–approved soil management program for disposition. For purposes of the analysis in this EIR, excavated material would be transported off-site in 20-cy haul trucks and disposed of at a permitted facility within 20 miles of the Project site.

BUILDING CONSTRUCTION

All Project buildings and parking structures would be constructed following the same general procedure. First, the foundation would be poured; then the structural frame would be erected. This would be followed by construction of the exterior building enclosure, and then buildout of the interior would be completed.

The proposed structures would consist of a multitude of building materials, including cement, stucco, and stone claddings; glass panels; aluminum and steel beams, poles, and columns; and screens ranging in permeability and made of different materials. No pile-driving or blasting is proposed. In place of piles, the hospital would be constructed with a mat foundation that consists of the use of a large, continuous concrete slab that carries the entire load of the superstructure and spreads it over the whole area beneath the building.

During Project construction, deliveries of materials, such as concrete, structural steel, electrical equipment, and insulation, would be required. Deliveries also would be necessary for additional construction services equipment (e.g., portable toilets, temporary office trailers for construction contractors). Materials generally would be delivered by truck. Assumptions for EIR impact analysis regarding the estimated number of delivery truck trips needed for construction to transport building materials to the Project site are provided in Appendix D. For purposes of the analysis in this EIR, it is assumed that building materials would be transported to the Project site in 20-cy delivery trucks and temporarily stockpiled in on-site staging areas.

CONSTRUCTION WORKFORCE

Over the Project construction period, the Project Applicant would hire construction contractors that are expected to employ a skilled workforce, including cement finishers, ironworkers, pipe fitters, welders, carpenters, electricians, riggers, painters, operators, and laborers. The maximum number of workers assumed in the EIR to be employed during each phase of construction is summarized in Appendix D. The entire construction workforce is anticipated to come from the construction labor pool available in the region (e.g., Sacramento, Placer, El Dorado, Yolo, and San Joaquin Counties). The actual number of construction workers hired would be determined by the selected construction contractor for the Project. Construction workers would park on the Project site within the construction staging area.

CONSTRUCTION EQUIPMENT

The assumed types of construction equipment anticipated to be used during the various construction activities during each phase of construction are listed in Appendix D. The actual types of construction equipment to be used would be determined by the selected construction contractor for the Project.

2.7 PROJECT CERTIFICATION UNDER JOBS AND ECONOMIC IMPROVEMENT THROUGH ENVIRONMENTAL LEADERSHIP ACT

In September 2011, Governor Brown signed the Jobs and Economic Improvement Through Environmental Leadership Act (also known as AB 900), which created PRC Chapter 6.5 under Division 13 of the PRC (CEQA). PRC Chapter 6.5 required the governor to establish procedures for applying for streamlined environmental review under CEQA for projects that meet certain requirements. The Project is considered a leadership project under PRC Section 21180(b)(1) because it meets the following conditions:

A residential, retail, commercial, sports, cultural, entertainment, or recreational use project that is certified as LEED [Leadership in Energy and Environmental Design] gold or better by the United States Green Building Council and, where applicable, that achieves a 15-percent greater standard for transportation efficiency than for comparable projects. These projects must be located on an infill site. For a project that is within a metropolitan planning organization for which a sustainable communities strategy or alternative planning strategy is in effect, the infill project shall be consistent with the general use designation, density, building intensity, and applicable policies specified for the project area in either a sustainable communities strategy or an alternative planning strategy, for which the State Air Resources Board, pursuant to subparagraph (H) of paragraph (2) of subdivision (b) of Section 65080 of the Government Code, has accepted a metropolitan planning organization's determination that the sustainable communities strategy or the alternative planning strategy would, if implemented, achieve the greenhouse gas emission reduction targets.

Applications are required to comply with the Governor's Guidelines for Streamlining Judicial Review under CEQA (Governor's Guidelines), provided on the Governor's Office of Planning and Research website and updated in January 2018 to comply with Senate Bill 734 (2016) and AB 246 (2017).¹ Projects must demonstrate that they satisfy the statutory requirements for CEQA streamlining, as further set forth in the Governor's Guidelines, pursuant to PRC Section 21187 et seq.:

1. Project Land Uses. Information will show the project is residential, retail, commercial, sports, cultural, entertainment, or recreational in nature.
2. LEED Gold Certification. Information will show that the project, upon completion, will qualify for LEED Gold certification or better. The application shall specify those design elements that make the project eligible for LEED Gold certification or better, and the applicant shall submit a binding commitment to delay operating the project until it receives LEED Gold certification or better. If, upon completion of construction, LEED Gold certification or better is delayed as a result of the certification process rather than a project deficiency, the applicant may petition the governor to approve project operation pending completion of the certification process.
3. Transportation Efficiency. Information will show the project will achieve at least 15-percent greater transportation efficiency, as defined in PRC Section 21180(c), than comparable projects. The applicant shall provide information setting forth its basis for determining and evaluating comparable projects and their transportation efficiency, and how the proposed project will achieve at least 15-percent greater transportation efficiency. For residential projects, the applicant shall also submit information demonstrating that the number of vehicle trips by residents divided by the number of residents is 15 percent more efficient than for comparable projects. For the purposes of this provision, "comparable" means a project of the same size, capacity, and location type.
4. Infill Site in an Urbanized Area. Information will show that the project is located on an infill site, as defined by PRC Section 21061.3, and in an urbanized area, as defined by PRC Section 21071.
5. Consistency with Sustainable Communities Strategy. Information required by PRC Section 21180(b)(1) is available for projects within a metropolitan planning organization for which a sustainable communities strategy or alternate planning strategy is in effect. For the purposes of this provision, "in effect" means that the sustainable communities strategy or the alternative planning strategy has been adopted by the metropolitan planning organization, and that the California Air Resources Board has accepted the metropolitan planning organization's determination that the sustainable communities strategy or alternative planning strategy meets the adopted greenhouse gas (GHG) reduction targets and is not the subject of judicial challenge.
6. Multifamily Residential Project. If the project is a multifamily residential project, evidence will show that (1) private vehicle parking spaces are priced and rented or purchased separately from dwelling units or (2) the dwelling units are subject to affordability restrictions that prescribe rent or sale prices, and the cost of parking spaces cannot be unbundled from the cost of dwelling units.
7. Minimum Investment. Information will establish that the project entails a minimum investment of \$100 million in California through the time of completion of construction.
8. Prevailing Wage and Living Wage Commitments. Information will establish that the prevailing and living wage requirements of PRC Section 21183(b) will be satisfied.
9. Greenhouse Gas Analysis. Information will establish that the project will not result in any net additional GHG emissions. This information is subject to a determination signed by the executive officer of the California Air Resources Board that the project does not result in any net additional GHG emissions, following the procedures set forth in Section 6 of the Governor's Guidelines.

¹ Governor's Office of Planning and Research, Governor's Guidelines for Streamlining Judicial Review under the California Environmental Quality Act Pursuant to AB 900 (Chapter 352, Statutes of 2011), available: http://opr.ca.gov/docs/20190412-AB_900_Guidelines-Updated-April-2019.pdf. Accessed September 9, 2019.

10. Waste Recycling. Information will establish that the project will comply with the requirements for commercial and organic waste recycling in Chapters 12.8 (commencing with PRC Section 42649) and 12.9 (commencing with PRC Section 42649.8), as applicable.
11. Commitments Regarding PRC Sections 21183(e), (f), and (g). Information will document a binding agreement between the project proponent and the lead agency establishing the requirements set forth in PRC Section 21183(e) (all mitigation measures will be conditions of approval and enforceable, and environmental mitigation measures will be monitored and enforced for the life of the obligation), Section 21183(f) (applicant will pay costs of the Court of Appeal), and Section 21183(g) (applicant will pay costs of preparing the record of proceedings).

CNU submitted an application for the Project to the governor for certification that was subject to public review from September 24, 2019, through December 30, 2020. On December 17, 2019, the California Air Resources Board issued Executive Order G-19-159, which determined that the Project would not result in any new additional GHG emissions pursuant to PRC Section 21183(c). The governor certified the Project as an eligible project under AB 900 on December 30, 2019, and forwarded this determination to the Joint Legislative Budget Committee for consideration pursuant to PRC Section 21184(b)(2)(B). The Joint Legislative Budget Committee issued a concurrence letter on January 27, 2020. The Project application and supporting materials are provided in Appendix C.

CNU has made commitments to reduce the potential environmental effects of the proposed Project. They were made in support of its certification as an environmental leadership development project by governor as provided under PRC Section 21178. A detailed description of these commitments (e.g., reduction in vehicle trips, LEED Gold certification, and offset of Project GHG emissions) is provided in Appendix C.

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3 ENVIRONMENTAL SETTING, IMPACTS, AND MITIGATION MEASURES

This chapter is organized by environmental resource topic. Each resource topic is addressed in a separate section that presents an integrated discussion of the existing conditions (including environmental setting and regulatory setting) associated with the resource, potential environmental effects of the Project (including direct and indirect impacts) on the resource, and mitigation measures to reduce significant effects.

Cumulative and growth-inducing impacts are discussed in Chapter 4, "Cumulative Impacts," and Chapter 6, "Other CEQA-Mandated Sections," respectively.

APPROACH TO THE ENVIRONMENTAL ANALYSIS

This Draft EIR identifies and focuses on the environmental impacts associated with the CNU Medical Center Project, in accordance with CEQA (PRC Section 21000 et seq.) and the State CEQA Guidelines (CCR Section 15000 et seq.). Sections 3.1 through 3.15 of this Draft EIR present a discussion of regulatory background, existing conditions, environmental impacts associated with construction and operation of the Project, mitigation measures to reduce the level of impact, and the residual level of significance (i.e., after application of mitigation, including impacts that would be significant and unavoidable after application of all feasible mitigation measures). Issues evaluated in these sections consist of the environmental topics identified for review in the NOP prepared for the Project as well as responses received on the NOP (see Appendix A of this Draft EIR). Chapter 4 of this Draft EIR, "Cumulative Impacts," presents an analysis of the Project's impacts considered together with the related impacts of other past, present, and probable future projects, as required by Section 15130 of the State CEQA Guidelines. Chapter 5, "Alternatives," presents a reasonable range of alternatives and evaluates the environmental effects of those alternatives relative to those of the Project, as required by Section 15126.6 of the State CEQA Guidelines. Chapter 6, "Other CEQA-Mandated Sections," includes an analysis of the Project's growth-inducing impacts and significant irreversible environmental effects.

The remainder of this chapter addresses the following resource topics:

- ▶ Section 3.1, "Aesthetics";
- ▶ Section 3.2, "Air Quality";
- ▶ Section 3.3, "Biological Resources";
- ▶ Section 3.4, "Cultural and Tribal Cultural Resources";
- ▶ Section 3.5, "Energy";
- ▶ Section 3.6, "Geology and Soils";
- ▶ Section 3.7, "Greenhouse Gas Emissions and Climate Change";
- ▶ Section 3.8, "Hazards and Hazardous Materials";
- ▶ Section 3.9, "Hydrology and Water Quality";
- ▶ Section 3.10, "Land Use and Planning";
- ▶ Section 3.11, "Noise and Vibration";
- ▶ Section 3.12, "Population, Employment, and Housing";
- ▶ Section 3.13, "Public Services";
- ▶ Section 3.14, "Transportation"; and
- ▶ Section 3.15, "Utilities and Service Systems."

Sections 3.1 through 3.15 of this Draft EIR each include the following components:

- ▶ **Regulatory Setting:** This subsection presents information on the laws, regulations, plans, and policies relevant to each resource topic, including federal, State, regional, and City regulations that address potentially adverse environmental impacts.
- ▶ **Environmental Setting:** This subsection describes existing environmental conditions at the Project site and in the surrounding area, in accordance with the State CEQA Guidelines (CCR Section 15125). This setting generally serves as the baseline against which environmental impacts are evaluated. The NOP for the Project was issued on May 29, 2019. Typically, and in accordance with State CEQA Guidelines Section 15125, the date on which the NOP is issued is considered appropriate for establishing the baseline.
- ▶ **Impacts and Mitigation Measures:** In accordance with the State CEQA Guidelines (CCR Sections 15126, 15126.2, and 15143), this section identifies the method of analysis to determine whether an impact may occur, and the thresholds of significance used to determine the level of significance of the environmental impacts for each resource topic. The thresholds of significance are based on the checklist presented in Appendix G of the most recently adopted State CEQA Guidelines (December 28, 2018), best available data, applicable regulatory standards, and local practice and standards. The level of each impact is determined by analyzing the effect of the Project on the defined baseline conditions and comparing it to the applicable significance threshold.

Project impacts and mitigation measures are numbered sequentially in each subsection (e.g., Impact 3.2-1, Impact 3.2-2, Impact 3.2-3, etc.). A summary impact statement precedes a more detailed discussion of each environmental impact. The discussion presents the analysis, rationale, and substantial evidence upon which conclusions are drawn regarding the level of significance of the impact.

An impact would be considered “less than significant” if it would not involve a substantial adverse change in the physical environment. An impact would be “potentially significant” or “significant” if it could or clearly would, respectively, result in a substantial adverse change in the physical environment; both are treated the same under CEQA in terms of procedural requirements and the need to identify feasible mitigation.

This EIR identifies feasible mitigation measures that could avoid, minimize, rectify, reduce, or compensate for potentially significant or significant adverse impacts (PRC Section 21081.6[b]). Mitigation measures are not required for effects found to be less than significant. Where feasible mitigation for a significant or potentially significant impact is available, it is described in this EIR following the impact, along with its effectiveness at addressing the impact. Each identified mitigation measure is labeled numerically to correspond with the impact it addresses. Where feasible mitigation is not sufficient to reduce an impact to a less-than-significant level, the impact is identified as significant and unavoidable. The final determination of the level of significance of each impact is presented in bold text in the impact summary and at the end of each impact discussion.

It is important to note that environmental impact analyses under CEQA generally are not required to analyze the impact of existing environmental conditions on a project’s future users or residents unless the proposed project might cause or risk exacerbating environmental hazards or conditions that already exist (CCR Section 15126.2[a]). In those specific instances, it is the project’s impact on the environment and not the environment’s impact on the project that compels an evaluation of how future residents or users could be affected by exacerbated conditions (*California Building Industry Association v. Bay Area Air Quality Management District* [2015] 62 Cal. 4th 369).

The full references associated with the sources cited in Sections 3.1 through 3.15 are presented in Chapter 8, “References,” organized by section number.

EFFECTS FOUND NOT TO BE SIGNIFICANT

CEQA allows a lead agency to limit the detail of discussion of environmental effects that are not potentially significant (PRC Section 21100, CCR Section 15128). Following research and analysis of technical studies and data, it was determined that the Project would not result in significant environmental impacts on the resources identified below. Accordingly, these resources are not addressed in later sections of this Draft EIR.

Agriculture and Forestry Resources

As described in Chapter 2, "Project Description," the Project site and the areas identified for off-site improvements are located in developed areas of the City that do not include any agricultural uses, forestlands, or timberland resources. As shown in Figures 5.2-1 and 5.2-2 of the City of Elk Grove General Plan Update Draft EIR, there are no designated Important Farmland or Williamson Act–contracted sites located on or adjacent to the Project site or in the areas identified for off-site improvements (City of Elk Grove 2018). Therefore, the Project would not result in direct or indirect conversion of any farmland or timberland. Thus, no impacts on agriculture or forestry resources would occur.

Mineral Resources

As described in Chapter 2, "Project Description," the Project site and the areas identified for off-site improvements are located in developed areas that are not used for mineral extraction activities. Mineral resource mapping maintained by the California Department of Conservation does not designate the Project site or the surrounding area as an area of significant mineral deposits (California Department of Conservation 1999). Thus, no impacts on mineral resources would occur.

Wind Hazards

Tall buildings are known to change wind conditions and can generate increased wind (also known as downward-traveling winds) at ground level and on terraces or balconies (Irwin et al. 2008). These winds can present hazards to pedestrians. While the proposed hospital building height could present potential wind hazards to pedestrians, the hospital building design includes architectural features along the building face surfaces (e.g., window ledges and shade features) as well as a building pedestal base for the towers that would intercept and slow downward-traveling winds and prevent high-velocity wind hazards to pedestrians. Thus, no wind hazard impacts are expected to occur.

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3.1 AESTHETICS

This section provides a description of the existing visual conditions of the Project site and surrounding area and an assessment of changes to those conditions that would occur from Project implementation. The effects of the Project on the visual environment are generally defined in terms of the Project's physical characteristics and potential visibility, the extent to which the Project's presence would change the perceived visual character and quality of the environment, and the expected level of sensitivity that the viewing public may have where the Project would alter existing views.

Comments were received from residents in response to the NOP. Commenters noted that the Draft EIR should address Project consistency with City General Plan policies regarding aesthetics, including building height. Commenters also noted the need for architectural renderings of the completed Project and the need for the Draft EIR to discuss building setbacks, landscaping, and signage and to address potential effects of glare and reflections created by exterior glazing materials, lighting effects on nearby residences, and visual effects of the Project on nearby properties, including residential developments and the Stone Lakes National Wildlife Refuge (NWR). In addition, commenters noted the need to address cumulative impacts. These issues are considered below and in Chapter 4, "Cumulative Impacts."

3.1.1 Regulatory Setting

FEDERAL

Federal Aviation Administration

Structures that may present obstructions affecting navigable air space are required to have markings and lighting as provided under the Federal Aviation Administration's (FAA's) Advisory Circular 70/7460-1L Change 2 (Obstruction Marking and Lighting). The FAA has determined that the Project would not be a hazard to air navigation provided that the hospital building is marked/lighted in accordance with Chapters 4 (Light Guideline), 8 (Dual Lighting with Red/Medium-Intensity Flashing White Light Systems), and 12 (Marking and Lighting Equipment and Information) of this Advisory Circular (Sanders 2020). These chapters identify the following:

- ▶ type of lighting to be used (aviation red obstruction lights [flashing and/or steady burn during nighttime] and medium-intensity flashing white obstruction lighting during daytime and twilight) on the structure;
- ▶ provision of obstruction lighting (two or more) during construction to be placed on the structure at each level at which permanent obstruction lighting would be recommended; construction equipment lighting should be provided according to the standards as they apply to permanent structures;
- ▶ control device for the lighting system that changes the light intensity when ambient light conditions change (twilight to night and night to day); and
- ▶ structure markings using approved colors (international aviation orange, white, and yellow).

Lighting for hospital heliports is regulated under the FAA's Advisory Circular 150/5390-2C (Heliport Design), Chapter 4 (Hospital Heliports), Section 415 (Heliport Lighting), which provides standards for perimeter lighting, taxiways, and beacons. These standards address the use of green lighting to identify the touchdown and liftoff area (TLOF), final approach and takeoff area (FATO), and flight path alignments. They state that beacons for heliports use a white, green, or yellow light that flashes 30–45 times a minute (Federal Aviation Administration 2012).

STATE

State Outdoor Advertising Regulations

I-5 along the Project site's western boundary is classified as a "Landscaped Freeway" as provided under Sections 2500–2513 of the State Outdoor Advertising Regulations. These provisions regulate outdoor advertising along highway facilities. Outdoor advertising along landscaped freeways under Government Code Sections 5440 through 5443.5.

LOCAL

City of Elk Grove General Plan

The *City of Elk Grove General Plan* contains the following policies and actions related to aesthetics that apply to the Project. These policies are contained in Chapter 4, "Urban and Rural Development" (City of Elk Grove 2019).

- ▶ **Policy LU-5-1:** Ensure that new development reflects the City's desire to create a high-quality, attractive, functional, and efficient built environment.
- ▶ **Policy LU-5-2:** Provide and implement regulations that encourage high-quality signage, ensure that businesses and organizations can effectively communicate through sign displays, promote wayfinding, achieve visually vibrant streetscapes, and control excessive visual clutter.
- ▶ **Policy LU-5-3:** Reduce the unsightly appearance of overhead and aboveground utilities by requiring the undergrounding of appropriate services within the urban areas of the City.
 - **Standard LU-5-3a:** New utility facilities should be located underground to the extent possible. Facilities to be placed underground should include electrical transformers (where consistent with the guidelines of the electrical utility), water backflow preventers, and similar items.
 - **Standard LU-5-3.b:** Require that existing overhead utility facilities be undergrounded as a condition of project approval. This shall include electrical service lines under 69kV. Electrical service lines of 69kV and higher are encouraged to be undergrounded.
- ▶ **Policy LU-5-4:** Require high standards of architectural and site design, and apply strong design controls for all development projects, both public and private, for the enhancement and development of community character and for the proper transition between areas with different types of land uses. Design standards shall address new construction and the reuse and remodeling of existing buildings.
 - **Standard LU-5-4.a:** Nonglare glass shall be used in all nonresidential buildings to minimize and reduce impacts from glare. Buildings that are allowed to use semi-reflective glass must be oriented so that the reflection of sunlight is minimized. This requirement shall be included in subsequent development applications.
- ▶ **Policy LU-5-5:** Improve the visual appearance of business areas and districts by applying high standards for architectural design, landscaping, and signs for new development and the reuse or remodeling of existing buildings.
- ▶ **Policy LU-5-6:** When resources are available, seek to enliven the public right-of-way with attractive landscaping, public art, lighting, civic landmarks, sidewalk cafés, gateways, water features, interpretive/wayfinding signage, farmers markets, festivals, outdoor entertainment, pocket parks, street furniture, plazas, squares, or other amenities in spaces for public use.
- ▶ **Policy LU-5-7:** Encourage incorporation of publicly accessible spaces, such as plazas or squares, into new commercial and mixed-use developments.
- ▶ **Policy LU-5-8:** Require developers to provide pedestrian amenities, such as trees, lighting, recycling and refuse containers, seating, awnings, and/or art, in pedestrian areas along project frontages. Where appropriate, install pedestrian amenities in public rights-of-way.
- ▶ **Policy LU-5-9:** Emphasize placemaking design principles in new development projects.
 - **Standard LU-5-9a:** Prioritize the pedestrian by implementing the following measures:
 - Minimize parking areas and curb cuts along commercial street frontages.
 - Encourage a vertical and horizontal mix of land uses.
 - Provide urban plazas and gathering spaces in commercial and multifamily development.
 - Provide pedestrian amenities such as lighting, landscaping, and benches.

The *City of Elk Grove General Plan* does not contain any policies related to shadow effects.

City of Elk Grove Municipal Code

The Elk Grove Municipal Code provides regulations imposed by the City on development and business activities in the City. Title 23 of the Municipal Code (the Zoning Code) contains development standards and permit requirements that address building mass and setbacks (Chapter 23.29), landscaping (Chapter 23.54), lighting (Chapter 23.56), and signage (Chapter 23.62 and Section 23.16.027).

Chapter 23.29: Development Standards

The maximum floor area ratio (FAR) for the Business and Professional Office (BP) zone proposed by the Project is 2.0. FAR is the measurement of a building's floor area in relation to the size of the lot/parcel on which the building is located. FAR is expressed as a decimal number and is derived by dividing the total area of the building by the total area of the parcel (building area ÷ lot area). In this case, the FAR of 2.0 would allow floor area twice the total area of the parcel.

Setbacks required under this section are 25 feet from street frontages, 10 feet for side interior lots, and 10 feet for rear lot setbacks. No additional setback requirements are provided when directly adjacent to residential and open space zones.

The maximum building height in the BP zone is limited to 60 feet under this chapter; however, as part of design review, maximum height can be increased contingent upon the compatibility with surrounding context and character of the project site. Table 23.29-1 notes that in allowing increases in maximum height, the intensity of the development shall be consistent with the General Plan and on-site improvements, including but not limited to architectural articulation, quality, and materials and landscaping, are provided to ensure, as determined by the approval authority, compatibility with the surrounding context and character of the project site.

General Commercial (GC) zone has a maximum FAR of 1.0. Setbacks required are 25 feet for front yards and no setbacks for interior side (except adjacent to residential which is 25 feet), no setback for rear yards. The maximum building height in the GC zone is 40 feet; however, as part of design review, maximum height can also be increased contingent upon the compatibility with surrounding context and character of the project site.

Chapter 23.54: Landscaping

The Municipal Code Title 23 requires landscaping to be provided for all development types in setbacks, unused areas, and parking areas. Minimum landscape area requirements are established by zoning district. For the BP district, a minimum of 15 percent of the net lot area must be maintained with a pervious surface, preferably landscape planting. Specific standards are provided for parking lot landscaping and shade requirements and for overall landscape design.

Chapter 23.56: Lighting

This chapter addresses multifamily and nonresidential outdoor lighting standards. Full shielding is required for outdoor lighting to be constructed. Where the light source from an outdoor light fixture is visible beyond the property line, shielding is required to reduce glare so that the light source is not visible from within any residential dwelling unit.

Section 23.56.030 specifically provides standards for the level of illumination and requires preparation of a point-by-point photometric calculation listing the number, type, height, and level of illumination of all outdoor lighting fixtures in conjunction with the development permit application and before issuance of a building permit or site improvement plans to ensure compliance with the provisions of this chapter. The maximum height of freestanding outdoor light fixtures for development abutting residential, agricultural-residential, and agricultural property is limited to 20 feet. Otherwise, the maximum height for freestanding outdoor light fixtures is 30 feet.

Section 23.56.040 prohibits certain types of lighting, such as neon tubing or band lighting along building structures, searchlights, illumination of entire buildings, roof-mounted lights (except for security purposes with motion detection), and any light that interferes with a traffic signal or other necessary safety or emergency light.

Chapter 23.62: Signs on Private Property

Section 23.62.130 addresses permitted signs by type and development characteristics. Signs are regulated by sign and development type and/or zoning district. Section 23.62.070 addresses permits, as well as entitlements required for signs. A sign permit is required for all permanent signs (attached to a building or freestanding) before their erection,

relocation, alteration, or replacement. Under Section 23.62.100, certain types of signs are prohibited, including animated, moving, flashing, blinking (intermittent light), fluctuating, reflecting, revolving, or other, similar signs; pole signs; electronic reader board signs other than time/temperature signs; and roof signs erected and constructed on or over the roofline of a building and supported by the roof structure. Exceptions are possible in some cases.

Chapter 23.16.027: Uniform Sign Program

There are two types of uniform sign programs: major and minor. Both programs provide a process for the City's review of and decisions related to requests for signs for multitenant projects. The intent of the uniform sign programs is to allow for the integration of a project's signs with the design of the structures involved to achieve a unified architectural statement and to approve common sign regulations for multitenant projects. A uniform sign program (either major or minor) is required for all new multitenant shopping centers, office parks, and other multitenant, mixed-use, or otherwise integrated developments of three or more separate tenants/uses that share buildings, public spaces, landscape, and/or parking facilities. The differences between the programs are as follows:

- ▶ A minor uniform sign program does not allow for deviations from the signage standards.
- ▶ A major uniform sign program provides a process for the application of sign regulations in ways that will allow creatively designed signs that make a positive visual contribution to the overall image of the City, while mitigating the impacts of large or unusually designed signs, and it allows for the installation of signs larger, taller, and/or more numerous than are otherwise permitted.

City of Elk Grove Design Guidelines

In 2003, the City Council adopted amendments to the City's Municipal Code, establishing a design review process for new development and redevelopment of properties. This process is enumerated in Municipal Code Section 23.16.080, Design Review, and has been updated as recently as 2019. Adoption of the design review process was accompanied by adoption of the corresponding Elk Grove Design Guidelines (City of Elk Grove 2003). Section 23.16.080 establishes an expanded design review process for all development Citywide, requiring additional site and design consideration beyond conformance with minimum standards of the Zoning Code.

The Design Guidelines include design provisions for site planning, architecture, lighting, and landscaping, as well as provisions regarding the preservation of natural features. They encourage the use of landscaping to reduce potential impacts of lighting from parking areas on both the project area and adjacent vacant land. In addition, the guidelines specify that perimeter landscaping must be designed to maximize screening and buffering between adjacent uses. Supplemental guidelines have been established for the Laguna Ridge area, and other guidelines or protocols have been established for the Southeast Policy Area and the Old Town area; however, the Project site is not located in these areas.

Chapter 5A of the Design Guidelines addresses site planning for nonresidential development. These site planning guidelines are based on the following design concepts (City of Elk Grove 2003):

- a) Ensure that new development contributes to the character of a community by providing opportunities for integration of the project with the adjacent properties, neighborhood and City. The design of new development should pay particular attention to design compatibility between non-residential and adjacent residential use/property and the predominant characteristics of non-residential corridors.
- b) Encourage projects to have a unified design theme and discourage the use of corporate architecture that is not compatible with the established design theme.
- c) Design projects to be pedestrian friendly. As appropriate, incorporate pedestrian and outdoor gathering places into the project design with consideration given to the climate and planned use of space.
- d) Ensure that new development establishes a streetscape appearance that defines the pedestrian and vehicle corridor and presents an appealing and continuous theme along a sidewalk or street.
- e) Design parking lots with smaller parking fields and parking dispersed throughout the development. This will avoid the visual and functional detriment associated with a single sea of parking along a non-residential street frontage.

- f) Provide design flexibility for mixed-use development that ensures compatibility of use types and promotes beneficial relationships among uses.

Chapter 5B of the Design Guidelines addresses architecture for nonresidential development. These architecture guidelines are based on the following design concepts (City of Elk Grove 2003):

- a) Promote high quality building designs that consist of durable and maintainable materials and that provide visual interest and diversity to the community.
- b) Ensure building design achieves human scale and interest.
- c) Ensure the design of proposed buildings or structures is sensitive to the neighborhood character with regard to scale, architectural style, use of materials and bulk.

3.1.2 Environmental Setting

The following descriptions of the Project site and surrounding area refer to photographs taken in 2019. The locations from which the photographs were taken are shown in Figure 3.1-1.

VISUAL CHARACTER OF THE PROJECT SITE

Project Site

Figure 3.1-2, which shows Viewpoint 1, provides an interior view of the Project site that shows existing commercial and retail development (Buildings 8, 10, and 11) and surrounding landscaping at the west end of West Taron Court. Figure 3.1-3, which shows Viewpoint 2, provides a view of the Project site that shows the commercial and retail development (Buildings 10, 11, 12) as seen from the north side of Elk Grove Boulevard. Figure 3.1-4 shows the two-story School of Medicine building on the southern portion of the site (Building 1).

The Project site comprises 24.4 acres of level terrain bordered by Elk Grove Boulevard to the north, I-5 to the west, West Taron Drive to the east, and the Laguna Stone Lake subdivision to the south. Except for two vacant parcels, the Project site is developed with retail and office buildings surrounded by landscaped and paved parking lots. Nine structures are currently on the site. The largest two structures are located on the southern portion of the site: the 109,300-square-foot (sq. ft.), two-story School of Medicine at 9700 West Taron Drive and the 75,000 sq. ft., single-story office building at 9650 West Taron Drive. These buildings are unornamented, rectangular, flat-roofed structures with light gray and tan exteriors and regularly spaced rectangular windows.

The remaining seven single-story structures are located on the northern side of the site. These structures are occupied primarily by commercial retail uses, including small restaurants, a brewery, and an animal hospital. These structures are unornamented, rectangular, and flat-roofed with stucco finish and light brown, tan, gray-blue, or red-brown color schemes. The front of each structure generally has large windows typical of retail/commercial buildings.

Landscaping consists of shade and street trees in the parking lots and along street frontages; hedges and understory plantings are installed along the street frontages and at the ends of parking rows.

There are 507 trees within the Project site. This count does not include trees outside of the Project site boundaries located northeast of the site and adjacent to the businesses on the southwest corner of Elk Grove Boulevard and West Taron Drive.



Source: Adapted by Ascent Environmental in 2019

Figure 3.1-1 Locations of Photographic Viewpoints



Source: Photograph taken by Ascent Environmental in 2019

Figure 3.1-2 Viewpoint 1: Project Site Buildings 8, 10, and 11 as Viewed from Building 9 at West End of West Taron Court



Source: Photograph taken by Ascent Environmental in 2019

Figure 3.1-3 Viewpoint 2: Project Site Buildings 10, 11, and 12 as Viewed from the North Side of Elk Grove Boulevard



Source: Photograph taken by Ascent Environmental in 2019

Figure 3.1-4 Viewpoint 3: Building 1 (Two-Story School of Medicine) as Viewed from the Parking Lot at the Southern End of the Project Site

The existing buildings on the northern portion of the Project site have form, color, and mass consistent with other retail developments along Elk Grove Boulevard north and east of the Project site. The two structures on the southern portion of the site are larger than the retail structures on the northern portion of the site and stand out from the smaller commercial buildings. However, the presence of trees in the parking lots serves to reduce the dominance of these structures on the site. Overall, the visual character of the site is consistent with commercial, retail, and office development in the City.

VISUAL CHARACTER OF THE SURROUNDING AREA

The visual character of the area surrounding the Project site is dominated by one- and two-story retail and commercial development with landscaped parking lots and single-family residential neighborhoods. Gas stations are located on three corners of the intersection of Elk Grove Boulevard and West Taron Drive. Vacant lands are located east of the Project site along West Taron Drive and Riparian Drive and on the north side of Elk Grove Boulevard as shown in Figure 3.1-5. Commercial and retail developments, similar in appearance to the existing development on the Project site, are also located on the north side of Elk Grove Boulevard east and west of Harbour Point Drive as shown in Figure 3.1-6. Parking lots serving the office and retail developments are landscaped with numerous trees and low hedges, and the adjacent streets are lined with trees.

Residential neighborhoods with single-family houses are located north, south, and east of the Project site. The houses in these neighborhoods have similar architectural styles with light-colored stucco exteriors and similar roofing materials as shown in Figure 3.1-7.

The I-5 corridor serves as the Project site's western boundary, and the site is separated from I-5 and the northbound I-5 off-ramp to Elk Grove Boulevard by a portion of a wall that ends at the northern end of the CNU Medical College and Pharmacy College building. An access road and drainage canal with adjacent open land occupy the area between the wall and I-5; open lands in the NWR extend west from I-5.



Source: Photograph taken by Ascent Environmental in 2019

Figure 3.1-5 Viewpoint 4: Viewpoint of Project Site from Maritime Drive, North of the Project Site



Source: Photograph taken by Ascent Environmental in 2019

Figure 3.1-6 Viewpoint 5: Commercial Development Located North of the Project Site on the North Side of Elk Grove Boulevard



Source: Photograph taken by Ascent Environmental in 2019

Figure 3.1-7 Viewpoint 6: Single-Family Residential Development at the Corner of West Taron Drive and Ruddy Duck Way

The NWR is located within 500 feet of the Project site. The NWR is visited by the public for birdwatching, canoeing and kayaking, educational activities, guided tours, and hunting. It consists of extensive open views of grasslands, wetland features, and distant views of riparian habitat conditions along the Sacramento River. The Sacramento County Open Space Element identifies the Stone Lakes area as a high-quality natural area that provides opportunities for passive recreation (Sacramento County 2017:19). Facilities used by NWR visitors near the Project site (approximately 1.20 miles to the west) include the Lewis Trail Viewing Platform and floating dock located along the Sacramento River for canoe and kayak use.

Although the Project site and surrounding urban area do not provide memorable views with distinctive or vivid features, the site and surrounding development have visual unity and intactness in that buildings are generally one or two stories tall with similar building mass, exterior treatments, and architectural styles. Mature landscaping serves to reduce the visual dominance of the commercial and residential structures and the parking lots.

IEWS OF THE PROJECT SITE

Public Views of the Project Site from Adjacent Streets and Highways

The Project site is visible from I-5, most prominently for northbound travelers and for travelers on the northbound off-ramp onto Elk Grove Boulevard. The existing two-story building is prominent in these views. Views of the Project site from southbound I-5 are more peripheral and are partially blocked by the Elk Grove Boulevard/I-5 interchange structure. Open views of the site are limited by a wall along the Project site's western boundary.

The Project site is visible from eastbound Elk Grove Boulevard from the overcrossing structure of I-5 to the West Taron Drive intersection. Views from westbound Elk Grove Boulevard are limited by buildings and landscaping along Elk Grove Boulevard between Waterfowl Drive and West Taron Drive. The single-story retail buildings on the north side of the Project site are prominent along Elk Grove Boulevard (Figures 3.1-3 and 3.1-5).

The Project site is visible from West Taron Drive; however, buildings are not prominent in views of the southern portion of the site because of the screening provided by parking lot landscaping (Figure 3.1-8). Buildings on the northern portion of the site are more prominent from public views along West Taron Drive. The interior of the Project site is visible from West Taron Court. Commercial and retail structures are prominent in the views, but these structures are partially screened by landscaping (Figure 3.1-2).

The Project site is also visible from Riparian Drive (Figure 3.1-9).



Source: Photograph taken by Ascent Environmental in 2019

Figure 3.1-8 Viewpoint 7: View of Project Site from West Taron Drive Near Ruddy Duck Way



Source: Photograph taken by Ascent Environmental in 2019

Figure 3.1-9 Viewpoint 8: View of Project Site from Westbound Riparian Drive Near Waterfowl Drive

Views of the Project Site from Adjacent Properties

Private Residential Views

The Project site is visible from residential neighborhoods south and east of the site. Most residences in these areas do not face the Project site and have private backyard views. The Project site is partially screened by landscaping, walls, and street trees from these views. Residences that are adjacent to the site or that back onto the adjacent streets also have private views of the site from second-story windows.

Views from Stone Lakes National Wildlife Refuge

There are views of the Project site from NWR roadways as well as user views from the Lewis Trail Viewing Platform and floating dock for canoe and kayak use areas that are located near the Sacramento River approximately 1 mile northwest of the Project site. Views of the Project site from these roadways are partially obscured by a wall and landscaping along the western boundary of the site.

LIGHT AND GLARE CONDITIONS

Existing sources of light and glare are uniformly present east of I-5. Existing sources of light on the Project site and the surrounding area include streetlights along local roadways and I-5, vehicle lights along roadways and I-5, lights in parking lots, exterior building lighting, and interior lights within buildings. Existing structures on the Project site and surrounding area do not have extensive glass or metal exteriors that create substantial glare conditions. Project site parking lot and perimeter landscaping also serves to reduce glare and nighttime lighting.

The NWR contains no existing sources of nighttime lighting or glare.

SHADOWS

The angle of the sun, and hence the character of shadows, varies depending on the time of year and the time of day. In the northern hemisphere, the sun arcs across the southern portion of the sky. During winter, the sun is lower in the southern sky, casting longer shadows compared to other times of year. During the summer months, the sun is higher in the southern sky, resulting in shorter shadows. During all seasons, as the sun rises in the east in the morning, shadows are cast to the west; at midday, the sun is at its highest point and shadows are their shortest and cast to the north; and as the sun sets in the west in the afternoon/evening, shadows are cast to the east. Because of the climate in the region, midday and afternoon shade in summer can be beneficial. In winter, access to sunlight can be beneficial.

3.1.3 Impacts and Mitigation Measures

METHODOLOGY

The analysis of aesthetics is qualitative. This impact analysis evaluates changes to the existing visual character of public views of the Project site described in Section 3.1.2, "Environmental Setting," from Project construction activities and development and operation of the site. It involved review of visual simulations of the proposed hospital building, shadow analysis, proposed massing of other Project buildings, and Project lighting plans. It also involved an evaluation of consistency with the City of Elk Grove General Plan, the Design Guidelines, and the Zoning Code standards identified in Section 3.1.1, "Regulatory Setting," that are intended to address visual quality and design compatibility with the surrounding area and City. This information, in combination with the thresholds below, was used to determine whether implementing the Project may create adverse visual effects.

THRESHOLDS OF SIGNIFICANCE

An impact on aesthetics, light, and glare would be significant if implementation of the Project 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 public views of the site and its surroundings and/or conflict with applicable zoning and other regulations governing site design and architecture; or
- ▶ create a new source of substantial light or glare that would adversely affect day or nighttime views in the area.

ISSUES NOT DISCUSSED FURTHER

A scenic vista is considered a view of an area that has remarkable scenery or a natural or cultural resource that is indigenous to the area. The Project site is in a developed urban setting that does not contain remarkable scenery, views of natural areas, or built features that would be considered part of a scenic vista. There are no designated scenic vistas in the surrounding area. Therefore, this topic is not addressed further in this Draft EIR.

No scenic highways designated by the California Department of Transportation are located near the Project site (California Department of Transportation 2020); therefore, the Project would have no impact on scenic resources in a designated scenic highway. This topic is not addressed further in this Draft EIR.

ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Impact 3.1-1: Substantially Degrade the Existing Visual Character

Construction activities would temporarily degrade the visual character of the Project site, as viewed from public views, as a result of construction staging, use of heavy equipment (e.g., cranes to construct the hospital building), and demolition activities. Although the Project site and surrounding area consist of urban land uses, Phase 1 and buildout of the Project would introduce new buildings that would substantially increase building heights and massing at the western edge of the City. The impact on visual character would be **significant and unavoidable** during both construction and operation of the Project.

As discussed in Section 3.1.2, "Environmental Setting," the visual character of the Project site and the surrounding area consists of developed urban conditions dominated by one- and two-story detached retail and commercial development with landscaped parking lots and single-family residential neighborhoods (see Figures 3.1-6 and 3.1-7). It also consists of natural open space conditions (grasslands, wetland features, riparian habitat) associated with the NWR west and south of the Project site. The Project site currently contains developed office and commercial uses (see Figures 3.1-2 through 3.1-5). As further discussed below, Project construction and establishment of a new medical center campus would result in a noticeable change in the visual character of the Project area through building massing and height.

Construction Activities

As described in Chapter 2, "Project Description," construction activities on the 24.4-acre Project site would be staged in three phases over approximately 10 years. Construction activities on the Project site would include construction equipment staging, building and pavement demolition, site preparation, excavation, tree removal, grading, and building construction that would be publicly visible from West Taron Drive, Riparian Drive, Elk Grove Boulevard, I-5, and the NWR. Construction equipment and materials would be temporarily staged on-site during each phase of site development. All staging and construction areas would be fenced for security and safety reasons. Materials from demolition activities and grading would be transported off-site for disposal. Soil excavated during grading activities on the Project site would be temporarily stockpiled in on-site staging areas during construction and removed

subsequent to completion of final landscaping or transported off-site as it is being generated. Construction equipment would include backhoes, excavators, loaders, tractors, dozers, and other heavy equipment for excavation, grading, and paving, as well as cranes for the structural framing portion of the construction process. A tower crane would likely be used for hospital building construction during Phases 1 and 2 and would be highly visible because such cranes can reach a height of approximately 265 feet (the hospital building would be approximately 261 feet tall). The tower crane would be the tallest feature in the Project area and the City during construction. Thus, on-site Project construction activities would result in temporary but substantial alteration of the visual character of Project area.

Construction activities would also include off-site improvements associated with the construction of the left-turn lane for emergency vehicles on Elk Grove Boulevard, electrical distribution facility improvements along the Elk Grove Boulevard and Franklin Road corridors, wastewater pipeline improvements along Riparian Drive, and the implementation of roadway improvements required for compliance with General Plan Policy MOB 1-3. These construction activities would result in short-term partial roadway lane closures and the use of backhoes, haul trucks, and other construction equipment. Construction of the left-turn lane would result in median landscape and tree removal. Roadway lanes are anticipated to be reopened at the end of each construction day; construction equipment and materials are not expected to be stored in the roadway. Construction disturbance would be localized and would move as portions of these linear improvements are completed.

Developed Conditions

The proposed CNU Medical Center Project would expand the existing developed conditions of the site from 243,837 sq. ft. of one- and two-story buildings to approximately 1,800,000 sq. ft. with building heights ranging between two stories and 13 stories (approximately 261 feet). Phase 1 would consist of developing the 261-foot-tall hospital building. This building would be the tallest building in the City and would be a new, visually prominent feature in a Project area currently limited to one- and two-story commercial and residential buildings and at the western boundary of the City. Figure 3.1-10 shows the locations of the viewing angles for the simulated views of the completed Project that are depicted in Figures 3.1-11 through 3.1-15. These simulations are views of the hospital building from public views along Elk Grove Boulevard, West Taron Drive, Ruddy Duck Way, Riparian Drive, and I-5. Although the proposed architectural design of the hospital building would soften its appearance, the building's mass and height would substantially alter the visual character of the Project area as viewed from these roadways, as well as from the NWR, and may negatively alter recreational experiences. The proposed hospital building would also alter the visual character at night through the illumination of the building's windows, building lighting for air navigation safety, and the helicopter landing site. The reader is referred to the discussion of Impact 3.1-3 for further analysis of building illumination. While the proposed hospital building would be the tallest building in the City, there are two planned tall buildings within the City (planned Wilton Rancheria Casino Resort (12-story and 302 room hotel) and the planned Dignity Health Hospital (6-story and 303-bed hospital)).

Upon buildout (completion of Phases 2 and 3), the Project site would include additional buildings that would range from one to five stories in height (approximately 30–80 feet in height¹) (see Figure 2-6), as well as modification and expansion of on-site signage along I-5, Elk Grove Boulevard, and West Taron Drive. The building massing and height would appear as a substantial alteration to the existing visual character of the Project area and the western boundary of the City based on a comparison of Figure 2-6 with the existing site conditions shown in Figures 3.1-2 through 3.1-5. As identified in Chapter 2, "Project Description," implementing the Project would also alter the existing freestanding and building signage of the site. Project landscaping would assist in softening the appearance of the Project (Figure 2-18).

¹ This estimation of building height assumes 15 feet of height for each story and five additional feet for mechanical equipment and/or architectural features.



Source: Fong & Chan Architects 2020a

Figure 3.1-10 Simulation Viewpoints



Source: Simulation provided by Fong & Chan Architects 2020a

Figure 3.1-11 Simulation of Hospital Building from Westbound Elk Grove Boulevard



Source: Simulation provided by Fong & Chan Architects 2020a

Figure 3.1-12 Simulation of Hospital Building from West Taron Drive



Source: Simulation provided by Fong & Chan Architects 2020a

Figure 3.1-13 Simulation of Hospital Building from Ruddy Duck Way and West Taron Drive Intersection



Source: Simulation provided by Fong & Chan Architects 2020a

Figure 3.1-14 Simulation of Hospital Building from Riparian Drive

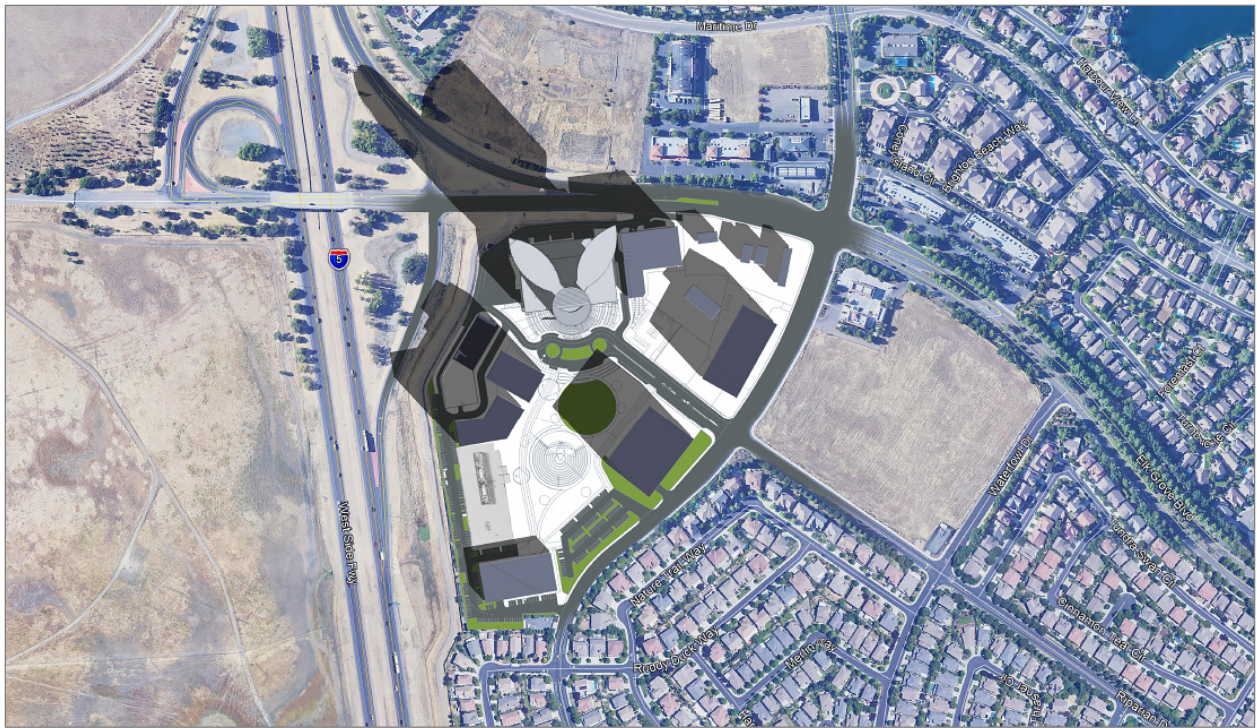


Source: Simulation provided by Fong & Chan Architects 2020a

Figure 3.1-15 Simulation of Hospital Building from Eastbound Elk Grove Boulevard on the I-5 Overpass

Shadow simulations for the Project are provided in Figures 3.1-16 through 3.1-35. As shown in these simulations, shadows generated by the Project at buildout would extend off-site between the months of October and April. The largest extent of these shadows would occur during December and January. Portions of I-5 and Elk Grove Boulevard would be in shadow in the morning hours, while commercial and residential areas northeast of the Project site would be in shadow from 3:00 p.m. to sunset. The City does not have policies, design guidelines, or regulations related to shadow effects, and there are no established light and air easements at the Project site. The Project site and surrounding area are not part of any scenic vistas; therefore, the shadowing would not have a substantially adverse effect on the visual character of the area.

The proposed off-site left-turn pocket for emergency vehicles and roadway improvements required for compliance with General Plan Policy MOB 1-3 would be consistent with the existing visual character of the Elk Grove Boulevard corridor because it would consist of features common to the roadway (signage, median improvements to accommodate the left-turn movement, striping, and lighting). The wastewater and electrical distribution improvements would be placed underground and would not be visible. Electrical substation improvements would be placed behind the existing substation wall and would appear visually similar to existing electrical facilities. Thus, the proposed off-site improvements would not substantially degrade the existing visual character of the Project site or surrounding areas.



Source: Fong & Chan Architects 2020a

Figure 3.1-16 Shadow Conditions on January 1 at 9 a.m.



Source: Fong & Chan Architects 2020a

Figure 3.1-17 Shadow Conditions on January 1 at Noon



Source: Fong & Chan Architects 2020a

Figure 3.1-18 Shadow Conditions on January 1 at 3 p.m.



Source: Fong & Chan Architects 2020a

Figure 3.1-19 Shadow Conditions on January 1 at 4:30 p.m.



Source: Fong & Chan Architects 2020

Figure 3.1-20 Shadow Conditions on April 1 at 9 a.m.



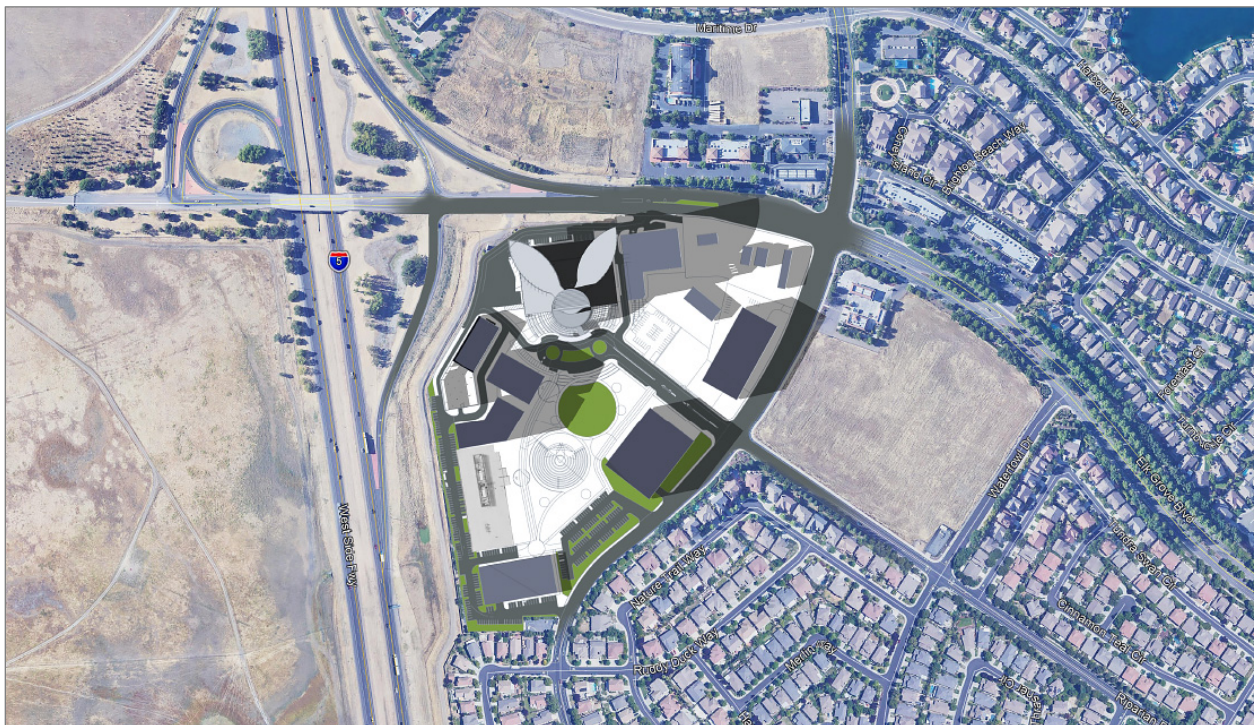
Source: Fong & Chan Architects 2020a

Figure 3.1-21 Shadow Conditions on April 1 at Noon



Source: Fong & Chan Architects 2020a

Figure 3.1-22 Shadow Conditions on April 1 at 3 p.m.



Source: Fong & Chan Architects 2020a

Figure 3.1-23 Shadow Conditions on April 1 at 4:30 p.m.



Source: Fong & Chan Architects 2020a

Figure 3.1-24 Shadow Conditions on July 1 at 9 a.m.



Source: Fong & Chan Architects 2020a

Figure 3.1-25 Shadow Conditions on July 1 at Noon



Source: Fong & Chan Architects 2020a

Figure 3.1-26 Shadow Conditions on July 1 at 3 p.m.



Source: Fong & Chan Architects 2020a

Figure 3.1-27 Shadow Conditions on July 1 at 4:30 p.m.



Source: Fong & Chan Architects 2020a

Figure 3.1-28 Shadow Conditions on October 1 at 9 a.m.



Source: Fong & Chan Architects 2020a

Figure 3.1-29 Shadow Conditions on October 1 at Noon



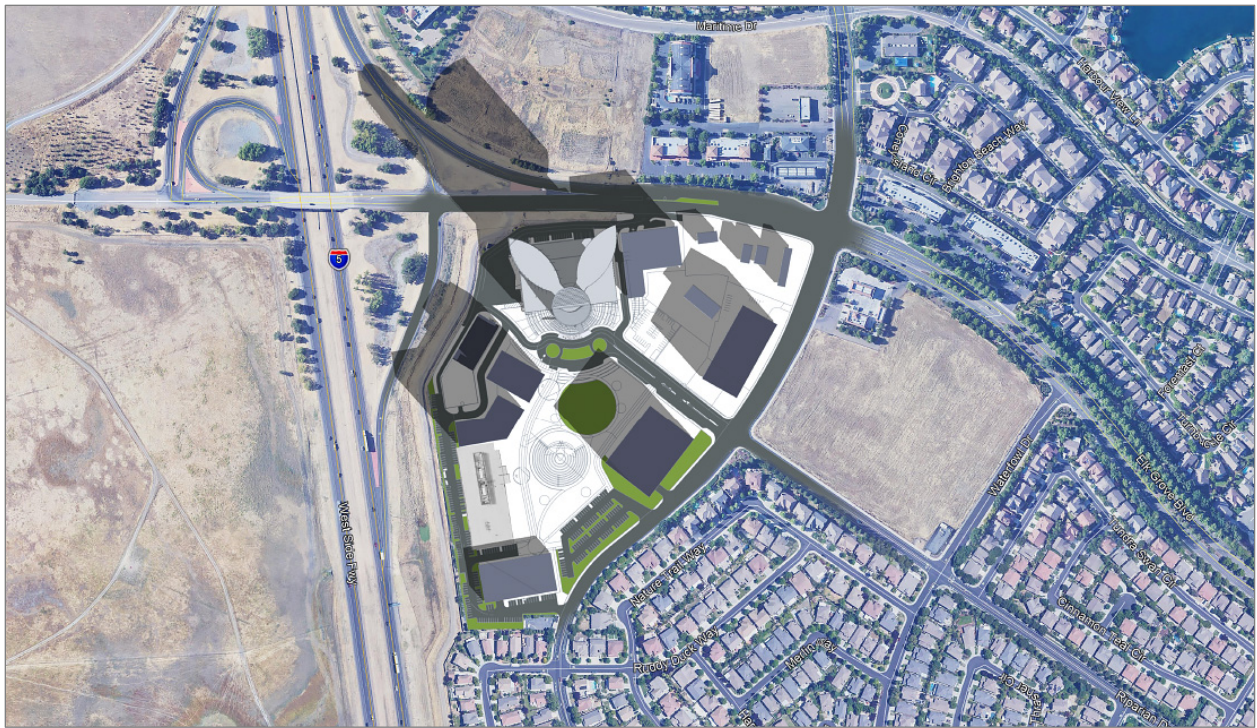
Source: Fong & Chan Architects 2020a

Figure 3.1-30 Shadow Conditions on October 1 at 3 p.m.



Source: Fong & Chan Architects 2020a

Figure 3.1-31 Shadow Conditions on October 1 at 4:30 p.m.



Source: Fong & Chan Architects 2020a

Figure 3.1-32 Shadow Conditions on December 22 at 9 a.m.



Source: Fong & Chan Architects 2020a

Figure 3.1-33 Shadow Conditions on December 22 at Noon



Source: Fong & Chan Architects 2020a

Figure 3.1-34 Shadow Conditions on December 22 at 3 p.m.



Source: Fong & Chan Architects 2020a

Figure 3.1-35 Shadow Conditions on December 22 at 4:30 p.m.

Summary

While the Project site currently contains various single- and two-story buildings typical of commercial, retail, and office development in the City, the Project site would expand the existing developed conditions of the site from 243,837 sq. ft. of one- and two-story buildings to approximately 1,800,000 sq. ft. with building heights ranging between two stories and 13 stories at the western boundary of the City adjoining open space areas of the NWR. Thus, construction and operation of the Project would result in a substantial degradation of the existing visual character of the Project area.

Mitigation related to the aesthetic impacts associated with development of the Project, in accordance with Section 15370 of the State CEQA Guidelines, may include reducing the scale of the development or relocating the development to other less visually sensitive areas. Chapter 5, "Alternatives," evaluates both a reduced development size and an alternative project location. As described in Section 5.4, "Alternatives Selected for Detailed Analysis," these alternatives would not avoid significant impacts on the visual character or quality of the respective project sites. Therefore, this impact would be **significant and unavoidable**.

Mitigation Measures

As noted above, there are no feasible mitigation measures to address this impact.

Impact 3.1-2 Consistency with Regulations Governing Site Design and Architecture

Project site design and architectural character are regulated by the City through compliance with General Plan policies; compliance with Zoning Code Chapters 23.29, 23.54, and 23.62; and application of the Design Guidelines. The Project would not conflict with City design policies and guidelines that are associated with site design and architecture. Thus, this impact would be **less than significant**.

Site design and architectural character are regulated by the City through compliance with General Plan policies; compliance with Zoning Code Chapters 23.29, 23.54, and 23.62; and application of the Design Guidelines.

As identified below, the Project would be consistent with the following City design policies and guidelines, which are associated with visual character:

- ▶ High-quality, attractive, functional, and efficient development and signage (General Plan Policies LU-5-1, LU-5-2, and LU-5-4; Standard LU-5-4a; Policies LU-5-5, LU-5-6, LU-5-7, LU-5-8, and LU-5-9; Standard LU-5-9[a]; Zoning Code Chapters 23.29, 23.54, and 23.62; Section 23.16.027; Design Guidelines 1, 2, 3, 17, 20, 21, 22, 23, 25, 26, 29, 63, and 65 of Chapter 5A; and Design Guidelines 1, 2, 3, 4, 5, 6, 7, 8, 10, 14, and 27 of Chapter 5B)

The Project site design would cluster the largest buildings and associated massing along the western boundary to provide a transition of building intensity from the existing residential commercial uses in the surrounding area (Figures 2-5 and 2-6). This cluster would include the approximately 261-foot-tall hospital building, which would be sited in the northwest corner of the site, set back approximately 800 feet from the nearest residences, located east of the site. Although the hospital building height would exceed the 60-foot building height maximum set forth in Zoning Code Chapter 23.29, the chapter notes that maximum height can be increased contingent on the compatibility with surrounding context and character of the Project site.

The site plan illustrates a centralized open space and gathering feature with pedestrian paths that interconnect the on-site buildings and that would connect to a proposed trail facility along West Taron Drive. Perimeter and building landscaping would provide visual transition and soften the appearance of the proposed CNU Medical Center Project. Parking lots are proposed to be landscaped and spread across the site to minimize the extent of paved areas. The Project's signage program would be consistent with City policy provisions and guidelines and would not expand the extent of perimeter Project site signage beyond existing conditions.

Phase 1 of the Project includes architectural details for the proposed hospital building and central plant. The hospital building entry is highlighted through the use of glass and metallic features. The overall architectural design of the hospital building incorporates the use of neutral tones in varying shades and material types (Figures 2-8 through 2-11). The building towers alter window styles and shades and exterior finishes to provide visual interest and avoid a

monotone appearance of the building facade. The central plant would have less height and mass than the hospital building but would include the same neutral tones and materials as the hospital (Figures 2-12 and 2-13). Although the rest of the proposed buildings under Phases 2 and 3 have not been designed, they would be required to use neutral tones similar to and materials consistent with those used in Phase 1.

- Integration of new development with surrounding areas (General Plan Policy LU-5-4; Standard LU-5-4a; Zoning Code Chapters 23.29 and 23.54; Design Guidelines 3 and 6 of Chapter 5A; Design Guidelines 6, 7, and 8 of Chapter 5B)

The Project site design would cluster the largest buildings and associated massing along the western boundary to provide a transition of building intensity from the existing residential commercial uses in the surrounding area (Figures 2-5 and 2-6). This cluster would include the approximately 261-foot-tall hospital building, which would be sited in the northwest corner of the site, set back approximately 800 feet from the nearest residences, located east of the site. Perimeter and building landscaping would provide visual transition and soften the appearance of the proposed CNU Medical Center Project. The Project also includes a wall, landscaping, and a single-story parking structure at the southern portion of the site to soften the visual character of the Project and partially screen the Project from adjoining residential uses (Figure 2-18).

- Conceal utilities (General Plan Policy LU-5-3, Standard LU-5-3a, and Design Guidelines 36 of Chapter 5A)

As identified in Chapter 2, "Project Description," the Project infrastructure improvements would generally be placed underground, consistent with City policy provisions. Utility boxes would be placed aboveground.

As shown in the analysis above, the Project would not conflict with City design policies and guidelines that are associated with visual character. Thus, this impact would be **less than significant**.

Mitigation Measures

No mitigation is required.

Impact 3.1-3 Create a New Source of Substantial Light or Glare That Would Adversely Affect Day or Nighttime Views

The Project site design would include building lighting, light fixtures in parking lots, interior pathways, and building gateways, and quad and promenade lighting that would increase nighttime lighting conditions in the Project area. Implementation of Mitigation Measure 3.1-3 would avoid daytime glare through the use of nonreflective materials consistent with City Design Guideline 11 Chapter 5B. Although the use of curtains or blinds would reduce the extent of hospital building interior lighting at night, it would not eliminate all building light sources, such as building entry features and the helicopter landing site. The helicopter landing site and building lighting must be visible pursuant to FAA regulations. These hospital building features would result in significant new sources of nighttime lighting within the Project area. Therefore, this impact would be **significant and unavoidable**.

As described in Section 3.1.2, "Environmental Setting," the Project site and surrounding area contain sources of light and glare that include streetlights along local roadways and I-5, vehicle lights along roadways and I-5, lights in parking lots, exterior building lighting, and interior lights within buildings.

The Project site design would include light fixtures in parking lots, interior pathways, and building gateways and quad and promenade lighting. Parking lot lighting would be similar to existing conditions on the site and would be designed to downcast lighting and avoid the illumination of night sky and minimize spillover lighting (Fong & Chan Architects 2020b:Sheets LI0-1, LI1-0.1, and LI1-0.2). The proposed lighting plan would contain lighting spillover within and immediately adjacent to the Project site. This is consistent with the lighting requirements of Zoning Code Chapter 23.56.

The proposed hospital building would create a new nighttime light source from interior lighting that would be visually prominent from adjoining public views. The conditions would be similar to those created by the existing UC Davis Medical Center hospital building (Figure 3.1-36). The Project would contain many lighting features that are similar to the existing UC Davis Medical Center hospital building. These features include a tall tower that contains patient rooms, which may remain illuminated 24 hours per day; red aircraft warning lights at the top of the buildings;

and a brightly lit and conspicuous entry way and lobby. Figure 3.1-37 provides a visual simulation of the proposed hospital building at night. The proposed hospital building would be a significant new light source in public views in the Project area because of the building's height.

The proposed hospital would also have special colored lighting for the proposed helicopter landing site and a potential beacon lighting consistent with the requirements of FAA Advisory Circular 150/5390-2C (Heliport Design), Chapter 4 (Hospital Heliports), and Section 415 (Heliport Lighting) as well as air navigation lighting consistent with FAA Advisory Circular 70/7460-1L Change 2 (Obstruction Marking and Lighting). The helistop would be constructed on the roof of the patient-bed wing of the tower in Phase 1. The lighting plan for the helistop has not been prepared. Figure 3.1-38 provides a conceptual design of the anticipated helistop lighting. As shown in this figure, much of helistop lighting would be flush with the roof and not visible from the ground.

The proposed hospital may create a new source of daytime glare. It would include the use of neutral tone glass fiber-reinforced concrete panels, dark gray metallic aluminum curtainwall with blue-green-tinted Low-E glazing, metallic architectural metal panel cladding, gray aluminum composite panel wall cladding, neutral tone precast concrete panels, and gray vertical aluminum perforated sunshades on the windows. The neutral tone concrete panels, sunshades and dark gray aluminum building materials would reduce reflectivity. However, the extent of glass on the building may create daytime glare depending on the angle of the sun.



Source: Photograph taken by Ascent Environmental in 2020

Figure 3.1-36 **Representative Nighttime View of a Hospital Building—UC Davis Medical Center in Sacramento, California**

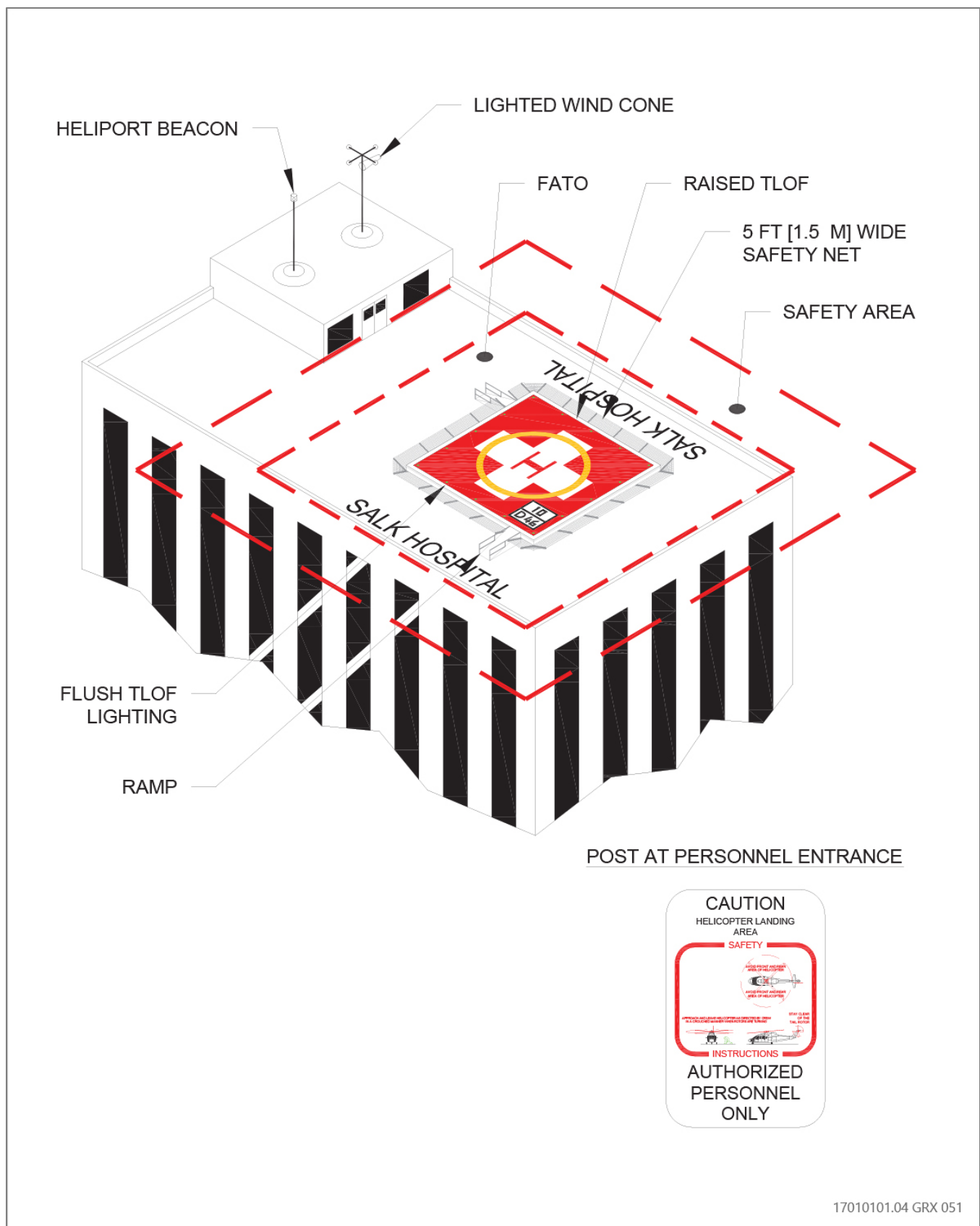


Source: Simulation provided by Fong and Chan Architects in 2020

Figure 3.1-37 Simulation of Nighttime View of Hospital Building

Proposed off-site improvements associated with the Elk Grove Boulevard left-turn pocket for emergency vehicles may involve the use of warning lights and improvements to the I-5 northbound off-ramp intersection would consist of a new traffic signal. However, these lighting sources would be similar to existing lighting along Elk Grove Boulevard, which contains tall mast lighting and shielding to improve nighttime visibility (see Figure 3.1-3 for example). Off-site wastewater and electrical improvements would not include any new lighting fixtures. Thus, new off-site lighting fixtures associated with the Project would not substantially contribute to light and glare.

Overall, the hospital building features would result in significant new sources of nighttime lighting within the Project area and may create daytime glare. Implementation of Mitigation Measure 3.1-3 would avoid daytime glare through the use of nonreflective materials consistent with City Design Guideline 11 Chapter 5B. Although the use of curtains/blinds would reduce the extent of building interior lighting spillover at night, it would not eliminate all light sources, such as building entry features and the helicopter landing site. It is also possible that hospital room window curtains/blinds may inadvertently not be drawn at night due to employee error or patients opening the curtains/blinds later in the night. The helicopter landing site and building lighting must be visible pursuant to FAA regulations. Therefore, this impact would be **significant and unavoidable**.



Source: FAA 2012, adapted by Ascent Environmental in 2019

Figure 3.1-38 Federal Aviation Administration Conceptual Marking and Lighting Plan for Hospital Heliports

Mitigation Measures

Mitigation Measure 3.1-3: Minimize Light and Glare from Hospital Building

The following mitigation shall be incorporated into the final design of the hospital building:

- ▶ Each room with a window in the hospital building shall be equipped with a curtain or blinds of sufficient thickness to avoid lighting from escaping from the window at night. Operation of the hospital will require that curtains or blinds be drawn at night.
- ▶ All windows and glazing shall use nonreflective materials or be designed to eliminate daytime glare. The overall building will be designed to meet the requirements of the LEED Pilot Credit 55. This credit analyzes all the exterior materials used and limits the proportion of materials that are deemed to have a high threat factor to birds. This credit was crafted by the American Bird Conservatory and is their preferred guideline for building designers (as stated in their Bird Friendly Building Design Guide).

Prior to issuance of plan approval or building permit by the California Office of Statewide Health Planning and Development Facilities Development Division, the Project Applicant shall submit documentation to the City Development Services Department to verify compliance with this measure.

Significance after Mitigation

Significant and unavoidable.

3.2 AIR QUALITY

This section includes a discussion of existing air quality conditions, a summary of applicable air quality regulations, and an analysis of potential short-term and long-term air quality impacts that could result from implementation of the CNU Medical Center Project. The methods of analysis for short-term construction, long-term regional (operational), local mobile-source, and toxic air emissions and odors are consistent with the recommendations of the Sacramento Metropolitan Air Quality Management District (SMAQMD), the California Air Resources Board (CARB), and the U.S. Environmental Protection Agency (EPA).

Comments submitted in response to the NOP pertaining to air quality requested that the air quality analysis review impacts against the State CEQA Guidelines Appendix G checklist questions, address air quality impacts consistent with the California Department of Transportation's (Caltrans') policies and guidance, and demonstrate conformity with the Clean Air Act (CAA). Air quality impacts are addressed in Section 3.2.3, "Impacts and Mitigation Measures," below, using criteria derived from Appendix G of the State CEQA Guidelines and methodologies that are consistent with Caltrans guidance. The Project's construction and operation emissions of criteria air pollutants, ozone precursors, toxic air contaminants (TACs), and odors are evaluated in addition to its consistency with relevant air quality plans pursuant to the Appendix G checklist questions.

3.2.1 Regulatory Setting

Ambient air quality in the Project area is regulated through the efforts of various federal, State, regional, and local government agencies. These agencies work jointly, as well as individually, to improve air quality through legislation, planning, policymaking, education, and a variety of programs. The agencies responsible for improving the air quality in the air basin in which the Project area is located are discussed below.

FEDERAL

EPA has been charged with implementing national air quality programs. EPA's air quality mandates are drawn primarily from the federal CAA, which was enacted in 1970 (42 United States Code Chapter 85). The most recent major amendments were made by Congress in 1990.

Safer Affordable Fuel-Efficient Vehicles Rule

On August 2, 2018, the National Highway Traffic Safety Administration and EPA proposed the Safer Affordable Fuel-Efficient Vehicles Rule (SAFE Rule) (49 Code of Federal Regulations (CFR) 523, 531, 533, 536, and 537 and 40 CFR 85 and 86). This rule addresses emissions and fuel economy standards for motor vehicles and is separated in two parts as described below.

Part One, "One National Program" (84 *Federal Register* [FR] 51310), revokes a waiver granted by EPA to the State of California under Section 209 of the CAA to enforce more stringent emission standards for motor vehicles than those required by EPA for the explicit purpose of greenhouse gas (GHG) reduction and, indirectly, criteria air pollutants and ozone precursor emission reduction. This revocation became effective on November 26, 2019, restricting the ability of CARB to enforce more stringent GHG emission standards for new vehicles and set zero-emission-vehicle mandates in California. CARB has estimated the vehicle tailpipe and evaporative emissions impacts on criteria air pollutants from SAFE Rule Part One and has provided off-model adjustment factors to adjust emissions output from CARB's Emission Factor (EMFAC) model.

Part Two addresses Corporate Average Fuel Economy (CAFE) standards for passenger cars and light trucks for model years 2021–2026. This rulemaking proposes new CAFE standards for model years 2022–2026 and would amend existing CAFE standards for model year 2021. The proposal would retain the model year 2020 standards (specifically, the footprint target curves for passenger cars and light trucks) through model year 2026, but comment is sought on a range of alternatives discussed throughout the proposed rule. This proposal addressing

CAFE standards is being jointly developed with EPA, which is simultaneously proposing tailpipe carbon dioxide standards for the same vehicles covered by the same model years. The final SAFE Rule Part Two was released on March 31, 2020, and multiple lawsuits have been filed challenging the rulemaking.

Criteria Air Pollutants

The CAA required EPA to establish the national ambient air quality standards (NAAQS) (42 United States Code Section 7409). As shown in Table 3.2-1, EPA has established primary and secondary NAAQS for the following criteria air pollutants: ozone, carbon monoxide (CO), nitrogen dioxide (NO₂), sulfur dioxide, respirable particulate matter with an aerodynamic diameter of 10 micrometers or less (PM₁₀), fine particulate matter with an aerodynamic diameter of 2.5 micrometers or less (PM_{2.5}), and lead. The primary standards protect the public health, and the secondary standards protect public welfare. The CAA also requires each state to prepare a State Implementation Plan (SIP) for attaining and maintaining the NAAQS. The federal CAA amendments of 1990 added requirements for states with nonattainment areas to revise their SIPs to incorporate additional control measures to reduce air pollution. Individual SIPs are modified periodically to reflect the latest emissions inventories, planning documents, and rules and regulations of the air basins as reported by their jurisdictional agencies. EPA is responsible for reviewing all SIPs to determine whether they conform to the mandates of the CAA and its amendments, and whether implementation will achieve air quality goals. If EPA determines a SIP to be inadequate, a federal implementation plan that imposes additional control measures may be prepared for the nonattainment area. If an approvable SIP is not submitted or implemented within the mandated time frame, sanctions may be applied to transportation funding and stationary air pollution sources in the air basin.

Toxic Air Contaminants/Hazardous Air Pollutants

TACs, or, in federal parlance, hazardous air pollutants (HAPs), are a defined set of airborne pollutants that may pose a present or potential hazard to human health. A TAC is defined as an air pollutant that may cause or contribute to an increase in mortality or in serious illness, or that may pose a hazard to human health. A substance that is listed as a HAP pursuant to subsection (b) of Section 112 of the CAA (42 United States Code Section 7412[b]) is considered a TAC. TACs are usually present in minute quantities in the ambient air; however, their high toxicity or health risk may pose a threat to public health even at low concentrations.

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

For evaluation purposes, TACs are separated into carcinogens and noncarcinogens based on the nature of the physiological effects associated with exposure to the pollutant. Carcinogens are assumed to have no safe threshold below which health impacts would not occur. This contrasts with criteria air pollutants, for which acceptable levels of exposure can be determined and for which ambient standards have been established (Table 3.2-1). Cancer risk from TACs is expressed as excess cancer cases per one million exposed individuals, typically over a lifetime of exposure.

EPA and, in California, CARB regulate HAPs and TACs, respectively, through statutes (i.e., 42 United States Code Section 7412[b]) and regulations that generally require the use of the maximum achievable control technology or best available control technology (BACT) for toxics to limit emissions.

Table 3.2-1 National and California Ambient Air Quality Standards

Pollutant	Averaging Time	California (CAAQS) ^{a,b}	National (NAAQS) ^c	
			Primary ^{b,d}	Secondary ^{b,e}
Ozone	1-hour	0.09 ppm (180 µg/m ³)	— ^e	Same as primary standard
	8-hour	0.070 ppm (137 µg/m ³)	0.070 ppm (137 µg/m ³)	
Carbon monoxide (CO)	1-hour	20 ppm (23 mg/m ³)	35 ppm (40 mg/m ³)	Same as primary standard
	8-hour	9 ppm ^f (10 mg/m ³)	9 ppm (10 mg/m ³)	
Nitrogen dioxide (NO ₂)	Annual arithmetic mean	0.030 ppm (57 µg/m ³)	53 ppb (100 µg/m ³)	Same as primary standard
	1-hour	0.18 ppm (339 µg/m ³)	100 ppb (188 µg/m ³)	—
Sulfur dioxide (SO ₂)	24-hour	0.04 ppm (105 µg/m ³)	—	—
	3-hour	—	—	0.5 ppm (1,300 µg/m ³)
	1-hour	0.25 ppm (655 µg/m ³)	75 ppb (196 µg/m ³)	—
Respirable particulate matter (PM ₁₀)	Annual arithmetic mean	20 µg/m ³	—	Same as primary standard
	24-hour	50 µg/m ³	150 µg/m ³	
Fine particulate matter (PM _{2.5})	Annual arithmetic mean	12 µg/m ³	12.0 µg/m ³	15.0 µg/m ³
	24-hour	—	35 µg/m ³	Same as primary standard
Lead ^f	Calendar quarter	—	1.5 µg/m ³	Same as primary standard
	30-day average	1.5 µg/m ³	—	—
	Rolling 3-month average	—	0.15 µg/m ³	Same as primary standard
Hydrogen sulfide	1-hour	0.03 ppm (42 µg/m ³)	No national standards	
Sulfates	24-hour	25 µg/m ³		
Vinyl chloride ^f	24-hour	0.01 ppm (26 µg/m ³)		
Visibility-reducing particulate matter	8-hour	Extinction of 0.23 per km		

Notes: µg/m³ = micrograms per cubic meter; CAAQS = California ambient air quality standards; km = kilometers; mg/m³ = milligrams per cubic meter; NAAQS = national ambient air quality standards; ppb = parts per billion; ppm = parts per million (by volume).

^a California standards for ozone, carbon monoxide, SO₂ (1- and 24-hour), NO₂, particulate matter, and visibility-reducing particles are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

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

^c National standards (other than ozone, particulate matter, and those based on annual averages or annual arithmetic means) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration in a year, averaged over 3 years, is equal to or less than the standard. The PM₁₀ 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m³ is equal to or less than one. The PM_{2.5} 24-hour standard is attained when 98 percent of the daily concentrations, averaged over 3 years, are equal to or less than the standard.

^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 the public welfare from any known or anticipated adverse effects of a pollutant.

^f The California Air Resources Board has identified lead and vinyl chloride as toxic air contaminants with no threshold of exposure for adverse health effects determined. This allows for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

Sources: EPA 2016; CARB 2019a

STATE

CARB is the agency responsible for coordination and oversight of State and local air pollution control programs in California and for implementing the California Clean Air Act (CCAA) (California Health and Safety Code Section 40910). The CCAA, which was adopted in 1988, required CARB to establish the California ambient air quality standards (CAAQS) (Table 3.2-1).

Criteria Air Pollutants

CARB has established CAAQS for sulfates, hydrogen sulfide, vinyl chloride, visibility-reducing particulate matter, and the above-mentioned criteria air pollutants. In most cases, the CAAQS are more stringent than the NAAQS. Differences in the standards are generally explained by the health effects studies considered during the standard-setting process and the interpretation of the studies. In addition, the CAAQS incorporate a margin of safety to protect sensitive individuals.

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

Toxic Air Contaminants

TACs in California are regulated primarily through the Tanner Air Toxics Act (Assembly Bill [AB] 1807, Chapter 1047, Statutes of 1983) (California Health and Safety Code Section 39666[f]) and the Air Toxics Hot Spots Information and Assessment Act of 1987 (Hot Spots Act) (AB 2588, Chapter 1252, Statutes of 1987) (California Health and Safety Code Section 44300). AB 1807 sets forth a formal procedure for CARB to designate substances as TACs. Research, public participation, and scientific peer review are required before CARB can designate a substance as a TAC. To date, CARB has identified more than 21 TACs and adopted EPA's list of HAPs as TACs. Most recently, particulate matter (PM) exhaust from diesel engines (diesel PM) was added to CARB's list of TACs.

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

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

AB 617 of 2017 (California Health and Safety Code Section 39607.1) aims to help protect air quality and public health in communities around stationary sources of pollution, including facilities subject to the State's cap-and-trade program for GHG emissions. It imposes a new State-mandated local program to address nonvehicular sources (e.g., refineries, manufacturing facilities) of criteria air pollutants and TACs. AB 617 requires CARB to identify high-pollutant areas and directs air districts to focus air quality improvement efforts through adoption of community emission reduction programs within these identified areas. Currently, air districts review individual sources and impose emissions limits on emitters based on BACT, pollutant type, and proximity to nearby existing land uses. AB 617 addresses the cumulative and additive nature of air pollutant health effects by requiring communitywide air quality assessment and emission reduction planning.

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

also expected to continue to reduce formaldehyde emissions emitted by cars and light-duty trucks. As emissions are reduced, it is expected that risks associated with exposure to the emissions will also be reduced.

Assembly Bill 900

In September 2011, Governor Brown signed the Jobs and Economic Improvement Through Environmental Leadership Act, which required the governor to establish procedures for applying for streamlined environmental review under CEQA for projects that meet certain requirements (PRC Section 21178). The Governor's Office of Planning and Research has provided approved guidelines for submitting applications for streamlined environmental review pursuant to the act. One of the guidelines states that the project will achieve at least 15 percent greater transportation efficiency, as defined in PRC Section 21180(c), than comparable projects. Achievement of transportation efficiency results in a decrease in vehicle miles traveled (VMT), which reduces emissions of criteria air pollutants and precursors associated with mobile sources. AB 900 further requires no net increase in GHG emissions and achievement of U.S. Green Building Council's Leadership in Energy and Environmental Design Gold certification or better. These reductions in GHG emissions and energy use will also reduce air quality impacts.

LOCAL

Sacramento Metropolitan Air Quality Management District

Criteria Air Pollutants

SMAQMD is the primary agency responsible for planning to meet NAAQS and CAAQS in Sacramento County. SMAQMD works with other local air districts in the Sacramento region to maintain the region's portion of the SIP for ozone. The SIP is a compilation of plans and regulations that govern how the region and State will comply with the CAA requirements to attain and maintain the NAAQS for ozone. The Sacramento region has been designated as a "moderate" 2015 8-hour ozone nonattainment area with an extended attainment deadline of June 15, 2019 (EPA 2019). The 2018 Sacramento Regional 2008 8-Hour Ozone Attainment and Further Reasonable Progress Plan was approved by CARB on November 16, 2017. The previous 2013 Update to the 8-Hour Ozone Attainment and Reasonable Further Progress Plan was approved and promulgated by EPA for the 1997 8-Hour Ozone Standard. EPA has not released a notice of approval and promulgation of the 2017 SIP (CARB 2017).

SMAQMD has developed a set of guidelines for use by lead agencies when preparing environmental documents. The guidelines contain thresholds of significance for criteria pollutants and TACs and make recommendations for conducting air quality analyses. After SMAQMD guidelines have been consulted and the air quality impacts of a project have been assessed, the lead agency's analysis undergoes a review by SMAQMD. SMAQMD submits comments and suggestions to the lead agency for incorporation into the environmental document.

All projects are subject to adopted SMAQMD rules and regulations in effect at the time of construction. Specific rules applicable to the construction of the 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 CARB portable equipment registration.
- ▶ **Rule 202: New Source Review.** The purpose of this rule is to provide for the issuance of authorities to construct and permits to operate at new and modified stationary air pollution sources and to provide mechanisms, including emission offsets, by which authorities to construct such sources may be granted without interfering with the attainment or maintenance of ambient air quality standards.
- ▶ **Rule 207: Federal Operating Permit.** The purpose this rule is to establish an operating permitting system consistent with the requirements of Title V of the United States Code and pursuant to 40 FR Part 70. Stationary

sources subject to the requirements of this rule are also required to comply with any other applicable federal, state, or SMAQMD orders, rules and regulations, including requirements pertaining to prevention of significant deterioration pursuant to Rule 203, requirements to obtain an authority to construct pursuant to Rule 201, or applicable requirements under SMAQMD's new source review rule in the SIP.

- ▶ **Rule 402: Nuisance.** A person shall not discharge from any source whatsoever such quantities of air contaminants or other materials which cause injury, detriment, nuisance or annoyance to any considerable number of persons or the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause or have natural tendency to cause injury or damage to business or property.
- ▶ **Rule 403: Fugitive Dust.** The developer or contractor is required to control dust emissions from earthmoving activities or any other construction activity to prevent airborne dust from leaving the project site. Fugitive dust controls include the following:
 - Water all exposed surfaces two times daily.
 - Cover or maintain at least two feet of free board on haul trucks transporting soil, sand, or other loose material on the site.
 - Use wet power vacuum street sweepers to remove any visible trackout mud or dirt onto adjacent public roads at least once a day.
 - Limit vehicle speeds on unpaved roads to 15 miles per hour.
 - All roadways, driveways, sidewalks, parking lots to be paved should be completed as soon as possible. In addition, building pads should be laid as soon as possible after grading unless seeding or soil binders are used.
 - Minimize idling time either by shutting equipment off when not in use or reducing the time of idling to 5 minutes.
 - Maintain all construction equipment in proper working condition according to manufacturer's specifications.
- ▶ **Rule 442: Architectural Coatings.** The purpose of this rule is to limit the emissions of volatile organic compounds from the use of architectural coatings supplied, sold, offered for sale, applied, solicited for application, or manufactured for use within Sacramento County.
- ▶ **Rule 902: Asbestos.** The developer or contractor is required to notify SMAQMD of any regulated renovation or demolition activity. Rule 902 contains specific requirements for surveying, notification, removal, and disposal of material containing asbestos.

In addition, if modeled construction-generated emissions for a project are not reduced to levels below SMAQMD's mass emission threshold (of 85 pounds per day [lb/day] for nitrogen oxide [NO_x], 80 lb/day or 14.6 tons per year [tons/year] for PM₁₀, and 82 lb/day or 15 tons/year for PM_{2.5}) after the standard construction mitigation is applied, then SMAQMD requires purchasing an off-site construction mitigation fee to purchase off-site emissions reductions. Such purchases are made through SMAQMD's Heavy Duty Incentive Program, through which select owners of heavy-duty equipment in Sacramento County can repower or retrofit their old engines with cleaner engines or technologies (SMAQMD 2019a).

Toxic Air Contaminants

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

Odors

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

City of Elk Grove

General Plan

The following policies from the Community and Resource Protection Chapter of the *Elk Grove General Plan* apply to the Project (City of Elk Grove 2019):

- ▶ **Policy NR-2-1:** Preserve large native oak and other native tree species as well as large nonnative tree species that are an important part of the City's historic and aesthetic character. When reviewing native or non-native trees for preservation, consider the following criteria:
 - Health of the tree
 - Safety hazards posed by the tree
 - Suitability for preservation in place
 - Biological value
 - Shade benefits
 - Water quality benefits
 - Runoff reduction benefits
 - Air quality benefits (pollutant reduction)
- ▶ **Policy NR-2-4:** Preserve and plant trees in appropriate densities and locations to maximize energy conservation and air quality benefits.
- ▶ **Policy NR-4-1:** Require all new development projects which have the potential to result in substantial air quality impacts to incorporate design, and/or operational features that result in a reduction in emissions equal to 15 percent compared to an "unmitigated baseline project." An unmitigated baseline project is a development project which is built and/or operated without the implementation of trip reduction, energy conservation, or similar features, including any such features which may be required by the Zoning Code or other applicable codes.
- ▶ **Policy NR-4-3:** Implement and support programs that reduce mobile source emissions.
- ▶ **Policy NR-4-4:** Promote pedestrian/bicycle access and circulation to encourage residents to use alternative modes of transportation in order to minimize direct and indirect emissions of air contaminants.
- ▶ **Policy NR-4-5:** Emphasize demand management strategies that seek to reduce single-occupant vehicle use in order to achieve State and federal air quality plan objectives.
- ▶ **Policy NR-4-8:** Require that development projects incorporate best management practices during construction activities to reduce emissions of criteria pollutants.
- ▶ **Policy NR-4-13:** Minimize the exposure of sensitive land uses to objectionable odors.
- ▶ **Policy NR-5-2:** Improve the health and sustainability of the community through improved regional air quality and reduction of greenhouse gas emissions that contribute to climate change.

3.2.2 Environmental Setting

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

portion of Solano County. The ambient concentrations of air pollutant emissions are determined by the amount of emissions released by the sources of air pollutants and the atmosphere's ability to transport and dilute such emissions. Natural factors that affect transport and dilution include terrain, wind, atmospheric stability, and sunlight. Therefore, existing air quality conditions in the area are determined by such natural factors as topography, meteorology, and climate, in addition to the amount of emissions released by existing air pollutant sources, as discussed separately below.

CLIMATE, METEOROLOGY, AND TOPOGRAPHY

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

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

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

May through October is ozone season in the SVAB. This period is characterized by poor air movement in the mornings 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 reactive organic gases (ROG) and NO_x, which result in ozone formation. Typically, the Delta breeze transports air pollutants northward out of the SVAB; however, a phenomenon known as the Schultz Eddy prevents this from occurring during approximately half of the time from July to September. The Schultz Eddy phenomenon causes the wind to shift southward and blow air pollutants back into the SVAB. This phenomenon exacerbates the concentration of air pollutant emissions in the area and contributes to the area violating the ambient air quality standards.

The local meteorology of the Project site and surrounding area is represented by measurements recorded at the Western Regional Climate Center Sacramento Executive Airport Station. The normal annual precipitation is approximately 17 inches. January temperatures range from a normal minimum of 37.8°F to a normal maximum of 53.5°F. July temperatures range from a normal minimum of 58.2°F to a normal maximum of 92.7°F (WRCC 2016). The prevailing wind direction is from the south (WRCC 2002).

CRITERIA AIR POLLUTANTS

Concentrations of criteria air pollutants are used to indicate the quality of the ambient air. Ozone, PM₁₀, and PM_{2.5} are the criteria air pollutants of primary concern in this analysis because of their nonattainment status with respect to the applicable NAAQS and/or CAAQS in the SVAB. Brief descriptions of these key criteria air pollutants in the SVAB and their health effects are provided below. The attainment statuses of all criteria air pollutants with respect to the NAAQS and the CAAQS in Sacramento County are shown in Table 3.2-2. Monitoring data applicable to the Project site are provided in Table 3.2-3.

Ozone

Ground-level ozone is not emitted directly into the air but is created by chemical reactions between ROG and NO_x. This happens when pollutants emitted by cars, power plants, industrial boilers, refineries, chemical plants, and other sources chemically react in the presence of sunlight. Ozone at ground level is a harmful air pollutant because of its effects on people and the environment, and it is the main ingredient in smog (EPA 2018).

Acute health effects of ozone exposure include increased respiratory and pulmonary resistance, cough, pain, shortness of breath, and lung inflammation. Chronic health effects include permeability of respiratory epithelia and possibility of permanent lung impairment (EPA 2018). Emissions of the ozone precursors ROG and NO_x have decreased over the past two decades because of more stringent motor vehicle standards and cleaner burning fuels (CARB 2013).

Nitrogen Dioxide

NO₂ is a brownish, highly reactive gas that is present in all urban environments. The major human-made sources of NO₂ are combustion devices, such as boilers, gas turbines, and mobile and stationary reciprocating internal combustion engines. Combustion devices emit primarily nitric oxide (NO), which reacts through oxidation in the atmosphere to form NO₂. The combined emissions of NO and NO₂ are referred to as NO_x and are reported as equivalent NO₂. Because NO₂ is formed and depleted by reactions associated with photochemical smog (ozone), the NO₂ concentration in a particular geographical area may not be representative of the local sources of NO_x emissions (EPA 2018).

Acute health effects of exposure to NO_x include coughing, difficulty breathing, vomiting, headache, eye irritation, chemical pneumonitis, pulmonary edema, breathing abnormalities, cough, cyanosis, chest pain, rapid heartbeat, and death. Chronic health effects include chronic bronchitis and decreased lung function (EPA 2018).

Particulate Matter

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

Acute health effects of exposure to PM₁₀ include breathing and respiratory symptoms; aggravation of existing respiratory and cardiovascular diseases, including asthma and chronic obstructive pulmonary disease; and premature death. Chronic health effects include alterations to the immune system and carcinogenesis (EPA 2018). For PM_{2.5}, short-term exposures (up to 24 hours in duration) have been associated with premature mortality, increased hospital admissions for heart or lung causes, acute and chronic bronchitis, asthma attacks, emergency room visits, respiratory symptoms, and restricted activity days. These adverse health effects have been reported primarily in infants, children, and older adults with preexisting heart or lung diseases. Long-term (months to years) exposure to PM_{2.5} has been linked to premature death, particularly in people who have chronic heart or lung diseases, and reduced lung function growth in children.

Criteria air pollutant concentrations are measured at several monitoring stations in the SVAB. The Elk Grove-Bruceville Road station is the closest and most representative station to the Project area with recent data for ozone and the maximum concentration of PM_{2.5}. Insufficient data were available at the Elk Grove-Bruceville station for PM₁₀ and the number of days PM_{2.5} concentrations exceeded the national standard, so the next closest station with available data was used (i.e., Sacramento T Street station). Table 3.2-3 summarizes the air quality data from the last 3 years for which data are available (2016–2018).

Table 3.2-2 Attainment Status Designations for Sacramento County

Pollutant	National Ambient Air Quality Standard	California Ambient Air Quality Standard
Ozone	Attainment (1-hour) ¹	Nonattainment (1-hour) classification-serious ²
	Nonattainment (8-hour) ³ classification-moderate	Nonattainment (8-hour)
Respirable particulate matter (PM ₁₀)	Attainment (24-hour)	Nonattainment (24-hour)
		Nonattainment (Annual)
Fine particulate matter (PM _{2.5})	Nonattainment (24-hour)	(No State standard for 24-Hour)
	Attainment (Annual)	Attainment (Annual)
Carbon monoxide (CO)	Attainment (1-hour)	Attainment (1-hour)
	Attainment (8-hour)	Attainment (8-hour)
Nitrogen dioxide (NO ₂)	Unclassified/Attainment (1-hour)	Attainment (1-hour)
	Unclassified/Attainment (Annual)	Attainment (Annual)
Sulfur dioxide (SO ₂) ⁴	(Attainment Pending) (1-Hour)	Attainment (1-hour)
		Attainment (24-hour)
Lead (Particulate)	Attainment (3-month rolling average)	Attainment (30 day average)
Hydrogen sulfide	No federal standard	Unclassified (1-hour)
Sulfates		Attainment (24-hour)
Visibly-reducing particles		Unclassified (8-hour)
Vinyl chloride		Unclassified (24-hour)

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

² Pursuant to Health and Safety Code Section 40921.5(c), the classification is based on 1989–1991 data and therefore does not change.

³ 2015 standard.

⁴ 2010 standard.

Source: CARB 2018

Both CARB and EPA use this type of monitoring data to designate areas according to their attainment status for criteria air pollutants. (Attainment designations are summarized above in Table 3.2-2.)

Table 3.2-3 Summary of Annual Data on Ambient Air Quality (2016–2018)

	2016	2017	2018
Ozone			
Maximum concentration ¹ (1-hour/8-hour average, ppm)	0.089/0.073	0.104/0.086	0.096/0.082
Number of days State standard exceeded ¹ (1-hour/8-hour)	0/1	1/3	1/2
Number of days national standard exceeded ¹ (8-hour)	0	0	0
Fine particulate matter (PM_{2.5})			
Maximum concentration ¹ (24-hour µg/m ³)	30.9	44.9	229.7
Number of days national standard exceeded ² (24-hour measured)	0	6.1	*
Respirable particulate matter (PM₁₀)			
Maximum concentration ² (µg/m ³)	51.4	150.3	309.5
Number of days State standard exceeded ²	1.1	*	22.2
Number of days national standard exceeded ²	0	0	6.0

Notes: µg/m³ = micrograms per cubic meter; ppm = parts per million (by volume).

¹ Measurements from the Elk Grove-Bruceville Road station for ozone, respirable particulate matter (PM₁₀), and maximum concentration of fine particulate matter (PM_{2.5}).

² Measurements from the Sacramento T Street station for days national standard exceeded for fine particulate matter (PM_{2.5}).

* Insufficient (or no) data available to determine the value.

Source: CARB 2019b

TOXIC AIR CONTAMINANTS

According to the 2009 Edition of the California Almanac of Emissions and Air Quality, health risks from TACs can largely be attributed to relatively few compounds, the most important being diesel PM (CARB 2009:5-2 to 5-4). Diesel PM differs from other TACs in that it is not a single substance but rather a complex mixture of hundreds of substances. Although diesel PM is emitted by diesel-fueled internal combustion engines, the composition of the emissions varies depending on engine type, operating conditions, fuel composition, lubricating oil, and whether an emissions control system is being used. Unlike the other TACs, no ambient monitoring data are available for diesel PM because no routine measurement method currently exists. The TACs for which data are available that pose the greatest existing ambient risk in California are benzene, 1,3-butadiene, acetaldehyde, carbon tetrachloride, hexavalent chromium, para-dichlorobenzene, formaldehyde, methylene chloride, and perchloroethylene. Diesel PM poses the greatest health risk among the 10 TACs mentioned. Overall, Statewide emissions of diesel PM are forecasted to decline by 71 percent between 2000 and 2035 (CARB 2013:3-8).

The Project site is located adjacent to I-5, a mobile source of TAC emissions, specifically diesel PM, PM_{2.5}, and total organic gases (TOG). The Project includes the placement of sensitive receptors near I-5, and the estimated health risk associated with the Project's placement is evaluated here using SMAQMD guidance. It is important to note that the risk estimates presented below represent increased cancer risk and PM_{2.5} concentrations from vehicle traffic on I-5 and do not include or represent regional background risk. These risk values are in addition to existing background levels. The risk values also do not reflect existing features on or next to the Project area, such as barriers, trees, and indoor filtration.

SMAQMD has developed its *Mobile Source Air Toxics Protocol* (MSAT Protocol) to assist local agencies with determining potential health impacts associated with new land use development (SMAQMD 2019b). The MSAT Protocol includes a mapping tool that discloses cancer risk from major roadways in the Sacramento region (those with average daily traffic volumes that exceed 100,000 vehicles). Cancer risk is calculated based on emissions of diesel PM, TOG, and PM_{2.5}. Using the mapping tool for the Project's location, the increased health risk variables and estimated values associated with traffic on I-5 near the Project area are shown in Table 3.2-4. Estimated health risk variables are shown from the median of I-5 to the western Project boundary, a distance of approximately 375 feet.

Table 3.2-4 Estimate of Existing Cancer Risk and PM_{2.5} Concentrations from Vehicle Traffic on Interstate 5 for Project Area

Health Risk Variable	Estimated Value
Diesel particulate matter (in one million)	53
Total organic gases (in one million)	7.9
Total DPM + TOG (in one million)	60
Fine particulate matter (µg/m ³)	2.1

Notes: DPM = diesel particulate matter; TOG = total organic gases; µg/m³ = micrograms per cubic meter.

Source: SMAQMD 2020a

As shown in Table 3.2-4, the existing cancer risk from vehicle traffic on I-5 is 60 chances in one million, and the PM_{2.5} concentration is 2.1 micrograms per cubic meter at the Project site. Project-generated TACs would be additive to these existing concentrations and are discussed in Impact 3.2-4.

ODORS

Odors are generally regarded as an annoyance rather than a health hazard. However, manifestations of a person's reaction to foul odors can range from psychological (e.g., irritation, anger, or anxiety) to physiological (e.g., circulatory and respiratory effects, nausea, vomiting, and headache).

With respect to odors, the human nose is the sole sensing device. The ability to detect odors varies considerably among the population and overall is quite subjective. Some individuals can smell minute quantities of specific substances; others may not have the same sensitivity but may have sensitivities to odors of other substances. In

addition, people may have different reactions to the same odor; an odor that is offensive to one person may be perfectly acceptable to another (e.g., fast food restaurant). It is important to also note that an unfamiliar odor is more easily detected and is more likely to cause complaints than a familiar one. This is because of the phenomenon known as odor fatigue, in which a person can become desensitized to almost any odor and recognition occurs only with an alteration in the intensity.

Typical odor sources of concern include wastewater treatment plants, sanitary landfills, composting facilities, recycling facilities, petroleum refineries, chemical manufacturing plants, painting operations, rendering plants, and food packaging plants (SMAQMD 2016a). The Sacramento Regional Wastewater Treatment Plant is the only potential significant odor source for the Project site, which is located approximately 2.8 miles to the north. SMAQMD has developed recommended screening distances for various odor-emitting land uses within which sensitive receptors should not be located. Based on SMAQMD guidance, a distance of 2 miles is recommended for wastewater treatment plants (SMAQMD 2009).

SENSITIVE RECEPTORS

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

The Merryhill Preschool is located approximately 900 feet from the northeast boundary of the Project site. Single-family residences are approximately 500 feet east of the Project site and directly south of the site.

3.2.3 Impacts and Mitigation Measures

METHODOLOGY

Regional and local criteria air pollutant emissions and associated impacts, as well as impacts from TACs, CO concentrations, and odors, were assessed in accordance with SMAQMD-recommended methodologies. The Project's emissions are compared to SMAQMD-adopted thresholds.

Criteria Air Pollutants and Precursors

Construction emissions of criteria air pollutants and precursors were calculated using the California Emissions Estimator Model (CalEEMod) Version 2016.3.2 computer program, as recommended by SMAQMD. CalEEMod defaults were adjusted with Project-specific data, such as construction activities and phasing, number of haul truck trips, amount of excavated material, and number of construction workers by phase. Where construction information was not available, CalEEMod default values were used. Construction of the Project would be completed over three phases lasting approximately 10 years total and may experience gaps in activity (see assumptions for Project construction activities in Appendix D). Timing of Project site buildout would ultimately be based on economic and market conditions. The level of health risk from exposure to construction-related criteria air pollutants and precursors was analyzed qualitatively.

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

Elk Grove General Plan Policy NR-4-1 requires that all new development projects that have the potential to result in substantial air quality impacts reduce such emissions by 15 percent compared to an unmitigated scenario. The development of an Air Quality Mitigation Plan (AQMP) can be used to implement this policy, which is also

recommended by SMAQMD. For projects that are included in the current SIP, SMAQMD also recommends a 15-percent reduction of ozone precursor emissions from mobile sources. In compliance with both General Plan policies and SMAQMD guidance, the Project has prepared an AQMP to define the processes by which emissions of ROG and NO_x would be reduced by 15 percent. The full text of the AQMP is included as Appendix G.

Operational emissions of criteria air pollutants and precursors were evaluated in accordance with SMAQMD's Recommended Guidance for Land Use Emission Reductions Version 4.0 for Operational Emissions, November 30, 2017. Emission modeling was conducted using CalEEMod, as recommended by SMAQMD. Overall, operational modeling was based on Project-specific information where available and CalEEMod defaults. Emissions estimates include long-term operational emissions of ozone precursors (i.e., ROG and NO_x) associated with mobile sources (i.e., trip generation) and stationary sources (e.g., areawide, generators, building energy consumption).

Helicopter emissions were calculated using Project-specific data and helicopter-specific emission factors provided in *Guidance on the Determination of Helicopter Emissions* (Rindlisbacher 2009) based on the engine size and type. Emissions from helicopter use are based on the number of landing and takeoff cycles, number of cruising hours per day, and the helicopter engine model type.

To estimate mobile-source emissions, CalEEMod was used in combination with Project-specific traffic data included in the study conducted for the Project (Fehr & Peers 2019). The Project's daily trip generation and daily VMT were estimated based on the operation of all proposed land uses during a typical weekday. Annual VMT was based on multiplying the daily VMT by a factor of 347, which takes into account reduced VMT on weekends and holidays (CARB n.d.:14). In accordance with SMAQMD guidance for a project for which a traffic study has been conducted, CalEEMod was used to estimate the Project's emissions without any incorporated emission-reducing measures (i.e., unmitigated emissions scenario) and the Project's emission with any incorporated emission-reducing measures (i.e., mitigated emissions scenario). CalEEMod uses vehicle emission factors from CARB's EMFAC2014 model. Although a newer version of CARB's EMFAC model is available (i.e., EMFAC2017), it has not yet been integrated into CalEEMod. Using EMFAC2017 would result in slightly lower mobile-source emissions related to changes in regulations. The mobile source emissions estimated for the Project are therefore more conservative. The emission factors from EMFAC2014 were adjusted in accordance with guidance from CARB to account for SAFE Rule Part One (CARB 2019c). Emission estimates from the two scenarios were compared to each other to achieve the 15-percent emission reduction target required for the Project. See the AQMP (Appendix G) for details regarding the establishment of the 15-percent reduction target and incorporated emission reduction measures.

For the unmitigated emissions scenario, the proposed land uses and sizes for the Project were input into CalEEMod, and adjustments were made for the default energy consumption factors and trip generation rates. Energy consumption factors were altered to account for anticipated electricity demand, natural gas demand associated with boilers at the proposed on-site central plant, and diesel consumption associated with backup generators at the proposed on-site central plant. Trip generation rates were derived from the traffic study conducted for the Project before the addition of VMT reduction measures. The results from this run would represent the unmitigated emissions of the Project without accounting for any VMT reduction measures included in the design of the Project (e.g., mix of land uses, transit, and bicycle facilities). Project-related emissions (mitigated emissions scenario) were estimated using the Project-specific VMT and daily trips provided by the traffic study with VMT-reducing measures (Fehr & Peers 2019) and adjusting CalEEMod defaults to estimate emissions from mobile sources. The Project would likely be built out by 2030, the assumed operational year of the Project for both emissions scenarios. See Appendix F for details regarding assumptions, inputs, and outputs for both the unmitigated and mitigated emissions scenarios.

Emissions from mobile sources, natural gas boilers, emergency generators, and area sources for both summer and winter were estimated using the applicable modules in CalEEMod. Emissions from consumer products and landscape maintenance activities also were estimated. Operational emissions from all sources were estimated for full buildout (i.e., 2030). Maximum daily emissions were estimated for both the peak summer day and peak winter day.

Health Risk and Odors

The level of health risk from exposure to construction- and operation-related TAC emissions was assessed qualitatively. This assessment was based on the proximity of TAC-generating construction activity to off-site sensitive

receptors, the number and types of diesel-powered construction equipment being used, and the duration of potential TAC exposure.

Impacts related to odors were also assessed qualitatively, based on proposed construction activities, equipment types and duration of use, overall construction schedule, and distance to nearby sensitive receptors. To evaluate an odor impact, SMAQMD recommends that the lead agency provide the buffer distance and a description of the land features and topography in the buffer zone that separates nearby sensitive receptors and the odor source (SMAQMD 2016a:7-3 and 7-4).

THRESHOLDS OF SIGNIFICANCE

SMAQMD has developed guidance for use by lead agencies when preparing CEQA documents and has adopted CEQA thresholds of significance for evaluating impacts on air quality (SMAQMD 2020b). CEQA-related air quality thresholds of significance are tied to achieving or maintaining attainment designations with the NAAQS and CAAQS that are scientifically substantiated, numerical concentrations of criteria air pollutants and precursors considered to be protective of human health.

In consideration of new and more stringent NAAQS and CAAQS adopted since 2000, SMAQMD identified numerical thresholds for project-generated emissions of criteria air pollutants and precursors that would determine whether a project's discrete emissions would result in a cumulative, regional contribution (i.e., significant) to the baseline nonattainment status of SMAQMD. SMAQMD's quantitative thresholds of significance for project-level CEQA evaluation that may be used to determine the extent to which a project's emissions of criteria air pollutants and precursors would contribute to regional degradation of ambient air quality within the SVAB.

Using federal and State guidance pertaining to TACs/HAPs, SMAQMD developed cancer risk and noncancer health hazard thresholds for TAC exposure. Unlike with criteria air pollutants, there is no known safe concentration levels of TACs. Moreover, TAC emissions contribute to the deterioration of localized air quality because of the dispersion characteristics of TACs; they do not cause regional-scale air quality impacts. The SMAQMD thresholds are designed to ensure that a source of TACs does not contribute to a localized, significant impact on existing or new receptors.

For these reasons, the following thresholds of significance are used to determine whether Project-generated emissions would produce a significant localized and/or regional air quality impact such that human health would be adversely affected.

Pursuant to Appendix G of the State CEQA Guidelines and SMAQMD recommendations, an air quality impact would be significant if implementation of the Project would:

- ▶ conflict with or obstruct implementation of the applicable air quality plan;
- ▶ cause construction-generated criteria air pollutant or precursor emissions to exceed the SMAQMD-recommended thresholds of 85 lb/day for NO_x, 80 lb/day or 14.6 tons/year for PM₁₀, or 82 lb/day or 15 tons/year for PM_{2.5}; in addition, all SMAQMD-recommended Basic Construction Emission Control Practices, also known as best management practices (BMPs), shall be implemented to minimize emissions of PM₁₀ and PM_{2.5}; otherwise, the threshold for both PM₁₀ and PM_{2.5} is 0 lb/day;
- ▶ result in a net increase in long-term operational criteria air pollutant or precursor emissions that exceed the SMAQMD-recommended thresholds of 65 lb/day for ROG and NO_x, 80 lb/day and 14.6 tons/year for PM₁₀, or 82 lb/day or 15 tons/year for PM_{2.5}; in addition, all SMAQMD-recommended Operational BMPs for Particulate Matter Emissions from Land Use Development Projects shall be implemented to minimize emissions of PM₁₀ and PM_{2.5}; otherwise, the threshold for both PM₁₀ and PM_{2.5} is 0 lb/day;
- ▶ result in long-term operational local mobile-source CO emissions that would violate or contribute substantially to concentrations that exceed the 1-hour CAAQS of 20 parts per million (ppm) or the 8-hour CAAQS of 9 ppm;
- ▶ expose sensitive receptors to a substantial incremental increase in TAC emissions that exceed 10 in one million for carcinogenic risk (i.e., the risk of contracting cancer) and/or a noncarcinogenic hazard index of 1.0 or greater; or

- ▶ result in other emissions (such as those leading to odors) that would adversely affect a substantial number of people.

IMPACTS NOT DISCUSSED FURTHER

Localized emissions of mobile-source CO are not included in this analysis. The SVAB has been in attainment for CO for several years, and this pollutant is less of a concern because operational activities are unlikely to generate substantial CO emissions. As discussed in SMAQMD's CEQA Guide, CO emissions are "predominately generated in the form of mobile-source exhaust from vehicle trips.... These vehicle trips occur throughout a paved network of roads, and therefore, associated exhaust emissions of [CO] are not generated in a single location where high concentrations could be formed" (SMAQMD 2020b:4-7). A CO impact is not anticipated unless an intersection experiences more than 31,600 vehicles per hour. Considering the Project would result in a maximum 15,298 daily trips, the number of vehicles traveling through intersections would be far fewer and would not exceed 31,600 vehicles per hour. Additionally, the Project would include 1 to 1.5 helicopter trips per week, which would not generate a significant amount of CO. For these reasons, localized mobile-source CO emissions associated with the Project are not anticipated to exceed SMAQMD's thresholds and therefore are not discussed further in this analysis.

ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Impact 3.2-1: Conflict with or Obstruct Implementation of an Applicable Air Quality Plan

SMAQMD and other air districts in the SVAB developed air quality plans to enable the region to achieve attainment of the federal 8-hour ozone standard and the California 1-hour and 8-hour ozone standards. These air quality plans are based on an inventory of existing emission sources, as well as projections about the future level of land use development in the SVAB. Because the levels of growth associated with the Project were accounted for in these projections of emissions-generating activity, the Project would be consistent with applicable air quality plans. This impact would be **less than significant**.

SMAQMD and other air districts with jurisdiction in the SVAB developed the *Sacramento Regional 8-Hour Ozone Attainment and Reasonable Further Progress Plan (2017 SIP Revisions)* to address attainment of the 8-hour NAAQS for ozone (El Dorado County Air Quality Management District et al. 2017). Similarly, the *2015 Triennial Progress Report* addresses the attainment of the 1-hour and 8-hour CAAQS for ozone (SMAQMD 2016b). A project in the SVAB has the potential to conflict with the *2017 SIP Revisions* if the level of ozone precursor emissions associated with the project would be greater than the projection used in the *2017 SIP Revisions*. Regional emission inventories in the *2017 SIP Revisions* are developed based on anticipated growth in population, housing, and other parameters that are included in SACOG's 2016 MTP/SCS.

In general, a land use development project or plan would not interfere with the applicable air quality plans if it is consistent with the growth assumptions used to form the applicable air quality plans. Impacts on regional air quality are controlled through policies and provisions of SMAQMD, the *2017 SIP Revisions*, and the *2015 Triennial Progress Report*.

The 2020 MTP/SCS is based on all general plans in the region and is constrained based upon a set of growth assumptions determined by SACOG. The 2020 MTP/SCS is a 20-year plan that lays out a transportation investment and land use strategy for the Sacramento region. The MTP/SCS provides a strategy for tying transportation funding to future land use patterns but is not a land use plan. Because SACOG's 2020 MTP/SCS must demonstrate consistency with regional air quality planning efforts, it is consistent with both the *2017 SIP Revisions* and the *2015 Triennial Progress Report*.

As required in the AB 900 application, the Project must demonstrate consistency with the MTP/SCS. At the time the AB 900 application process was conducted, SACOG's current MTP/SCS was its 2016 version. Since approval of the Project's AB 900 application, SACOG adopted its 2020 MTP/SCS. Therefore, a comparison between these two iterations of the SACOG MTP/SCS is included here.

The Project area is identified in SACOG's 2016 MTP/SCS as an Established Community Type in the City, which forecasted about 1,800 new housing units and 8,135 new employees in Elk Grove by 2036, with a range of residential and employment uses, including office, industrial, and public development (SACOG 2016:Appendix E-3). The Project would include the addition of 150 new housing units and 4,000 total employees by 2030, accounting for approximately 8 percent of total new housing units and approximately 49 percent of total new employees assumed in the Established Community Type in Elk Grove. The 2020 MTP/SCS also includes the Project area in the Established Community Type. The 2020 MTP/SCS forecasts about 6,290 new housing units and 8,500 new employees in the Established Community Type in the City by 2040. In comparison to the 2020 MTP/SCS, the Project would account for approximately 2 percent of total new housing units and approximately 47 percent of total new employees in the Established Community Type in Elk Grove by 2040. Hospitals and medical centers are generally considered public and office uses in SACOG's forecast; therefore, the Project is consistent with the land use assumptions for the Established Community Type in the 2016 MTP/SCS (Lizon 2019) and, therefore, also consistent with the *2017 SIP Revisions*. Although this Project was not proposed when the 2016 MTP/SCS was prepared, the 2016 MTP/SCS provided for a new hospital would be constructed and there would be an increase in medical employment in Elk Grove because of the size of the City and the population growth expected. The Project remains consistent with the 2020 MTP/SCS. Therefore, the Project would be consistent with all applicable air quality plans. This impact would be **less than significant**.

Mitigation Measures

No mitigation is required.

Impact 3.2-2: Cause Construction-Generated Criteria Air Pollutant or Precursor Emissions to Exceed SMAQMD Thresholds

Construction-related activities would result in Project-generated emissions of ROG, NO_x, PM₁₀, and PM_{2.5} from site preparation, off-road equipment, material and equipment delivery trips, worker commute trips, building construction, and other miscellaneous activities. Construction activities would result in mass emissions of NO_x, PM₁₀, and PM_{2.5} that exceed SMAQMD's thresholds. Therefore, construction-generated emissions of criteria air pollutants and ozone precursors may contribute to the existing nonattainment status of the SVAB with respect to the NAAQS and CAAQS for ozone. Implementation of Mitigation Measures 3.2.2-a and 3.2.2-b would reduce this impact to a **less-than-significant** level.

Project construction activities during each of the three construction phases would result in emissions of ROG, NO_x, PM₁₀, and PM_{2.5} from demolition, site preparation, excavation, off-road equipment, material delivery, worker commute trips, building construction, asphalt paving, and application of architectural coatings. During demolition, building waste would be hauled off-site. Site preparation and excavation phases would involve the import and export of soil. Fugitive dust emissions of PM₁₀ and PM_{2.5} are associated primarily with site preparation and grading and vary as a function of soil silt content, soil moisture, wind speed, acreage of disturbance, and VMT on and off the site. Emissions of the ozone precursors ROG and NO_x are associated primarily with construction equipment and on-road mobile exhaust. Paving and the application of architectural coatings may result in off-gas emissions of ROG. PM₁₀ and PM_{2.5} are also contained in vehicle exhaust.

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

Reported emissions represent maximum daily and annual emissions under all three phases of Project construction. For specific assumptions and modeling inputs, refer to Appendix F.

Table 3.2-5 summarizes the modeled maximum daily emissions from construction activities by year over the buildout period (assumed to end in 2029).

Table 3.2-5 Unmitigated Construction Emissions of Criteria Air Pollutant and Ozone Precursors

Construction Year	ROG (lb/day)	NO _x (lb/day)	PM ₁₀		PM _{2.5}	
			lb/day	tons/year	lb/day	tons/year
Year 1	13.7	165.3	34.1	2.8	16.7	1.2
Year 2	20.5	103.6	13.6	0.9	7.3	0.4
Year 3	16.5	25.7	5.3	0.6	1.6	0.2
Year 4	5.1	52.0	23.6	0.2	12.6	0.1
Year 5	28.8	96.4	42.8	1.3	23.7	0.6
Year 6	23.7	70.1	24.8	1.4	12.2	0.8
Year 7	2.2	20.5	1.6	<0.1	0.9	<0.1
Year 8	8.5	54.2	39.2	0.9	22.1	0.5
Year 9	14.9	26.5	19.4	0.3	11.0	0.1
Year 10	1.5	13.5	6.6	0.4	3.4	0.2
SMAQMD thresholds of significance	NA	85	0	14.6	0	15

Notes: ROG = reactive organic gas; NO_x = oxides of nitrogen; PM₁₀ = respirable particulate matter; PM_{2.5} = fine particulate matter; lb/day = pounds per day; SMAQMD = Sacramento Metropolitan Air Quality Management District.

Bold values indicate exceedance of threshold.

Source: Modeling conducted by Ascent Environmental in 2020

As shown in Table 3.2-5, construction activities associated with the Project may result in emissions of NO_x, PM₁₀, and PM_{2.5} that exceed SMAQMD's threshold of significance for each pollutant.

The addition of ROG and NO_x, which are precursors to ozone, may result in an increase in ambient concentrations of ozone in the SVAB and, moreover, increase the likelihood that ambient concentrations exceed the CAAQS and NAAQS. As summarized in the "Environmental Setting" section above, human exposure to ozone may cause acute and chronic health impacts, including coughing, pulmonary distress, lung inflammation, shortness of breath, and permanent lung impairment. However, it would be misleading to correlate the levels of criteria air pollutant and precursor emissions associated with implementation of the Project to specific health outcomes for sensitive receptors. Although the description of effects noted above may manifest in the recipient receptors, actual effects on individuals depend on individual factors, such as life stage (e.g., older adults are more sensitive), preexisting cardiovascular or respiratory diseases, and genetic polymorphisms. Even armed with this type of specific medical information (which is confidential to the individual), there are wide ranges of potential outcomes from exposure to ozone precursors and particulates, from no effect to the effects described above. Therefore, other than determining the types of health effects that may occur, it would be speculative to more specifically correlate exposure to criteria air pollutant and precursors from this Project to specific health outcomes for sensitive receptors. When evaluating emissions of air pollutants against SMAQMD's thresholds, it is conservatively possible that health complications associated with ozone may be exacerbated by construction-generated emissions.

Because of the nonattainment status of the SVAB for ozone, construction activities associated with Project implementation may result in adverse air quality impacts to existing surrounding land uses and may contribute to the existing adverse air quality condition in the SVAB. Based on the modeling described above, it is possible that Project implementation may exceed the NO_x, PM₁₀, and PM_{2.5} thresholds during the construction phase. Therefore, construction emissions may contribute to the existing nonattainment condition in the SVAB with respect to the CAAQS for PM₁₀, NAAQS for PM_{2.5}, and CAAQS and NAAQS for ozone and may therefore increase the potential for adverse health impacts from exposure to ozone. For this reason, this impact would be significant. However, incorporation of the mitigation measures listed below would reduce this impact to a less-than-significant level.

As further described in Chapter 2, "Project Description," off-site infrastructure improvements for the Project would include an emergency left-turn pocket on Elk Grove Boulevard, Sacramento Municipal Utility District distribution and

substation site improvements, implementation of roadway improvements required for compliance with General Plan Policy MOB 1-3, and wastewater conveyance facilities improvements along Riparian Drive. Criteria air pollutant and ozone precursor emissions would be generated from the use of heavy-duty off-road construction equipment and vehicle use during the worker commute. These improvements would result in maximum daily emissions of 4 lb/day for ROG, 28 lb/day for NO_x, 12 lb/day for PM₁₀, and 4 lb/day for PM_{2.5} and would occur during the first year of construction at the same time as on-site improvements. Annual emissions of PM₁₀ would be 1.5 tons/year, and those of PM_{2.5} would be 0.5 ton/year. These emissions are included in the emissions summary for the year 2020 in Table 3.2-5, above. Maximum daily emissions and annual emissions associated with off-site improvements would contribute to the exceedance of SMAQMD's thresholds.

Implementation of Mitigation Measure 3.3-2a would require the Project to apply BMPs for fugitive dust emissions. This would change the SMAQMD significance threshold from 0 lb/day for PM₁₀ and PM_{2.5} to 80 lb/day and 82 lb/day for PM₁₀ and PM_{2.5}, respectively. Based on the construction modeling conducted and shown in Table 3.2-5, maximum daily emissions of PM₁₀ and PM_{2.5} would not exceed these thresholds. Implementation of Mitigation Measure 3.2-2a would reduce NO_x emissions from construction activity by 10 percent. However, this would not reduce the Project's maximum daily construction-related NO_x emissions below the SMAQMD threshold of 85 lb/day.

The required mitigation fee under Mitigation Measure 3.2-2b would be assessed and used to offset construction-related NO_x emissions by providing funding for SMAQMD to implement emission reduction projects in the SVAB. As described by SMAQMD, all mitigation fees must be paid before issuance of grading permits by the City Public Works Department, to ensure that emissions reductions for the Project will be obtained. Accordingly, the off-site mitigation fee program will reduce construction-generated mass emissions of NO_x to a less-than-significant level (SMAQMD 2020b:3-10). Because the Project would be required to contribute to the off-site mitigation fee programs, construction-generated NO_x levels would be reduced to a **less-than-significant** level and would be consistent with General Plan Policy NR-4-8.

Mitigation Measures

Mitigation Measure 3.2-2a: Implement Construction Emission Control Practices

The following basic and enhanced emission control practices recommended by SMAQMD for the reduction of NO_x, PM₁₀, and PM_{2.5} shall be implemented during construction and included in Project improvement plans. The City Development Services Department will verify compliance with these measures identified below.

Basic Construction Emission Control Practices

- ▶ Water all exposed surfaces two times daily. Exposed surfaces include, but are not limited to, soil piles, graded areas, unpaved parking areas, staging areas, and access roads.
- ▶ Cover or maintain at least 2 feet of freeboard 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 shall be covered.
- ▶ Use wet power vacuum street sweepers to remove any visible trackout mud or dirt onto adjacent public roads at least once a day. Use of dry power sweeping is prohibited.
- ▶ Limit vehicle speeds on unpaved roads to 15 miles per hour.
- ▶ Complete the paving of all roadways, driveways, sidewalks, and parking lots to be paved 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 by reducing the time of idling to 5 minutes (California Code of Regulations, Title 13, Sections 2449[d][3] and 2485). Provide clear signage that posts this requirement for workers at the entrances to the site.
- ▶ Provide current certificate(s) of compliance for CARB's In-Use Off-Road Diesel-Fueled Fleets Regulation (California Code of Regulations, Title 13, Sections 2449 and 2449.1). For more information, contact CARB at 877-593-6677, doors@arb.ca.gov, or www.arb.ca.gov/doors/compliance_cert1.html.

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

Enhanced On-Site Exhaust Controls

- ▶ The Project Applicant, or its designee, shall provide a plan for approval by SMAQMD that demonstrates that the heavy-duty off-road vehicles (50 horsepower or more) to be used 8 hours or more during Project construction will achieve a Project-wide fleet average 10-percent NO_x reduction compared to the most recent CARB fleet average. Acceptable options for reducing emissions may include use of cleaner engines, low-emission diesel products, alternative fuels, engine retrofit technology, after-treatment products, and/or other options as they become available. The plan shall have two components: an initial report submitted before construction and a final report submitted at the completion.
 - Submit the initial report at least 4 business days before construction activity begins using SMAQMD's Construction Mitigation Tool (<http://www.airquality.org/businesses/ceqa-land-use-planning/mitigation>).
 - Provide Project information and construction company information.
 - Include the equipment type, horsepower rating, engine model year, projected hours of use, and CARB equipment identification number for each piece of equipment in the plan. Incorporate all owned, leased, and subcontracted equipment to be used.
 - Submit the final report at the end of the job, phase, or calendar year, as prearranged with SMAQMD staff and documented in the approval letter, to demonstrate continued Project compliance.
- ▶ SMAQMD may conduct periodic site inspections to determine compliance. Nothing in this mitigation shall supersede other air district, State, or federal rules or regulations.
- ▶ On-site exhaust controls identified above will sunset on January 1, 2028, when full implementation of the CARB In-Use Off-Road Regulation is expected.

Mitigation Measure 3.2-2b: Pay Off-Site Construction Mitigation Fees

Because modeled construction emissions of NO_x would not be reduced below SMAQMD's significance threshold with the implementation of its enhanced exhaust control measures, the Project Applicant must pay a mitigation fee into SMAQMD's off-site mitigation program. By paying the appropriate off-site mitigation fee, construction-generated emissions of NO_x will be reduced to a less-than-significant level. The fee calculation to offset daily NO_x emissions is based on the SMAQMD-determined cost to reduce 1 ton of NO_x (currently \$30,000 per ton but subject to change in future years) and an administrative fee of 5 percent.

The Project Applicant, or its designee, shall pay the mitigation and administrative fees in full before the City Development Services Department issues any grading permits that would allow activity that would exceed SMAQMD's threshold. An alternative payment plan may be negotiated by the Project Applicant, or its designee, based on the timing of construction phases that are expected to exceed SMAQMD's threshold of significance. Any alternative payment plan must be acceptable to SMAQMD and agreed upon in writing before issuance of any grading permits by the City.

In coordination with the City and SMAQMD, the Project Applicant, or its designee, may reanalyze construction NO_x emissions from the Project before starting construction to update the estimated Project emissions and associated mitigation fees, based on Project-specific information or emissions modeling software available at that time. If an updated analysis is performed, it must be submitted to the City for approval prior to issuance of any grading permits to ensure compliance with this mitigation measure. If construction NO_x emissions are reanalyzed, the following requirements apply:

- ▶ The analysis must be conducted using SMAQMD-approved emission model(s) and the fee rates published at the time of reanalysis.
- ▶ The analysis may include on-site measures to reduce construction emissions if deemed feasible by the City.

Significance after Mitigation

Less than significant.

Impact 3.2-3: Result in a Net Increase in Long-Term Operational Criteria Air Pollutant and Precursor Emissions That Exceed SMAQMD-Recommended Thresholds

Operation of the Project would generate emissions of ROG and NO_x, which are precursors to ozone, and PM₁₀ and PM_{2.5}. ROG, NO_x, and PM₁₀ emissions would exceed the applicable mass emission thresholds adopted by SMAQMD. Although implementation of available mitigation measures would reduce operational emissions to the extent feasible, the Project's maximum daily emissions of ROG, NO_x, and PM₁₀ and annual emissions of PM₁₀ would continue to exceed SMAQMD thresholds. Thus, long-term operational emissions of ROG, NO_x, and PM₁₀ may contribute substantially to the nonattainment status of the SVAB with respect to the NAAQS and CAAQS for ozone and the CAAQS for PM₁₀. Even with implementation of Mitigation Measures 3.2-3a, 3.2-3b, and 3.2-3c, this impact would be **significant and unavoidable**.

Project operation would result in the generation of long-term operational emissions of ROG, NO_x, PM₁₀, and PM_{2.5} from mobile, stationary, and areawide sources. Mobile-source emissions of criteria air pollutants and precursors would result from vehicle trips generated by students, visitors, and employees and other associated vehicle trips (e.g., delivery of supplies). On-site stationary sources would be associated with the proposed central plant. Specifically, the central plant would include one natural gas-fired boiler and four diesel-powered emergency generators. The central plant would require 118,924 million British thermal units of natural gas and 89,376 gallons of diesel fuel, for backup emergency power, per year and would provide campus buildings with space and water heating. New stationary sources associated with the Project would be subject to SMAQMD permitting requirements pursuant to Rule 202 (New Source Review). Areawide sources would include the use of landscaping equipment and other small equipment, the periodic application of architectural coatings, and generation of ROG from the use of consumer products.

Table 3.2-6 summarizes the maximum daily operation-related emissions of criteria air pollutants and ozone precursors during the winter and summer seasons at full buildout in 2030 from mobile sources, stationary sources (i.e., natural gas boiler, emergency diesel generators), and area sources. Table 3.2-7 shows the annual operational emissions of criteria air pollutants and ozone precursors at full buildout. This is consistent with the AQMP prepared for the Project, which calculates emission reductions from mitigation in tons/year. Emissions were calculated in CalEEMod based on proposed land uses and mobile sources without the Project's Transportation Demand Management program (the reader is referred to Section 3.14, "Transportation," for further discussion). As shown in Table 3.2-6, operation-related activities would result in Project-generated daily emissions of ROG, NO_x, and PM₁₀ that exceed the SMAQMD-recommended thresholds of significance. Because the Project-generated emissions would exceed operational thresholds of significance, an AQMP has been prepared and is provided as Appendix G.

As shown in Tables 3.2-6 and 3.2-7, operation-related activities would result in Project-generated daily emissions of ROG, NO_x, and PM₁₀ that exceed the SMAQMD-recommended thresholds of significance. As discussed in the "Thresholds of Significance" section, SMAQMD developed these thresholds in consideration of achieving and maintaining the NAAQS and CAAQS, which represent concentration limits of criteria air pollutants and precursors needed to adequately protect human health. Therefore, as detailed above, the Project's contribution to operational criteria air pollutant and precursor emissions may result in greater acute or chronic health impacts compared to existing conditions.

Table 3.2-6 Unmitigated Maximum Daily Operational Emissions of Criteria Air Pollutant and Ozone Precursors at Full Buildout (Assumed 2030)

Emission Source	Maximum Daily Emissions (lb/day)			
	ROG	NO _x	PM ₁₀	PM _{2.5}
Summer				
Area	31.2	0.1	0.1	0.1
Energy ¹	5.3	13.4	2.9	2.9
Mobile	18.6	82.0	208.2	56.3
Helicopter	22.1	23.1	0.7	NA
Total summer daily emissions	77.2	118.7	211.9	59.3
Winter				
Area	31.2	0.1	0.1	0.1
Energy ¹	5.3	13.4	2.9	2.9
Mobile	16.8	91.6	208.2	56.3
Helicopter	22.1	23.1	0.7	NA
Total winter daily emissions	75.3	128.3	211.3	59.3
SMAQMD thresholds of significance	65	65	80	82
Exceeds threshold?	Yes	Yes	Yes	No

Notes: ROG = reactive organic gas; NO_x = oxides of nitrogen; PM₁₀ = respirable particulate matter; PM_{2.5} = fine particulate matter; lb/day = pounds per day; SMAQMD = Sacramento Metropolitan Air Quality Management District; NA = not applicable.

Totals may not sum exactly because of rounding.

¹ Stationary source emissions associated with natural gas boilers and backup diesel generators are included in energy emissions and were modeled using the stationary source module in CalEEMod.

Source: Modeling conducted by Ascent Environmental in 2020

Table 3.2-7 Unmitigated Annual Operational Emissions of Criteria Air Pollutant and Ozone Precursors at Full Buildout (Assumed 2030)

Emission Source	Annual Emissions (tons/year)			
	ROG	NO _x	PM ₁₀	PM _{2.5}
Area	5.7	<0.1	0.1	0.1
Energy	0.5	1.1	0.5	0.5
Mobile	2.2	11.4	26.2	7.1
Helicopter	0.9	0.9	<0.1	NA
Total	9.2	13.4	26.7	7.6
SMAQMD thresholds of significance	NA	NA	14.6	15
Exceeds threshold?	NA	NA	Yes	No

Notes: ROG = reactive organic gas; NO_x = oxides of nitrogen; PM₁₀ = respirable particulate matter; PM_{2.5} = fine particulate matter; tons/year = tons per year; SMAQMD = Sacramento Metropolitan Air Quality Management District; NA = not applicable.

Totals may not sum exactly because of rounding.

Source: Modeling conducted by Ascent Environmental in 2020

Mitigation Measures 3.2-3a, 3.2-3b, and 3.2-3c are available to reduce the amount of Project-generated daily emissions of ROG, NO_x, and PM₁₀ that exceed the SMAQMD-recommended thresholds of significance. These mitigation measures, and the extent to which they reduce potential impacts, are discussed as follows.

Implementation of Mitigation Measure 3.2-3a, the Transportation Demand Management (TDM) measures identified in Mitigation Measure 3.14-1, would result in a 30-percent reduction in Project-generated VMT as identified in the Project's AB 900 application (see Appendix C). A 30-percent reduction in VMT would result in a 30-percent reduction in mobile-source emissions of ROG and NO_x, thus achieving the provisions of the AQMP. Without the TDM measures, ROG emissions would be 2.2 tons/year, and NO_x emissions would be 11.4 tons/year. With the TDM measures, ROG emissions would be reduced to 1.5 tons/year, and NO_x emissions would be reduced to 8.0 tons/year. Although SMAQMD does not have annual thresholds of significance for ROG and NO_x, equivalent daily emissions would continue to exceed the daily thresholds for ROG and NO_x.

Implementation of Mitigation Measure 3.2-3b would require installing 84 Level 2 electric vehicle charging stations serving 166 parking spaces as identified in the Project's AB 900 application (see Appendix C). The reduction in criteria air pollutant and precursor emissions associated with increased electric vehicle VMT and decreased gas-powered VMT would result in a reduction of ROG by 0.5 ton/year, NO_x by 1.5 tons/year, PM₁₀ by 0.4 ton/year, and PM_{2.5} by 0.2 ton/year.

Mitigation Measures 3.2-3a and 3.2-3b represent all available and feasible mitigation that the Project may implement to reduce mobile source emissions. Even with a 30-percent reduction in ROG, NO_x, PM₁₀, and PM_{2.5} from mobile sources associated with the TDM measures, the Project's maximum daily emissions of ROG, NO_x, and PM₁₀ and annual emissions of PM₁₀ from area sources, energy, and mobile sources would continue to exceed SMAQMD's thresholds of significance. A summary of the Project's emissions with Mitigation Measures 3.2-3a and 3.2-3b is presented in Table 3.2-8.

Table 3.2-8 Mitigated Annual Operational Emissions of Criteria Air Pollutant and Ozone Precursors at Full Buildout (2030)

Emission Source	Annual Emissions (tons/year)			
	ROG	NO _x	PM ₁₀	PM _{2.5}
Area	5.7	<0.1	0.1	0.1
Energy	0.5	1.1	0.5	0.5
Mobile	1.1	6.5	17.9	4.8
Helicopter	0.9	0.9	<0.1	NA
Total	8.1	8.5	18.5	5.3
SMAQMD thresholds of significance	NA	NA	14.6	15
Exceeds threshold?	NA	NA	Yes	No

Notes: ROG = reactive organic gas; NO_x = oxides of nitrogen; PM₁₀ = respirable particulate matter; PM_{2.5} = fine particulate matter; tons/year = tons per year; SMAQMD = Sacramento Metropolitan Air Quality Management District; NA = not applicable.

Totals may not sum exactly because of rounding.

Source: Modeling conducted by Ascent Environmental in 2020

To further reduce the Project's total ROG, NO_x, and PM₁₀ emissions, Mitigation Measure 3.2-3c requires the installation of electrical receptacles on building exteriors to encourage the use of electricity-powered landscaping equipment, rather than fossil fuel-powered equipment. Mitigation Measure 3.2-3c also places limits on the volatile organic compound content of architectural coatings associated with the Project.

Implementation of Mitigation Measures 3.2-3a, 3.2-3b, and 3.2-3c would reduce ROG, NO_x, PM₁₀, and PM_{2.5} emissions from mobile and area sources. With these measures, the Project's maximum daily ROG, NO_x, and PM₁₀ emissions would continue to exceed SMAQMD thresholds, as shown in Table 3.2-9, below. Note that the tons/year emission reductions from the mitigation measures have been converted into lb/day and shown in Table 3.2-9, below, to compare emissions to the adopted thresholds.

Table 3.2-9 Mitigated Maximum Daily Operational Emissions of Criteria Air Pollutant and Ozone Precursors at Full Buildout (2030)

Emission Source	Maximum Daily Emissions (lb/day)			
	ROG	NO _x	PM ₁₀	PM _{2.5}
Area	29.1	0	0	0
Energy	5.3	13.4	2.9	2.9
Mobile	13.0	57.4	145.8	39.4
Helicopter	22.1	23.1	0.0	NA
Total	69.5	93.9	149.4	42.4
SMAQMD thresholds of significance	65	65	80	82
Exceeds threshold?	Yes	Yes	Yes	No

Notes: ROG = reactive organic gas; NO_x = oxides of nitrogen; PM₁₀ = respirable particulate matter; PM_{2.5} = fine particulate matter; lb/day = pounds per day; SMAQMD = Sacramento Metropolitan Air Quality Management District; NA = not applicable.

Totals may not sum exactly because of rounding.

Source: Modeling conducted by Ascent Environmental in 2020

Mitigation Measures

Mitigation Measure 3.2-3a: Implement Mitigation Measure 3.14-1, Transportation Demand Management Plan

Mitigation Measure 3.2-3b: Implement Mitigation Measure 3.7-1a, Reduce GHG Emissions On-Site

Mitigation Measure 3.2-3c: Reduce Area-Source Emissions On-Site

The Project Applicant shall implement the following measures to reduce area-source emissions:

- ▶ All landscape equipment will be electric. Design features that would support the use of electric landscape equipment may include, but will not be limited to installing multiple electrical receptacles on the exterior of all Project buildings that would be accessible for purposes of charging or powering electric landscaping equipment and provide an alternative to using fossil fuel-powered generators.
- ▶ All architectural coatings (e.g., paint) used in Project buildings and parking areas will not exceed a volatile organic compound content of 50 grams per liter.

Prior to issuance of plan approval or building permit by the California Office of Statewide Health Planning and Development Facilities Development Division, the Project Applicant shall submit documentation of compliance with this measure to the City Development Services Department to verify compliance with this measure. Documentation of compliance with this measure shall be provided to the City Development Services Department prior to issuance of building permits by the City for other buildings not under the jurisdiction of the California Office of Statewide Health Planning and Development Facilities Development Division.

Significance after Mitigation

Although implementation of available mitigation measures would reduce operational emissions to the extent feasible, the Project's maximum daily ROG, NO_x, and PM₁₀ emissions and annual PM₁₀ emissions would continue to exceed SMAQMD's thresholds. Thus, Project operations may contribute to the nonattainment status of the SVAB with respect to the NAAQS and CAAQS. This impact would be **significant and unavoidable**.

Impact 3.2-4: Expose Sensitive Receptors to Substantial Increases in TAC Emissions

Construction of Project buildings and off-site improvements and the addition of operational mobile sources to existing roadways would not result in the exposure of sensitive receptors to an incremental increase in cancer risk greater than 10 in 1 million or a hazard index greater than 1. However, should multiple new stationary sources associated with the proposed central plant be sited near one another, the combined emissions may result in higher levels of TAC concentrations. Additionally, some Project buildings associated with commercial, hospital, and educational uses would include truck loading/unloading facilities near residences, student housing, and child daycare, which may result in the exposure of these sensitive receptors to a level of cancer risk greater than 10 in 1 million. Implementation of Mitigation Measure 3.2-4 would ensure that a sensitive receptor (e.g., residences) and a truck loading/unloading facility would not be located within 1,000 feet of each other, which is the CARB-recommended setback distance (CARB 2005:15), unless a site-specific health risk assessment (HRA) shows that the associated level of cancer risk at the sensitive receptors would not exceed 10 in 1 million. Therefore, sensitive receptors would not be exposed to TAC concentrations that exceed 10 in 1 million. This impact would be reduced to **less than significant** with mitigation incorporated.

The exposure of sensitive receptors to TAC emissions from Project-generated construction and operational sources are discussed separately below. The TAC that is the focus of the construction analysis is diesel PM because it is known that diesel PM would be emitted during Project construction. Operational TACs would include those associated with the equipment included in the proposed central plant (e.g., formaldehyde, hydrogen chloride, cadmium, mercury), as well as diesel PM from mobile sources and the diesel backup generators. TAC emissions from construction and operation are discussed separately below. As discussed above in the "Environmental Setting" section, the existing cancer risk from vehicle traffic on I-5 is 60 chances in one million, and the PM_{2.5} concentration is 2.1 micrograms per cubic meter at the Project site. Project-generated TACs would be additive to these existing concentrations and would combine with existing sources of TACs.

Construction

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

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

Based on the emissions modeling conducted, maximum daily emissions of exhaust PM₁₀, considered a surrogate for diesel PM, would not exceed 5 lb/day during the most intense season of construction activity. Furthermore, even during the most intense year of construction, emissions of diesel PM would be generated from different locations on the Project site rather than a single location because different types of construction activities (e.g., site preparation, building construction) would not occur at the same place at the same time. Consequently, it is important to consider that the use of off-road heavy-duty diesel equipment would be limited to the construction phase of 10 years. As construction progresses, activity intensity and duration would vary throughout the site. For this reason, no single existing or future receptor (i.e., as part of the Project) would be exposed to construction-related emissions of diesel

PM for extended periods. Although the Project would increase health risk exposure from construction activities, construction would be intermittent and temporary and would not contribute to long-term health risks.

Regarding existing off-site receptors, existing residences are located adjacent to the Project area to the south and east along West Taron Drive and Ruddy Duck Way, as well as approximately 500 feet from the northeast portion of the Project site, and Merryhill Preschool is located approximately 900 feet northeast of the Project site. Studies show that diesel PM is highly dispersive, extending hundreds of feet from the source. However, the results of one study showed that concentrations of diesel PM generated by freeway traffic decreased by approximately 70 percent at 500 feet from the source (Zhu et al. 2002). Receptors must be near emission sources to result in the possibility of exposure to concentrations of concern and must be near the sources for a long duration of time. Given the locations of existing receptors relative to potential diesel PM emission sources, and given the temporary and intermittent nature of construction activities within specific locations on the Project site (i.e., construction does not occur in any one part of the Project site during the 10-year buildout period), the dose of any exposure to diesel PM of any one receptor would be limited.

The Project would require off-site infrastructure improvements to the Sacramento Municipal Utility District substation located near the southeast corner of Franklin Boulevard and Elk Grove Boulevard, an emergency left-turn pocket on Elk Grove Boulevard, implementation of roadway improvements required for compliance with General Plan Policy MOB 1-3, and underground electrical distribution facility upgrades between the substation and the Project site. Wastewater pipeline improvements would also be required along Riparian Drive. Diesel PM would be generated from the use of heavy-duty off-road construction equipment and vehicle use during worker commute throughout the approximate 2.75 miles of linear infrastructure improvements. Based on the emissions modeling conducted, maximum daily emissions of exhaust PM₁₀, considered a surrogate for diesel PM, would not exceed 2 lb/day. Because of the linear nature of the off-site improvements, emissions of diesel PM would be generated from different locations rather than a single location. For this reason, no single existing receptor would be exposed to construction-related emissions of diesel PM for extended periods. Additionally, upgrades to the electrical and wastewater infrastructure associated with Project construction would not result in any new operational TAC sources.

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

Operation of New Permitted Sources

SMAQMD is responsible for the control of TACs generated by stationary sources within Sacramento County, including any new stationary sources of TACs developed under the Project, such as natural gas boilers and backup diesel generators at the central plant building. As part of the permitting process for new stationary sources of emissions, pursuant to SMAQMD Regulation 2 (Permits) and Rule 202 (New Source Review), SMAQMD reviews the permit application and determines whether the source would have the potential to generate levels of TACs that would expose the local population to an incremental increase in cancer risk that exceeds 10 in 1 million or a noncarcinogenic Hazard Index of 1 for the maximally exposed individual. If either of these criteria is exceeded, then SMAQMD requires that the source incorporate Toxic Best Available Control Technology and/or limit its operations to ensure that these criteria would not be exceeded. As a result, operation of any single new stationary source would not result in exposure of sensitive receptors to levels of health risk that would exceed SMAQMD's thresholds of significance. However, if multiple new stationary sources are sited near one another, the combined emissions may result in higher levels of TAC concentrations.

Truck Activity Areas

Development of the hospital, commercial, and educational land uses would include facilities with loading docks and loading areas where diesel PM-emitting trucks would be active on a regular basis. Some of this activity may include trucks with transport refrigeration units (TRUs), which are typically diesel-powered. Although TRUs have relatively small diesel-powered engines, in the normal course of business, their emissions can pose a health risk to nearby

receptors (CARB 2005:11). In its *Air Quality and Land Use Handbook*, CARB recommends a setback distance of 1,000 feet between sensitive receptors and a truck distribution center that accommodates more than 100 trucks per day or more than 40 trucks with operating TRUs per day, or where TRU unit operations exceed 300 hours per week (CARB 2005:15). Development of new truck loading docks would occur, but specific daily operational emissions levels and the exact location in relation to existing or future planned sensitive receptors (i.e., part of this Project) are unknown except for loading docks associated with the hospital, which would be located more than 500 feet from existing and future planned sensitive receptors. However, because loading docks may be used for other land use types in the Project area, depending on the location and operation of new trucking facilities, these sources may result in substantial TAC concentrations at sensitive receptors.

Project-Generated Mobile Sources on Existing Roadways

In accordance with available guidance from SMAQMD and CARB, freeways or urban roadways experiencing 100,000 or more vehicles per day may expose sensitive receptors to adverse health risks. This analysis uses 100,000 or more vehicles per day as a threshold to gauge whether the Project's contribution to existing roadways would be significant. Based on the traffic study conducted for the Project's AB 900 application, the Project would result in a maximum of 15,298 daily trips (i.e., new TAC sources) (Appendix C and Fehr & Peers 2019). Because the Project site is located adjacent to I-5, it is likely that most of the new trips would occur on I-5 with some trips distributed over other local roads. Nonetheless, the additional trips associated with the Project would not exceed SMAQMD's or CARB's guidance of 100,000 vehicles per day (i.e., the level of daily traffic on a roadway that would likely result in substantial TAC concentration). New and existing sensitive receptors would not be exposed to increased health risk.

Summary

As discussed above, off-site improvements would not result in any new operational TAC sources. Construction of new land uses within the Project site and the addition of operation mobile sources on existing roadways would not result in the exposure of sensitive receptors to an incremental increase in cancer risk greater than 10 in 1 million or a hazard index greater than 1.0. However, if multiple new stationary sources are sited near one another, combined emissions may result in higher levels of TAC concentrations. Further, the development of the hospital, commercial, and educational land uses with truck loading areas may result in the exposure of sensitive receptors to a level of cancer risk greater than 10 in 1 million. Implementation of Mitigation Measure 3.2-4 would ensure that a sensitive receptor (e.g., residences and school) and a truck loading/unloading facility would not be located within 1,000 feet of each other, which is the CARB-recommended setback distance (CARB 2005:15), unless a site-specific HRA shows that the associated level of cancer risk at the sensitive receptors would not exceed 10 in 1 million. Therefore, sensitive receptors would not be exposed to TAC concentrations that exceed 10 in 1 million. This impact would be reduced to **less than significant** with mitigation incorporated.

Mitigation Measures

Mitigation Measure 3.2-4: Incorporate Design Features at Truck Loading Areas to Reduce Health-Risk Exposure at Sensitive Receptors

Prior to operation of any project component that has a loading dock, the Project Applicant shall design Project buildings so that truck loading/unloading facilities and sensitive receptors are not located within 1,000 feet of each other, considering site design parameters. For the purpose of this mitigation measure, a truck loading/unloading facility is defined as any truck loading dock or truck loading or unloading area where more than one fossil fuel-powered truck with three or more axles will be present and idling for more than 10 minutes per week, on average, and sensitive receptors include residential land uses, campus dormitories and student housing, residential care facilities, schools, parks, playgrounds, and daycare facilities. A truck loading/unloading facility and a sensitive receptor can be located within 1,000 feet of each other only if the Project Applicant prepares a qualified, site-specific HRA showing that the associated level of cancer risk at the sensitive receptors shall not exceed 10 in 1 million. The HRA shall be conducted in accordance with guidance from SMAQMD. If the HRA determines that a nearby sensitive receptor would be exposed to an incremental increase in cancer risk greater than 10 in 1 million, then design measures shall be incorporated to reduce

the level of risk exposure to less than 10 in 1 million. Design measures may include but are not limited to the following measures to reduce emissions:

- ▶ Require all truck loading/unloading facilities to be equipped with one 110-/208-volt power outlet for every two dock doors or truck parking spaces. A minimum 2-foot-by-3-foot sign shall be clearly visible at each loading dock stating, "Diesel engine idling limited to a maximum of 5 minutes." The sign shall include instructions for diesel trucks idling more than 5 minutes to connect to the 110-/208-volt power to run any auxiliary equipment.
- ▶ Use electric-powered "yard trucks" or forklifts to move truck trailers around a truck loading/unloading facility.
- ▶ Use buildings or walls to shield truck activity from nearby sensitive land uses.
- ▶ Plant and maintain a vegetative buffer between the truck loading/unloading facility and nearby sensitive receptors. As part of the detailed site design, a landscape architect licensed by the California Landscape Architects Technical Committee shall identify all locations where trees should be located, accounting for areas where shade is desired, such as along pedestrian and bicycle routes, the locations of solar photovoltaic panels, and other infrastructure.

Documentation in compliance with this mitigation measure will be provided to the City Development Services Department prior to operation of each building.

Significance after Mitigation

Less than significant.

Impact 3.2-5: Result in Other Emissions (Such as Those Leading to Odors) Adversely Affecting a Substantial Number of People

The Project would introduce new odor sources into the area (e.g., temporary diesel exhaust emissions during construction and from delivery trucks associated with operation of the hospital, commercial, and educational land uses). However, these odors would be temporary and intermittent and would dissipate rapidly. Further, the Project would not locate land uses near any existing odor sources. The Project is not anticipated to result in the installation of any major odor sources that would result in a potentially significant impact on the occupants of the proposed land uses. As a result, potential exposure of sensitive receptors to odors would be a **less-than-significant** impact.

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

Construction

Minor odors from the use of heavy-duty diesel-powered equipment and the laying of asphalt during Project construction activities would be intermittent and temporary and would dissipate rapidly from the source with an increase in distance. Although facilities would be constructed intermittently over a 10-year buildout period, these types of odor-generating activities would not occur at any single location, or close to off-site receptors, for an extended period. Existing off-site receptors include residences located adjacent to the Project site to the south and east along West Taron Drive and Ruddy Duck Way, as well as approximately 500 feet from the northeast portion of the Project site, and Merryhill Preschool is located approximately 900 feet northeast of the Project site. Given the temporary and intermittent nature of construction activities within specific locations on the Project site (i.e., construction does not occur in any one part of the Project site during the 10-year buildout period), and the distance to nearby receptors, Project construction is not anticipated to result in an odor-related impact during the construction phase of the Project.

Construction activity associated with the off-site emergency left-turn lane and the electrical and wastewater improvements would not result in long-term odorous emissions. Construction would involve the use of odor-emitting heavy-duty diesel equipment, but these odors would be periodic and would dissipate rapidly from the source with an

increase in distance. Additionally, because of the linear nature of the construction, construction activity would occur over an approximately 2.75-mile area and would not occur at a single location for an extended period. Given the temporary and intermittent nature of odor-generating construction activities, construction of the off-site improvements is not anticipated to expose a substantial number of people to objectionable odors for an extended period.

Operation

Operation of the Project would include diesel-fueled delivery trucks visiting loading docks at nonresidential land uses and at the hospital and use of a natural gas boiler and backup diesel generators at the central plant. However, these types of sources are similar to those associated with existing land uses in developed areas. Further, facilities developed under the Project would be subject to SMAQMD Rule 402 (Nuisance), regarding the control of nuisances, including odors. Receptors located in the general vicinity of such sources may be exposed to odorous emissions. These receptors include existing residences located adjacent to the Project site to the south and east along West Taron Drive and Ruddy Duck Way, as well as residences approximately 500 feet northeast of the Project site and Merryhill Preschool, located approximately 900 feet northeast of the Project site.

Implementing the Project is not anticipated to result in the installation of any major odor sources that would result in a potentially significant impact on the occupants of the proposed land uses or adjacent land uses. As a result, it would not be anticipated to result in a frequent exposure of a substantial number of people to odorous emissions.

Thus, because of the temporary and intermittent nature of odor-generating construction and operational activities, odor impacts would be **less than significant**.

Mitigation Measures

No mitigation is required.

3.3 BIOLOGICAL RESOURCES

This section addresses common and sensitive biological resources that could be affected by implementation of the CNU Medical Center Campus Project. The data reviewed in preparation of this analysis included:

- ▶ results of a California Natural Diversity Database (CNDDDB) record search of the Bruceville, Carmichael, Clarksburg, Courtland, Elk Grove, Florin, Galt, Sacramento East, and Sacramento West U.S. Geological Survey (USGS) 7.5-minute quadrangles (CNDDDB 2019);
- ▶ results of a California Native Plant Society Rare Plant Program database search of the Bruceville, Carmichael, Clarksburg, Courtland, Elk Grove, Florin, Galt, Sacramento East, and Sacramento West USGS 7.5-minute quadrangles (CNPS 2019);
- ▶ *Stone Lakes National Wildlife Refuge Comprehensive Conservation Plan* (USFWS 2007);
- ▶ *City of Elk Grove General Plan* (City of Elk Grove 2019);
- ▶ aerial photographs of the Project site;
- ▶ an arborist report of the Project site (Fong & Chan Architects 2019);
- ▶ a reconnaissance-level survey of the Project site conducted on October 18, 2019; and
- ▶ a reconnaissance-level survey of the Project site on December 14, 2019.

Comments were received from the U.S. Fish and Wildlife Service (USFWS), California Department of Fish and Wildlife (CDFW), Friends of Stone Lakes National Wildlife Refuge, Stonelake Masters Homeowners Association, and residents in response to the NOP regarding nesting birds, bird collisions with buildings, bird strikes with helicopters, artificial lighting, special-status species, and waterfowl. These issues are considered below.

3.3.1 Regulatory Setting

FEDERAL

Federal Endangered Species Act

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

Section 10 of the ESA applies if a nonfederal agency is the lead agency for an action that would result in take and no other federal agencies are involved in permitting or funding the action. Section 7 of the ESA applies if a federal discretionary action is required (e.g., a federal agency must issue a permit), in which case the involved federal agency must consult with USFWS if the involved federal agency determines that the proposed project may affect a listed species or destroy or adversely modify designated critical habitat.

Clean Water Act

Section 404 of the Clean Water Act (CWA) (33 U.S.C. Section 1344) requires project proponents to obtain a permit from the U.S. Army Corps of Engineers (USACE) before performing any activity that involves any discharge of dredged or fill material into waters of the United States, including wetlands. Many surface waters and wetlands in California meet the criteria for waters of the United States. In accordance with Section 401 of the CWA, projects that apply for a USACE

permit for discharge of dredged or fill material must obtain water quality certification from the appropriate regional water quality control board (RWQCB) indicating that the action would uphold State water quality standards.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) (16 U.S.C. Sections 703–712), first enacted in 1918, provides for protection of international migratory birds and authorizes the Secretary of the Interior to regulate the taking of migratory birds. The MBTA provides that it is unlawful, except as permitted by regulations, to pursue, take, or kill any migratory bird, or any part, nest, or egg of any such bird. Under the MBTA, “take” is defined as “pursue, hunt, shoot, wound, kill, trap, capture, or collect, or any attempt to carry out these activities.” A take does not include habitat destruction or alteration, as long as there is not a direct taking of birds, nests, eggs, or parts thereof. The current list of species protected by the MBTA can be found in Title 50 of the Code of Federal Regulations, Section 10.13. The list includes nearly all birds native to the United States.

STATE

California Endangered Species Act

Pursuant to the California Endangered Species Act (CESA) (California Fish and Game Code Sections 2050–2115.5), a permit from CDFW is required for projects that could result in the take of a plant or animal species that is listed by the State as threatened or endangered. Under CESA, “take” is defined as an activity that would directly or indirectly kill an individual of a species but does not include “harm” or “harass,” which are included in the federal definition. As a result, the threshold for take is higher under CESA than under the federal ESA. Authorization for take of State-listed species can be obtained through a California Fish and Game Code Section 2081 incidental take permit. CESA mandates that State agencies should not approve projects that would take threatened or endangered species if that take would jeopardize the continued existence of threatened or endangered species if reasonable and prudent alternatives are available that would avoid jeopardy.

California Fish and Game Code Sections 3503 and 3503.3—Protection of Bird Nests and Raptors

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 3503.3 of the code states that it is unlawful to take, possess, or destroy any raptors (i.e., species in the orders *Falconiformes* and *Strigiformes*), including their nests or eggs. Typical violations include destruction of active nests as a result of tree removal or disturbance caused by project construction or other activities that cause the adults to abandon the nest, resulting in loss of eggs and/or young.

Fully Protected Species under the California Fish and Game Code

Protection of fully protected species is described in Sections 3511, 4700, 5050, and 5515 of the California Fish and Game Code. These statutes prohibit take or possession of fully protected species and do not provide for authorization of incidental take.

California Native Plant Protection Act of 1977

The California Native Plant Protection Act (NPPA) (California Fish and Game Code Sections 1900–1913) prohibits importation of rare and endangered plants into California, take of rare and endangered plants, and sale of rare and endangered plants. CESA defers to the NPPA, which ensures that State-listed plant species are protected when State agencies are involved and projects are subject to CEQA. Plants listed as rare under the NPPA are not protected under CESA but rather may receive protection in response to potentially significant impacts, in accordance with CEQA.

Porter-Cologne Water Quality Control Act

Under the Porter-Cologne Water Quality Control Act (Water Code Section 13000 et seq.), waters of the State fall under the jurisdiction of the appropriate RWQCB. RWQCBs must prepare and periodically update water quality control plans (basin plans). Each basin plan sets forth water quality standards for surface water and groundwater, as well as actions to control point and nonpoint sources of pollution to achieve and maintain these standards. The

RWQCB's jurisdiction includes federally protected waters, as well as areas that meet the definition of "waters of the State." "Waters of the State" is defined as any surface water or groundwater, including saline waters, within the boundaries of the State. RWQCB has the discretion to take jurisdiction over areas not federally protected under Section 401 of the CWA provided they meet the definition of waters of the State. The California Water Code generally regulates more substances contained in discharges and defines discharges to receiving waters more broadly than does the CWA. Actions that affect waters of the State, including wetlands, must meet the RWQCB's waste discharge requirements.

LOCAL

City of Elk Grove General Plan

The *City of Elk Grove General Plan* Community and Resource Protection element (City of Elk Grove 2019) includes policies and actions aimed at reducing development impacts on native and nonnative habitats, plants, and animals. The Community and Resource Protection element ensures careful management and protection of the City's natural heritage. The following General Plan policies and standards are relevant to biological resources:

- ▶ **Policy NR-1-2:** Preserve and enhance natural areas that serve, or may potentially serve, as habitat for special-status species. Where preservation is not possible, require that appropriate mitigation be included in the project.
 - **Standard NR-1.2a:** Require a biological resources evaluation for private and public development projects in areas identified to contain or possibly contain special-status plant and animal species.
 - **Standard NR-1.2b:** Require development projects to retain movement corridor(s) adequate (both in size and in habitat quality) to allow for the continued wildlife use based on the species anticipated in the corridor.
- ▶ **Policy NR-1-3:** Support the establishment of multipurpose open space areas to address a variety of needs, including but not limited to maintenance of agricultural uses, wildlife habitat, recreational open space, aesthetic benefits, and flood control. To the extent possible, lands protected in accordance with this policy should be in proximity to Elk Grove to facilitate use of these areas by Elk Grove residents, assist in mitigation of habitat loss within the City, and provide an open space resource close to the urbanized areas of Elk Grove.
- ▶ **Policy NR-1-4:** Avoid impacts to wetlands, vernal pools, marshland, and riparian (streamside) areas unless shown to be technically infeasible. Ensure that no net loss of wetland areas occurs, which may be accomplished by avoidance, revegetation, restoration on-site or through creation of riparian habitat corridors, or purchase of credits from a qualified mitigation bank.
- ▶ **Policy NR-2-1:** Preserve large native oak and other native tree species as well as large nonnative tree species that are an important part of the City's historic and aesthetic character. When reviewing native or non-native trees for preservation, consider the following criteria:
 - Health of the tree
 - Safety hazards posed by the tree
 - Suitability for preservation in place
 - Biological value
 - Aesthetic value
 - Shade benefits
 - Water quality benefits
 - Air quality benefits (pollutant reduction)
- ▶ **Policy NR-2-2:** Maximize tree canopy coverage on public lands and in open spaces by continuing to plant new trees and ensuring sufficient right-of-way width for new developments to provide tree plantings.

- ▶ **Policy NR-2-4:** Preserve and plant trees in appropriate densities and locations to maximize energy conservation and air quality benefits.
- ▶ **Policy NR-2-5:** Ensure that trees that function as an important part of the City's or a neighborhood's aesthetic character or as natural habitat on public and private land are retained or replaced to the extent possible during the development of new structures, roadways (public and private, including roadway widening), parks, drainage channels, and other uses and structures.
- ▶ **Policy NR-2-6:** Promote the planting of drought-resistant shade trees with substantial canopies as part of private development projects and require, where feasible, site design that uses trees to shade rooftops, parking facilities, streets, and other facilities.

City of Elk Grove Municipal Code Chapter 16.130: Swainson's Hawk Impact Mitigation Fees

Chapter 16.130 mitigates impacts from typical urban development projects and requires mitigation for the loss of Swainson's hawk habitat at a 1:1 ratio. Mitigation can be achieved through purchase of City-owned credits for projects 40 acres or less. For projects larger than 40 acres, options for achieving mitigation through the code include the direct transfer to the City of a Swainson's hawk habitat conservation easement along with an easement monitoring endowment or the purchase of credits at a CDFW-approved conservation bank. The easement must be surveyed to determine whether it is suitable Swainson's hawk foraging habitat.

City of Elk Grove Municipal Code Chapter 19.12: Tree Preservation and Protection

Chapter 19.12 provides regulations for tree preservation and protection.

The regulations apply to four types of trees as follows:

- ▶ landmark trees, which are trees specifically identified for protection by the City Council;
- ▶ trees of local importance, which are trees of specific varieties greater than 6 inches in diameter;
- ▶ secured trees, which are trees that were protected as part of the development process for residential subdivisions and commercial developments; and
- ▶ trees on City property or in the public right-of-way.

Work on or removal of any of these four types of trees requires prior approval in the form of a Tree Permit from the City of Elk Grove. Project applicants shall contact the City Current Planning Division to determine whether their tree requires a Tree Permit prior to completing work.

Arborist Review

Prior to the consideration of a request for tree removal by the designated approving authority or grading within the critical root zone of a qualified tree, the applicant shall retain an International Society of Arboriculture–certified arborist to prepare a report. The report shall identify the basis, if any, for supporting the removal of the qualified tree(s) and shall be subject to review by the City Arborist. The arborist report shall include an analysis of the following factors:

- ▶ the condition of the tree with respect to disease, general health, damage, structural integrity, and whether or not the tree acts as a host for an organism that is parasitic to another species of tree that is in danger of being exterminated by the parasite;
- ▶ the number of existing trees on the subject property, on adjacent property, and immediately proximate to the subject tree(s) as deemed relevant by the City Arborist, and the effect of the tree removal upon public health, public safety, and the prosperity of surrounding trees;
- ▶ the number of healthy trees that a given parcel of land will support, with and without the proposed development;
- ▶ the effect of tree removal on soil stability/erosion, particularly near water courses, near drainage ditches, or on steep slopes, or the effect on runoff interception;

- ▶ present and future shade potential with regard to solar heating and cooling;
- ▶ identification of alternatives that would allow for the preservation of the tree(s) proposed for removal; and
- ▶ any other information the City Arborist finds pertinent (e.g., site conditions, other vegetation, and utility service).

Mitigation for Tree Loss

As part of the approval of a tree permit for removal of a qualified tree, the designated approving authority shall require mitigation for the loss of the tree consistent with Chapter 19.12, Article IV (Mitigation for Tree Loss). The requirement for mitigation may be waived under those circumstances as provided in Section 19.12.180 (Alternative Mitigation Requirements). Mitigation for qualified tree loss shall be provided at a ratio of 1 new inch diameter at breast height (DBH) of tree for each inch DBH lost (1:1 ratio) unless alternative mitigation is approved by the City.

3.3.2 Environmental Setting

HABITAT AND VEGETATION

Project Site

The Project site, which is approximately 24.4 acres, is developed except for an approximately 0.5-acre vacant lot on the southwest corner of Riparian Court and West Taron Drive, and an approximately 0.75-acre vacant lot along West Taron Drive north of Riparian Court. The developed portion of the site contains buildings, paved parking areas, paved roads, walkways, and landscaping. The 0.5-acre undeveloped lot contains an irrigated, landscaped area, and the 0.75-acre vacant lot contains a gravel area used for parking.

In addition to development on the Project site, a left-turn pocket and signal would be constructed on Elk Grove Boulevard for emergency vehicles, wastewater pipeline improvements would be required along Riparian Drive, and improvements would also be required at an existing off-site Sacramento Municipal Utility District (SMUD) distribution substation site approximately 2 miles east of the Project site and along a public utility roadway easement along Franklin Boulevard, Elk Grove Boulevard, and West Taron Drive (see Chapter 2, "Project Description," for further details on proposed off-site improvements). These system upgrades could require additional trenching along these routes, the extent of which would depend on the final engineering design by SMUD. These improvements would occur within the existing substation and roadway easement, which is already developed.

Trees

The Project site contains 507 trees that range from 1 inch DBH to 19.5 inches DBH (Fong & Chan Architects 2019). Tree species include many common ornamental varieties, such as London plane (*Platanus x hispanica*), Chinese elm (*Ulmus parvifolia*), Chinese pistache (*Pistacia chinensis*), red maple (*Acer rubrum*), holly oak (*Quercus ilex*), African sumac (*Rhus lancea*), southern magnolia (*Magnolia grandiflora*), coast redwood (*Sequoia sempervirens*), and crape myrtle (*Lagerstroemia* spp.) (Fong & Chan Architects 2019). Eight trees of local importance were identified within the Project site, all coast live oaks greater than 6 inches DBH (Fong & Chan Architects 2019).

SENSITIVE BIOLOGICAL RESOURCES

Special-Status Species

Special-status species are defined as species that are legally protected or that are otherwise considered sensitive by federal, State, or local resource agencies. Special-status species are species, subspecies, or varieties that fall into one or more of the following categories, regardless of their legal or protection status:

- ▶ officially listed by California or the federal government as endangered, threatened, or rare;
- ▶ a candidate for State or federal listing as endangered, threatened, or rare;

- ▶ taxa (i.e., taxonomic category or group) that meet the criteria for listing, even if not currently included on any list, as described in CCR Section 15380 of the State CEQA Guidelines;
- ▶ species identified by CDFW as species of special concern;
- ▶ species listed as fully protected under the California Fish and Game Code;
- ▶ species afforded protection under local planning documents; and
- ▶ taxa considered by CDFW to be “rare, threatened, or endangered in California” and assigned a California Rare Plant Rank (CRPR). The CDFW system includes rarity and endangerment ranks for categorizing plant species of concern, summarized as follows:
 - CRPR 1A - plants presumed to be extinct in California;
 - CRPR 1B - plants that are rare, threatened, or endangered in California and elsewhere;
 - CRPR 2A - plants presumed to be extinct in California but that are more common elsewhere;
 - CRPR 2B - plants that are rare, threatened, or endangered in California but more common elsewhere;
 - CRPR 3 - plants about which more information is needed (a review list); and
 - CRPR 4 - plants of limited distribution (a watch list).

All plants with a CRPR are considered “special plants” by CDFW. The term “special plants” is a broad term used by CDFW to refer to all of the plant taxa inventoried in CDFW’s CNDDDB, regardless of their legal or protection status. Plants ranked as CRPR 1A, 1B, 2A, or 2B may qualify as endangered, rare, or threatened species within the definition of State CEQA Guidelines Section 15380. CDFW recommends that potential impacts on CRPR 1 and 2 species be evaluated in CEQA documents. In general, CRPR 3 and 4 species do not meet the definition of endangered, rare, or threatened pursuant to State CEQA Guidelines Section 15380. However, these species may be evaluated by the lead agency on a case-by-case basis.

The term “California species of special concern” is applied by CDFW to animals not listed under ESA or CESA but that are considered to be declining at a rate that could result in listing or that historically occurred in low numbers and known threats to their persistence currently exist. CDFW’s fully protected status was California’s first attempt to identify and protect animals that were rare or facing extinction. Most species listed as fully protected were eventually listed as threatened or endangered under CESA; however, some species remain listed as fully protected but do not have simultaneous listing under CESA. Fully protected species may not be taken or possessed at any time, and no take permits can be issued for these species except for scientific research purposes or for relocation to protect livestock.

Of the 23 special-status plant species that are known to occur within the nine USGS 7.5-minute quadrangles surrounding the Project site, most are restricted to vernal pool, freshwater marsh, or other wetland habitats that do not occur on the Project site. None of the special-status plants known to occur in the area are expected to be found on the Project site because it consists of developed, disturbed, or landscaped cover and there are no natural plant communities or suitable habitat present (CNDDDB 2019; CNPS 2019). Of the 47 special-status wildlife species that could occur within the nine USGS quadrangles surrounding the Project site, two may occur on the Project site (CNDDDB 2019) (Table 3.3-1). Table 3.3-1 provides a list of the special-status wildlife species that have been documented in the Project site or within the nine USGS quadrangles surrounding the site. The table describes the species’ regulatory status, habitat, and potential for occurrence on the site.

Table 3.3-1 Special-Status Wildlife Species Known to Occur in the Project Vicinity and Their Potential for Occurrence

Species	Listing Status ¹		Habitat	Potential for Occurrence ²
	Federal	State		
Amphibians and Reptiles				
California tiger salamander <i>Ambystoma californiense</i>	FT	ST	Needs underground refuges, especially ground squirrel burrows, and vernal pools or other seasonal water sources for breeding.	Not expected to occur. The Project site does not contain suitable vernal pool, aquatic, or upland grassland habitat for this species. Potentially suitable vernal pool breeding habitat and associated grassland upland habitat is present within Stone Lakes National Wildlife Refuge, which is located near the Project site, and adjacent to one of the off-site improvement areas. However, there are no known occurrences within Stone Lakes National Wildlife Refuge, and the species has not been recorded within the Sacramento County Urban Services Boundary or north of the Cosumnes River despite extensive surveys (County of Sacramento et al. 2018).
Coast horned lizard <i>Phrynosoma blainvillii</i>	–	SSC	Frequents a wide variety of habitats, most common in lowlands along sandy washes with scattered low bushes. Open areas for sunning, bushes for cover, patches of loose soil for burial, and abundant supply of ants and other insects.	Not expected to occur. The Project site does not contain suitable habitat for this species.
Giant gartersnake <i>Thamnophis gigas</i>	FT	ST	Prefers freshwater marsh and low-gradient streams. Has adapted to drainage canals and irrigation ditches. This is the most aquatic of the garter snakes in California.	Not expected to occur. The Project site does not contain and is not adjacent to suitable aquatic habitat for this species.
Western pond turtle <i>Actinemys marmorata</i>	–	SSC	An aquatic turtle of ponds, marshes, rivers, streams, and irrigation ditches, usually with aquatic vegetation, below 6,000 feet in elevation. Needs basking sites and suitable (sandy banks or grassy open fields) upland habitat up to 0.5 kilometer from water for egg-laying.	Not expected to occur. The Project site does not contain and is not adjacent to suitable aquatic habitat for this species.
Western spadefoot <i>Spea hammondi</i>	–	SSC	Occurs primarily in grassland habitats but can be found in valley-foothill hardwood woodlands. Vernal pools are essential for breeding and egg-laying.	Not expected to occur. The Project site does not contain grassland or vernal pool habitat.
Birds				
American peregrine falcon <i>Falco peregrinus anatum</i>	FD	SD FP	Near wetlands, lakes, rivers, or other water; on cliffs, banks, dunes, mounds; also, human-made structures. Nest consists of a scrape or a depression or ledge in an open site.	Not expected to occur. The Project site does not contain suitable nesting or foraging habitat for this species.
Bald eagle <i>Haliaeetus leucocephalus</i>	FD	SE FP	Lower montane coniferous forest, old growth. Ocean shore, lake margins, and rivers for both nesting and wintering. Most nests within 1 mile of water. Nests in large, old-growth, or dominant live tree with open branches, especially ponderosa pine. Roosts communally in winter.	Not expected to occur. The Project site does not contain suitable nesting or foraging habitat for this species.

Species	Listing Status ¹		Habitat	Potential for Occurrence ²
	Federal	State		
Bank swallow <i>Riparia riparia</i>	–	ST	Colonial nester; nests primarily in riparian and other lowland habitats west of the desert. Requires vertical banks/cliffs with fine-textured/sandy soils near streams, rivers, lakes, ocean to dig nesting hole.	Not expected to occur. The Project site does not contain suitable nesting habitat for this species.
Burrowing owl <i>Athene cunicularia</i>	–	SSC	Coastal prairie, coastal scrub, Great Basin grassland, Great Basin scrub, Mojavean desert scrub, Sonoran desert scrub, and valley and foothill grassland. Open, dry annual or perennial grasslands, deserts and scrublands characterized by low-growing vegetation. Subterranean nester, dependent upon burrowing mammals, most notably, the California ground squirrel.	May occur. The Project site does not contain suitable grassland habitat for this species. However, the proposed off-site electrical service improvements would occur within the public utility easement along Franklin Boulevard, Elk Grove Boulevard, and West Taron Drive. The easement is adjacent to a portion of Stone Lakes National Wildlife Refuge that may provide suitable grassland habitat for burrowing owl.
California black rail <i>Laterallus jamaicensis coturniculus</i>	–	ST FP	Inhabits freshwater marshes, wet meadows and shallow margins of saltwater marshes bordering larger bays. Needs water depths of about 1 inch that do not fluctuate during the year and dense vegetation for nesting habitat.	Not expected to occur. The Project site does not contain suitable marsh or meadow habitat.
Golden eagle <i>Aquila chrysaetos</i>	–	FP	Rolling foothills, mountain areas, sage-juniper flats, and desert. Cliff-walled canyons provide nesting habitat in most parts of range; also, large trees in open areas.	Not expected to occur. The Project site does not contain suitable nesting or foraging habitat for this species.
Grasshopper sparrow <i>Ammodramus savannarum</i>	–	SSC	Dense grasslands on rolling hills, lowland plains, in valleys and on hillsides on lower mountain slopes. Favors native grasslands with a mix of grasses, forbs, and scattered shrubs. Loosely colonial when nesting.	Not expected to occur. The Project site does not contain suitable grassland habitat.
Greater sandhill crane <i>Antigone canadensis tabida</i>	–	ST FP	Nests in wetland habitats in northeastern California; winters in the Central Valley. Prefers grain fields within 4 miles of a shallow body of water used as a communal roost site; irrigated pasture used as loafing sites.	Not expected to occur. The Project site does not contain grain fields. While sandhill cranes are not expected to roost or forage on the Project site, they do roost and forage in surrounding habitats and fly over the Project site during daily movements between foraging sites and from daytime forage sites to nighttime roost sites.
Least Bell's vireo <i>Vireo bellii pusillus</i>	FE	SE	Summer resident of southern California in low riparian in vicinity of water or in dry river bottoms; below 2,000 feet. Nests placed along margins of bushes or on twigs projecting into pathways, usually willow, <i>Baccharis</i> , mesquite.	Not expected to occur. The Project site does not contain riparian habitat.
Least bittern <i>Ixobrychus exilis</i>	–	SSC	Colonial nester in marshlands and borders of ponds and reservoirs that provide ample cover. Nests usually placed low in tules, over water.	Not expected to occur. The Project site does not contain marshes or other aquatic.
Lesser sandhill crane <i>Antigone canadensis</i>	–	SSC	Nests in wetland habitats in northeastern California; winters in the Central Valley. Prefers grain fields within 4 miles of a shallow body of water used as a communal roost site; irrigated pasture used as loafing sites.	Not expected to occur. The Project site does not contain grain fields.

Species	Listing Status ¹		Habitat	Potential for Occurrence ²
	Federal	State		
Loggerhead shrike <i>Lanius ludovicianus</i>	–	SSC	Prefers open country for hunting, with perches for scanning, and fairly dense shrubs and brush for nesting.	Not expected to occur. The Project site does not contain suitable nesting habitat for this species.
Mountain plover <i>Charadrius montanus</i>	–	SSC	Chenopod scrub and valley and foothill grassland. Short grasslands, freshly plowed fields, newly sprouting grain fields, and sometimes sod farms. Short vegetation, bare ground, and flat topography. Prefers grazed areas and areas with burrowing rodents.	Not expected to occur. The Project site does not contain suitable grassland or agricultural habitat and is outside of the known geographic range of this species.
Northern harrier <i>Circus hudsonius</i>	–	SSC	Nests and forages in marshes and grasslands, from salt grass in desert sink to mountain cienegas. Nests on ground in shrubby vegetation, usually at marsh edge; nest built of a large mound of sticks in wet areas.	Not expected to occur. The Project site does not contain suitable grassland, marsh, or shrub nesting habitat for this species.
Purple martin <i>Progne subis</i>	–	SSC	Broadleaved upland forest and lower montane coniferous forest. Inhabits woodlands, low-elevation coniferous forest of Douglas-fir, ponderosa pine, and Monterey pine. Nests in old woodpecker cavities mostly, also in human-made structures. Nest often located in tall, isolated tree/snag.	Not expected to occur. The Project site does not contain suitable nesting habitat for this species.
Song sparrow ("Modesto" population) <i>Melospiza melodia</i>	–	SSC	Emergent freshwater marshes, riparian willow thickets, riparian forests of valley oak (<i>Quercus lobata</i>), and vegetated irrigation canals and levees.	Not expected to occur. The Project site does not contain marsh or riparian habitat.
Swainson's hawk <i>Buteo swainsoni</i>	–	ST	Great Basin grassland, riparian forest, riparian woodland, and valley and foothill grassland. Breeds in grasslands with scattered trees, juniper-sage flats, riparian areas, savannas, and agricultural lands or ranchlands with groves or lines of trees. Requires adjacent suitable foraging areas, such as grasslands, or alfalfa or grain fields supporting rodent populations.	May occur. The nearest known Swainson's hawk nesting occurrence is approximately 0.2 mile northwest of the Project site (CNDDDB 2019). The trees on the Project site are likely not suitable nest trees for this species; however, Swainson's hawk may nest or roost in adjacent trees or forage in adjacent undeveloped areas.
Tricolored blackbird <i>Agelaius tricolor</i>	–	ST SSC	Highly colonial species, most numerous in Central Valley and vicinity. Largely endemic to California. Requires open water, protected nesting substrate, and foraging area with insect prey within a few kilometers of the colony.	Not expected to occur. The Project site and adjacent areas do not contain suitable aquatic habitat and associated nesting substrate for this species.
Vaux's swift <i>Chaetura vauxi</i>	–	SSC	Redwood, Douglas-fir, and other coniferous forests. Nests in large hollow trees and snags. Often nests in flocks. Forages over most terrains and habitats but shows a preference for foraging over rivers and lakes.	Not expected to occur. The Project site does not contain suitable nesting or foraging habitat for this species.
Western yellow-billed cuckoo <i>Coccyzus americanus occidentalis</i>	FT	SE	Riparian forest. Riparian forest nester, along the broad, lower flood-bottoms of larger river systems. Nests in riparian jungles of willow, often mixed with cottonwoods, with lower story of blackberry, nettles, or wild grape.	Not expected to occur. The Project site does not contain riparian habitat.
White-tailed kite <i>Elanus leucurus</i>	–	FP	Cismontane woodland, marsh and swamp, riparian woodland, valley and foothill grassland, and wetlands. Rolling foothills and valley margins with scattered oaks and river bottomlands or marshes next to deciduous woodland. Open grasslands, meadows, or marshes for foraging close to isolated, dense-topped trees for nesting and perching.	May occur. There have been many observations of the species in the vicinity of the Project site (eBird 2019). The trees on the Project site are likely not suitable nest trees for this species; however, white-tailed kite may nest or roost in adjacent trees or forage in adjacent undeveloped areas.

Species	Listing Status ¹		Habitat	Potential for Occurrence ²
	Federal	State		
Yellow warbler <i>Setophaga petechia</i>	–	SSC	Riparian plant associations close to water. Also nests in montane shrubbery in open conifer forests in the Cascade Range and Sierra Nevada. Frequently found nesting and foraging in willow shrubs and thickets, and in other riparian plants, including cottonwoods, sycamores, ash, and alders.	Not expected to occur. The Project site does not contain riparian habitat.
Yellow-breasted chat <i>Icteria virens</i>	–	SSC	Summer resident; inhabits riparian thickets of willow and other brushy tangles near watercourses. Nests in low, dense riparian habitat consisting of willow, blackberry, and wild grape; forages and nests within 10 feet of ground.	Not expected to occur. The Project site does not contain riparian habitat.
Yellow-headed blackbird <i>Xanthocephalus xanthocephalus</i>	–	SSC	Nests in freshwater emergent wetlands with dense vegetation and deep water. Often along borders of lakes or ponds. Nests only where large insects such as Odonata are abundant, and nesting timed with maximum emergence of aquatic insects.	Not expected to occur. The Project site does not contain suitable aquatic habitat and associated nesting substrate for this species.
Fish				
Chinook salmon - Central Valley fall-/late fall-run ESU <i>Oncorhynchus tshawytscha</i> pop. 13	–	SSC	Populations spawning in the Sacramento and San Joaquin Rivers and their tributaries.	Not expected to occur. The Project site does not contain aquatic habitat for this species.
Chinook salmon - Central Valley spring-run ESU <i>Oncorhynchus tshawytscha</i> pop. 6	FT	ST	Adult numbers depend on pool depth and volume, amount of cover, and proximity to gravel. Federal listing refers to populations spawning in Sacramento River and tributaries.	Not expected to occur. The Project site does not contain aquatic habitat for this species.
Chinook salmon - Sacramento River winter-run ESU <i>Oncorhynchus tshawytscha</i> pop. 7	FE	SE	Sacramento River below Keswick Dam. Spawns in the Sacramento River, but not in tributary streams.	Not expected to occur. The Project site does not contain aquatic habitat for this species.
Chinook salmon - upper Klamath and Trinity Rivers ESU <i>Oncorhynchus tshawytscha</i> pop. 30	–	SC SSC	Spring-run chinook in the Trinity River and the Klamath River upstream of the mouth of the Trinity River.	Not expected to occur. The Project site does not contain aquatic habitat for this species.
Delta smelt <i>Hypomesus transpacificus</i>	FT	SE	Aquatic and estuary. Sacramento–San Joaquin Delta. Seasonally in Suisun Bay, Carquinez Strait, and San Pablo Bay.	Not expected to occur. The Project site does not contain aquatic habitat for this species.
Hardhead <i>Mylopharodon conocephalus</i>	–	SSC	Low-elevation to midelevation streams in the Sacramento River, San Joaquin River, and associated drainages.	Not expected to occur. The Project site does not contain aquatic habitat for this species.
Longfin smelt <i>Spirinchus thaleichthys</i>	FC	SSC	Aquatic and estuary. Euryhaline, nektonic, and anadromous. Found in open waters of estuaries, mostly in middle or bottom of water column.	Not expected to occur. The Project site does not contain aquatic habitat for this species.
Pacific lamprey <i>Entosphenus tridentatus</i>	–	SSC	Found in Pacific Coast streams north of San Luis Obispo County; however, regular runs in Santa Clara River. Size of runs is declining.	Not expected to occur. The Project site does not contain aquatic habitat for this species.
River lamprey <i>Lampetra ayresii</i>	–	SSC	Lower Sacramento River, San Joaquin River, and Russian River. May occur in coastal streams north of San Francisco Bay.	Not expected to occur. The Project site does not contain aquatic habitat for this species.
Sacramento hitch <i>Lavinia exilicauda</i>	–	SSC	Warm, lowland, waters, including clear streams, turbid sloughs, lakes, and reservoirs.	Not expected to occur. The Project site does not contain aquatic habitat for this species.

Species	Listing Status ¹		Habitat	Potential for Occurrence ²
	Federal	State		
Sacramento splittail <i>Pogonichthys macrolepidotus</i>	–	SSC	Estuaries and freshwater marshes. Endemic to the lakes and rivers of the Central Valley, but now confined to the Delta, Suisun Bay, and associated marshes.	Not expected to occur. The Project site does not contain aquatic habitat for this species.
Steelhead - central California coast DPS <i>Oncorhynchus mykiss irideus</i> pop. 8	FT	–	From Russian River, south to Soquel Creek and to, but not including, Pajaro River. Also San Francisco and San Pablo Bay basins.	Not expected to occur. The Project site does not contain aquatic habitat for this species.
Steelhead - Central Valley DPS <i>Oncorhynchus mykiss irideus</i> pop. 11	FT	–	Populations in the Sacramento and San Joaquin Rivers and their tributaries.	Not expected to occur. The Project site does not contain aquatic habitat for this species.
White sturgeon <i>Acipenser transmontanus</i>	–	SSC	Lives in estuaries of large rivers, moving into freshwater to spawn. Most abundant in brackish portions of estuaries.	Not expected to occur. The Project site does not contain aquatic habitat for this species.
Invertebrates				
Valley elderberry longhorn beetle <i>Desmoceris californicus dimorphus</i>	FT	–	Riparian scrub. Occurs only in the Central Valley of California, in association with blue elderberry (<i>Sambucus nigra</i> ssp. <i>caerulea</i>). Prefers to lay eggs in elderberries stems 2–8 inches in diameter; some preference shown for “stressed” elderberries.	Not expected to occur. Elderberry shrub habitat is not present within the Project site.
Vernal pool fairy shrimp <i>Branchinecta lynchi</i>	FT	–	Valley and foothill grassland, vernal pool, and wetland. Endemic to the grasslands of the Central Valley, Central Coast mountains, and South Coast mountains, in astatic rain-filled pools. Inhabits small, clear-water sandstone-depression pools and grassed swale, earth slump, or basalt-flow depression pools.	Not expected to occur. The Project site does not contain vernal pool, wetland, or grassland habitat.
Vernal pool tadpole shrimp <i>Lepidurus packardii</i>	FE	–	Valley and foothill grassland, vernal pool, and wetland. Inhabits vernal pools and swales in the Sacramento Valley containing clear to highly turbid water. Pools commonly found in grass-bottomed swales of unplowed grasslands. Some pools are mud-bottomed and highly turbid.	Not expected to occur. The Project site does not contain vernal pool, wetland, or grassland habitat.
Mammals				
American badger <i>Taxidea taxus</i>	–	SSC	Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils. Needs sufficient food, friable soils, and open, uncultivated ground. Preys on burrowing rodents. Digs burrows.	Not expected to occur. The Project site does not contain suitable grassland habitat for this species.
Western red bat <i>Lasiurus blossevillei</i>	–	SSC	Roosts primarily in trees, 2–40 feet above ground, from sea level up through mixed conifer forests. Prefers habitat edges and mosaics with trees that are protected from above and open below with open areas for foraging.	Not expected to occur. The Project site does not contain suitable roost trees for this species.

¹ Legal Status Definitions

Federal:

FE federally listed as endangered (legally protected)

FT federally listed as threatened (legally protected)

FC federal candidate species

FD federally delisted

State:

FP fully protected (legally protected)

SSC species of special concern (no formal protection other than CEQA consideration)

SE State listed as endangered (legally protected)

ST State listed as threatened (legally protected)

SC State candidate for listing (legally protected)

SD State delisted

² Potential for Occurrence Definitions

Not expected to occur: Species is unlikely to be present because of poor habitat quality, lack of suitable habitat features, or restricted current distribution of the species.

May occur: Suitable habitat is available; however, there are little to no other indicators that the species might be present.

Notes: DPS = distinct population segment; ESU = evolutionarily significant unit.

Sources: CNDDDB 2019; eBird 2019

Sensitive Natural Communities

Sensitive natural communities are those native plant communities defined by CDFW as having limited distribution Statewide or within a county or region and that are often vulnerable to environmental effects of projects (CDFW 2018). These communities may or may not contain special-status plants or their habitat (CDFW 2018). CDFW designates sensitive natural communities based on their State rarity and threat ranking using NatureServe's Heritage Methodology. Natural communities with rarity ranks of S1 to S3, where S1 is critically imperiled, S2 is imperiled, and S3 is vulnerable, are considered sensitive natural communities to be addressed in the environmental review processes of CEQA and its equivalents (CDFW 2018). There are no sensitive natural communities within or adjacent to the Project site.

State-Protected or Federally Protected Wetlands

Except for two small parcels that have not been developed, the Project site has been entirely graded and developed. One of these parcels contains an approximately 0.5-acre irrigated, landscaped cover. There are no State-protected or federally protected wetlands within or adjacent to the Project site.

3.3.3 Impacts and Mitigation Measures

METHODOLOGY

This impact evaluation is based on review of aerial photographs, existing databases that address biological resources in the Project vicinity, an arborist report of the Project site, and reconnaissance-level surveys conducted on October 18, 2019, and December 14, 2019, as described above. Data were provided by USFWS, including special-status wildlife occurrences; heron, egret, and double-crested cormorant (*Phalacrocorax auritus*) rookeries; and sandhill crane, shorebird, and waterfowl roosting sites (Freis, pers. comm., 2020). Additionally, published information regarding bird strikes associated with buildings and helicopters, as well as impacts of noise and nighttime lighting on wildlife, was reviewed.

THRESHOLDS OF SIGNIFICANCE

An impact on biological resources would be significant if implementation of the 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 local or regional plans, policies, or regulations or by CDFW or USFWS;
- ▶ have a substantial adverse effect on State-protected or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, or similar) through direct removal, filling, hydrological interruption, or other means;
- ▶ interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;

- ▶ 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 (HCP); natural community conservation plan; or other approved local, regional, or State HCP.

ISSUES NOT DISCUSSED FURTHER

Special-Status Plants

The Project site and off-site improvement areas do not contain suitable habitat for the special-status plant species identified within the nine USGS 7.5-minute quadrangles surrounding the Project site or otherwise known to occur in the region. Project implementation would not result in any impact on special-status plants. This issue is not discussed further.

Sensitive Natural Communities and Riparian Habitat

There are no sensitive natural communities and no riparian habitat in or immediately adjacent to the Project site or off-site improvement areas. Project implementation would not result in any impact on these resources. This issue is not discussed further.

State-Protected or Federally Protected Wetlands

The Project site and off-site improvement areas contain developed land and land previously approved for development. Project implementation would not result in any impact on State-protected or federally protected wetlands. This issue is not discussed further.

Consistency with Habitat Conservation Plans

The Project site and off-site improvement areas are not within the plan area of any adopted HCP or natural community conservation plan. The South Sacramento HCP plan area is located nearby; however, the City is not a participant in this plan. This issue is not discussed further.

ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Impact 3.3-1: Disturbance to or Loss of Special-Status Wildlife Species or Habitat as a Result of Construction Activities

Project construction would include ground disturbance, tree removal, building demolition, and construction of new buildings, which may result in disturbance to or loss of special-status wildlife species and reduced breeding productivity of these species. Implementation of Mitigation Measures 3.3-1a and 3.3-1b would reduce significant impacts on Swainson's hawk, white-tailed kite, other raptors, other common native nesting birds, burrowing owl, greater sandhill crane, and lesser sandhill crane as a result of tree removal, construction, and off-site improvement activities because it would require preactivity surveys; implementation of avoidance measures (e.g., no-disturbance buffers) to prevent injury, mortality, disturbance, and nest abandonment if active nests are determined to be present on or near the Project site or off-site improvements; and minimization of construction noise during nighttime hours. These mitigation measures would reduce impacts to a **less-than-significant** level.

Table 3.3-1 provides a list of the special-status wildlife species that may occur within the Project site. Two special-status bird species, Swainson's hawk (*Buteo swainsoni*) and white-tailed kite (*Elanus leucurus*), may occur close to the Project site and be affected by Project activities (Table 3.3-1). One special-status bird species, burrowing owl (*Athene cunicularia*), may occur within the portion of Stone Lakes National Wildlife Refuge that is adjacent to the off-site SMUD distribution and substation site improvements.

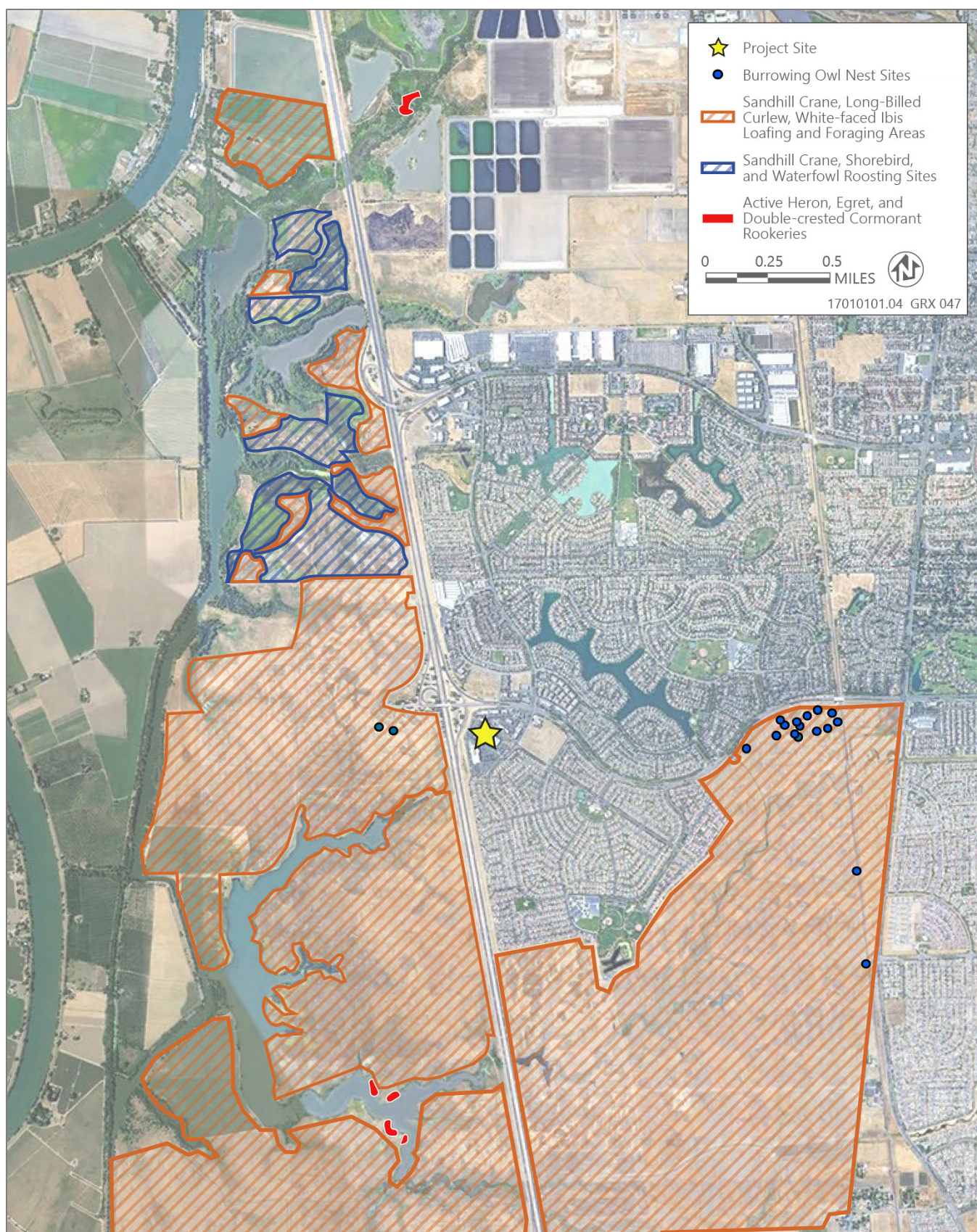
Swainson's Hawk, White-Tailed Kite, Other Raptors, Burrowing Owl, Greater Sandhill Crane, Lesser Sandhill Crane, and Common Native Nesting Birds

The Project site is located adjacent to known Swainson's hawk nesting occurrences (CNDDDB 2019) and potential nesting habitat for white-tailed kite and other raptors (e.g., red-tailed hawk [*Buteo jamaicensis*], red-shouldered hawk [*Buteo lineatus*]). Habitat within Stone Lakes National Wildlife Refuge supports 300–350 greater sandhill cranes in winter and is one of the most important winter use locations in the Central Valley (USFWS 2007). The Project site does not contain potentially suitable nesting habitat for these species (e.g., large trees, riparian woodland) or significant raptor foraging habitat, and Project implementation would not result in destruction of any nests, nesting habitat, or foraging habitat for raptors or special-status birds. However, Project construction activities, including demolition, operation of vehicles and construction equipment, and presence of construction crews, may produce levels of noise, nighttime lighting, and novel visual stimulus that may result in disturbance to these species if they are present nearby. Disturbance to actively nesting Swainson's hawks, white-tailed kites, or other raptors may result in nest abandonment, nest failure, or mortality of chicks or eggs. Disturbance to roosting greater sandhill cranes or lesser sandhill cranes may result in abandonment of roost habitat within Stone Lakes National Wildlife Refuge.

The Project site does not contain suitable grassland habitat for burrowing owl; however, the species is known to occur within Stone Lakes National Wildlife Refuge, west of the Project site (CNDDDB 2019; Freis, pers. comm., 2020; Figure 3.3-1). The proposed off-site electrical service improvements would occur within the public utility easement along Franklin Boulevard, Elk Grove Boulevard, and West Taron Drive. The easement is adjacent to the eastern portion of the refuge, where there are several known occurrences of burrowing owls within approximately 0.25 mile west and 1.1 miles south of the SMUD distribution and substation site improvements (CNDDDB 2019; Freis, pers. comm., 2020). Grassland habitat within Stone Lakes National Wildlife Refuge, and adjacent to the public utility easement, provides suitable habitat for burrowing owl. Although off-site improvements would not occur within this portion of the refuge, these activities, including ground disturbance and presence of heavy equipment, trucks, and personnel, may result in indirect disturbance to burrowing owls, which, if they are present nearby, may be alarmed by the noise and the visual stimulus of equipment and personnel. Disturbance to actively nesting burrowing owls may result in nest abandonment, nest failure, or mortality of chicks or eggs.

Finally, trees, other landscaping, and human-made structures (e.g., bridges, buildings) within the Project site and adjacent to off-site improvement areas may provide suitable nesting habitat for common native nesting birds that are protected under California Fish and Game Code Section 3503. Project activities within the Project site would include removal of up to 313 trees of various sizes (Fong & Chan Architects 2019). Tree removal may result in direct loss of active nests of common native nesting birds.

Implementation of Mitigation Measures 3.3-1a and 3-3-1b would reduce significant impacts on Swainson's hawk, white-tailed kite, other raptors, other common native nesting birds, burrowing owl, greater sandhill crane, and lesser sandhill crane as a result of tree removal, construction, and off-site improvement activities because it would require preactivity surveys; implementation of avoidance measures (e.g., no-disturbance buffers) to prevent injury, mortality, disturbance, and nest abandonment if active nests are determined to be present on or near the Project site or off-site improvements; and minimization of construction noise during nighttime hours. These mitigation measures would reduce impacts to a **less-than-significant** level.



Source: Stone Lakes National Wildlife Refuge, USFWS, Adapted by Ascent Environmental in 2020

Figure 3.3-1 Sensitive Resources in Stone Lakes National Wildlife Refuge

Mitigation Measures

Mitigation Measure 3.3-1a: Conduct Preactivity Nesting Bird Surveys and Implement Avoidance Measures

Before construction activities begin, the following measures, which are intended to avoid and minimize impacts on special-status birds, raptors, and common native nesting birds, shall be implemented. These measures shall be reflected in Project improvement plans to the satisfaction of the City Development Services Department and Public Works Department.

Swainson's Hawk, White-Tailed Kite, and Other Raptors

- ▶ Prior to initiation of any Project activities during the nesting bird season (February 1–August 31), a qualified biologist shall conduct preconstruction surveys for nesting raptors and shall identify active nests within 0.5 mile (for Swainson's hawk) and within 0.25 mile (for white-tailed kite and other nesting raptors) of the Project site and off-site improvement areas. The surveys shall be conducted between February 1 and August 31, no more than 7 days prior to initiation of construction activities. The results of these surveys shall be provided to the City Development Services Department.
- ▶ Impacts on nesting Swainson's hawks and other raptors shall be avoided by establishing appropriate buffers around active nest sites identified during preconstruction raptor surveys. Project activities shall not commence within the buffer areas until a qualified biologist has determined, in consultation with CDFW, that the young have fledged, that the nest is no longer active, or that reducing the buffer would not likely result in nest abandonment. CDFW guidelines recommend implementation of a 0.5-mile-wide buffer for Swainson's hawk and a 500-foot buffer for other raptors, but the size of the buffer may be adjusted if a qualified biologist, in consultation with CDFW, determines that such an adjustment would not be likely to adversely affect the nest. Factors to be considered for determining buffer location will include presence of natural buffers provided by vegetation, buildings, or topography; nest height above ground; baseline levels of noise and human activity (e.g., I-5, other nearby urban development); and species sensitivity. Monitoring of the nest by a qualified biologist during and after construction activities shall be required if the activity has potential to adversely affect the nest. 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 shall be increased until the agitated behavior ceases.

Common Native Birds

- ▶ To minimize the potential for disturbance to or loss of common native bird nests, tree and other vegetation removal activities within the Project site shall occur only during the nonbreeding season (September 1–January 31).
- ▶ If all tree removal activities are not completed prior to the start of the bird nesting season (February 1), a qualified biologist shall conduct a preactivity nesting bird survey within all trees planned for removal. If no bird nests are discovered, further mitigation is not required prior to tree removal.
- ▶ If active nests are observed, a no-disturbance buffer shall be implemented around the nest, and tree removal shall not commence until the nest is determined to be inactive by a qualified biologist and all young have fledged. Buffer size will be determined by a qualified biologist. Factors to be considered for determining buffer location will include presence of natural buffers provided by vegetation, buildings, or topography; nest height above ground; baseline levels of noise and human activity (e.g., roads, other nearby urban development); and species sensitivity.

Burrowing Owl

- ▶ The implementing party shall retain a qualified biologist to conduct focused breeding and nonbreeding season surveys for burrowing owls in areas of suitable habitat on and within 1,500 feet of the SMUD distribution substation site (i.e., public utility easement adjacent to Stone Lakes National Wildlife Refuge). Surveys shall be conducted prior to the start of off-site improvement activities and in accordance with Appendix D of CDFW's *Staff Report on Burrowing Owl Mitigation* (CDFW 2012) or the most recent CDFW protocols. The results of these surveys shall be provided to the City Development Services Department.
- ▶ If no occupied burrows are found, a letter report documenting the survey methods and results shall be submitted to CDFW, and no further mitigation will be required.

- ▶ If an active burrow is found during the nonbreeding season (September 1–January 31), the implementing party shall consult with CDFW regarding protection buffers to be established around the occupied burrow and maintained throughout off-site improvement activities adjacent to the burrow. If occupied burrows are present that cannot be avoided or adequately protected with a no-disturbance buffer, a burrowing owl exclusion plan shall be developed, as described in Appendix E of CDFW's 2012 Staff Report, and provided to the City Planning Division. Burrowing owls shall not be excluded from occupied burrows until the Project's burrowing owl exclusion plan is approved by CDFW. The exclusion plan shall include a plan for creation, maintenance, and monitoring of artificial burrows that are located in suitable habitat near the burrows to be destroyed and that provide substitute burrows for displaced owls.
- ▶ If an active burrow is found during the breeding season (February 1–August 31), occupied burrows shall not be disturbed and shall be provided with a 150- to 1,500-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 shall depend on the time of year and level of disturbance as outlined in the CDFW Staff Report (CDFW 2012) or the most recent CDFW protocols. The size of the buffer may be reduced if a broad-scale, long-term monitoring program acceptable to CDFW is implemented to ensure that burrowing owls are not detrimentally affected. After the fledglings are capable of independent survival, the owls can be evicted and the burrow can be destroyed pursuant to the terms of a CDFW-approved burrowing owl exclusion plan developed in accordance with Appendix E of CDFW's 2012 Staff Report or the most recent CDFW protocols.
- ▶ If active burrowing owl nests are found on the site and are destroyed by implementation of off-site improvements, the implementing party shall mitigate the loss of occupied habitat in accordance with guidance provided in the CDFW 2012 Staff Report, which states that permanent impacts on nesting, occupied, and satellite burrows and on burrowing owl habitat shall be mitigated such that the habitat acreage, number of burrows, and active burrows affected are replaced through permanent conservation of comparable or better habitat with similar vegetation communities and burrowing mammals (e.g., ground squirrels) present to provide for nesting, foraging, wintering, and dispersal. The implementing party shall retain a qualified biologist to develop a burrowing owl mitigation and management plan to be provided to the City Development Services Department that incorporates the following goals and standards:
 - Mitigation lands shall be selected based on comparison of the habitat lost to the compensatory habitat, including type and structure of habitat; disturbance levels; potential for conflicts with humans, pets, and other wildlife; density of burrowing owls; and relative importance of the habitat to the species range wide.
 - If feasible, mitigation lands shall be provided adjacent to or otherwise near the site so that displaced owls can relocate with reduced risk of take. The feasibility of providing mitigation adjacent to or otherwise near the Project site depends on the availability of sufficient suitable habitat to support displaced owls that may be preserved in perpetuity.
 - If suitable habitat is not available for conservation adjacent to or otherwise near the Project site, mitigation lands shall be focused on consolidating and enlarging conservation areas outside of urban and planned growth areas and within foraging distance of other conservation lands. Mitigation may be accomplished through purchase of mitigation credits at a CDFW-approved mitigation bank, if available. If mitigation credits are not available from an approved bank and mitigation lands are not available adjacent to other conservation lands, alternative mitigation sites and acreage shall be determined in consultation with CDFW.
 - If mitigation is not available through an approved mitigation bank and will be completed through permittee-responsible conservation lands, the mitigation plan shall include mitigation objectives, site selection factors, site management roles and responsibilities, vegetation management goals, financial assurances and funding mechanisms, performance standards and success criteria, monitoring and reporting protocols, and adaptive management measures. Success shall be based on the number of adult burrowing owls and pairs using the site and whether the numbers are maintained over time. Measures of success, as suggested in the 2012 Staff Report, shall include site tenacity, the number of adult owls present and reproducing, colonization by burrowing owls from elsewhere, changes in distribution, and trends in stressors.

Mitigation Measure 3.3-1b: Implement Measures to Reduce Impacts on Roosting Birds as a Result of Construction Noise

This measure, which is intended to avoid and minimize disturbance to roosting greater and lesser sandhill cranes within the nearby Stone Lakes National Wildlife Refuge, shall be implemented during construction. It shall be reflected in Project improvement plans to the satisfaction of the City Development Services Department and Public Works Department:

- ▶ If construction activities will occur during the sandhill crane overwintering season (September 15–March 15), construction noise shall be reduced such that the noise level does not exceed 50 A-weighted decibels (dBA) equivalent continuous sound level (L_{eq}) (1 hour) at the nearest roost site in Stone Lakes National Wildlife Refuge, as shown in Draft EIR Figure 3.3-1, during nighttime hours (i.e., from 1 hour before sunset to 1 hour after sunrise). The dBA L_{eq} is a measurement used to characterize noise levels in loud environments. The result is expressed in dBA, a weighted decibel scale that filters frequency components to roughly imitate the hearing profile of the human ear. This can be accomplished by limiting construction activities that may result in noise levels exceeding 50 dBA at the roost site to daytime only (from 1 hour after sunrise to 1 hour before sunset).

Significance after Mitigation

Less than significant.

Impact 3.3-2: Loss of Special-Status and Common Migratory Bird Species from Bird Strikes as a Result of Helicopter Operation and Hospital Building Design

Project implementation would result in construction of a new hospital building that is 261 feet in height and helicopter trips to and from the hospital. Both of these conditions would be novel to local bird populations, including migratory waterbirds, and sandhill cranes using the Stone Lakes National Wildlife Refuge and nearby nesting Swainson's hawks. Bird collisions with the new 261-foot-tall building, as well as bird strikes with helicopters operating in the vicinity of the Project site, may result in injury or mortality of special-status and common migratory birds. Implementation of Mitigation Measures 3.3-2a, 3.3-2b, 3.3-2c, 3.3-2d, and 3.3-2e would reduce the potentially significant impact on birds as a result of building strikes, nighttime lighting, and helicopter operation because it would require minimization of artificial lighting and glare; compliance with the Leadership in Energy and Environmental Design (LEED) Pilot Credit 55 for bird collision deterrence, the use of helicopter landing site lighting that would minimize impacts on wildlife; seasonal restrictions and altitude and airspeed restrictions for helicopter operation; and consultation with CDFW, an incidental take permit, and potential compensatory mitigation for impacts on Swainson's hawk as a result of helicopter operation. Therefore, this impact would be mitigated to **less than significant**.

The Project site is developed and is generally surrounded by urban, commercial, and residential development. However, Stone Lakes National Wildlife Refuge is located directly west of the Project site on the west side of I-5 and south of the Project site on the east side of I-5, separated by a residential area. Stone Lakes National Wildlife Refuge includes an approximately 17,600-acre area characterized by grasslands, riparian forests, freshwater lakes, freshwater sloughs, perennial wetlands, seasonal wetlands, and vernal pools (USFWS 2019). The Morrison Creek/Stone Lakes and nearby Cosumnes River areas make up the largest remaining complex of natural wetlands, lakes, and riparian habitat of importance to waterfowl (e.g., ducks, geese) in the Sacramento–San Joaquin Delta (CVHJV 1990). Wetland habitats within Stone Lakes National Wildlife Refuge provide habitat for thousands of shorebirds and waterfowl every year (USFWS 2007).

In addition to hosting large numbers of shorebirds and waterfowl, Stone Lakes National Wildlife Refuge provides habitat for wildlife species during sensitive life history periods, including breeding, resting (i.e., loafing), sleeping (i.e., roosting), and foraging (Freis, pers. comm., 2020; Figure 3.3-1). There are several known, active heron, egret, and double-crested cormorant rookeries within approximately 2.3 miles north and 1.2 miles southwest of the Project site (Freis, pers. comm., 2020; Figure 3.3-1). These species nest colonially in trees, typically close to water sources (e.g., streams, lakes).

The State-listed and fully protected greater sandhill crane, CDFW species of special concern lesser sandhill crane, and various shorebird and waterfowl species are known to roost within wetland areas and areas adjacent to lakes on the

refuge, and some of these roost sites are less than 0.2 mile west of the Project site (Freis, pers. comm., 2020; Figure 3.3-1). Several of these roost sites are within a few hundred feet of the I-5 corridor. Stone Lakes National Wildlife Refuge is one of five major roost complexes in the Delta region (Ivey et al. 2016). The entire refuge complex, including the easement on the east side of I-5, provides foraging and loafing habitat for sandhill cranes, long-billed curlews (*Numenius americanus*), and white-faced ibises (*Plegadis chihi*) (Freis, pers. comm., 2020). Habitat within Stone Lakes National Wildlife Refuge supports 300–350 greater sandhill cranes in winter and is one of the most important winter use locations in the Central Valley (USFWS 2007). Additional habitat for sandhill cranes is present within the Bufferlands, approximately 1.6 miles north of the Project site; however, large roosts are not known to occur at the Bufferlands. As discussed previously, Swainson's hawks and burrowing owls are also known to occur within the refuge (CNDDDB 2019; Freis, pers. comm., 2020). Birds in the region would be expected to use the habitat provided by Stone Lakes National Wildlife Refuge on both sides of I-5, and to move between the properties, over I-5, frequently.

Bird Collisions with Buildings

Planned buildout of the Project would include construction of a 261-foot-tall hospital building that would be 11 stories tall, or more than 200 feet taller than the current tallest building on-site and the tallest structure in the vicinity. This would constitute a significant change in the landscape of the Project site and would be a novel element to local wildlife, especially birds. An analysis of the best available bird mortality data concluded that between 104,000 and 1.6 million birds are killed as a result of collisions with high-rise buildings (i.e., greater than 11 stories tall) annually across the United States (Loss et al. 2014).

The amount of glass in a building, especially untreated glass, is the strongest predictor of the risk of bird collisions (American Bird Conservancy 2015). Under certain conditions, glass on buildings can form a mirror, reflecting sky, clouds, or nearby habitat attractive to birds. Under other conditions, glass may appear transparent or black, which birds may perceive as an unobstructed route (American Bird Conservancy 2015). If placed in front of ground level windows, landscaping (e.g., shrubs, trees) can be reflected in these windows, causing birds to collide with the building (American Bird Conservancy 2015). Bird-friendly building-design strategies include (1) using minimal glass, (2) placing glass behind some type of screening (e.g., netting, screens, grilles, shutters, exterior shades), and (3) using glass with inherent properties that reduce collisions (American Bird Conservancy 2015).

The proposed hospital building design for the CNU hospital addresses some of these strategies. Although glass windows would be present, the entire façade of the building would not be composed entirely of glass. Glass windows would be interspersed with aluminum composite panel wall cladding, which would break up glass reflections and reduce overall transparency. Vertical aluminum perforated sunshades would also be incorporated in association with glass windows in the patient towers. Sunshades would further reduce reflection and create a visual indication of a barrier.

Although most bird collisions occur during the day, some avian species migrate at night, and artificial night lighting on buildings may result in disorientation, potential collisions, changes in animal behavior (e.g., foraging behavior, communication), and an increased likelihood of predation. Artificial night lighting on buildings as a result of Project implementation would include lighting from inside of the hospital, additional exterior lighting, lights associated with the helicopter landing site, and building lighting for air navigation safety. Light escaping from the inside of the hospital through windows would be blocked to a degree by aluminum sunshades. Additional exterior ground level lighting for the Project would be directed downward and shielded to prevent excessive light pollution, indirectly reducing adverse effects on birds. Additional details about proposed artificial lighting are discussed in Section 3.1, "Aesthetics." The proposed helicopter landing site would have additional artificial night lighting, including special-colored lighting for the proposed helicopter landing site, potential beacon lighting, and air navigation lighting.

The building design measures described above would reduce the extent of bird collisions with the new hospital building; however, bird strikes would likely still occur. Additionally, because the new hospital building would be located between two units of Stone Lakes National Wildlife Refuge that birds regularly move between, the risk of collisions is greater than if suitable habitat were not present on both sides of the Project site. A review study that examined published literature regarding bird collisions with buildings in the United States concluded that the bird species with the greatest risk of collision with buildings include hummingbirds and other common songbird species

(Loss et al. 2014). The same study concluded that geese, ducks, and herons, all which are known to occur within Stone Lakes National Wildlife Refuge, have a comparatively low risk of collision with buildings (Loss et al. 2014). Special-status bird species like Swainson's hawk, white-tailed kite, and burrowing owl may be less likely to collide with buildings than other bird species because of greater visual acuity. Documentation of greater sandhill cranes colliding with buildings is not readily available; however, the species is known to collide with high-voltage power lines (Murphy et al. 2016). Although potentially less likely than other species, Swainson's hawk, white-tailed kite, burrowing owl, and sandhill crane may collide with the new hospital building.

Helicopter Bird Strikes

The planned hospital would also include a helicopter landing site on the top of CNU Tower 1 at the northwest corner of the Project site. The helicopter landing site would serve only to transfer patients from one site to another, and helicopters would not be permanently stored at the hospital. The flight paths to and from the helistop would follow I-5 unless this is not feasible because of a life-threatening emergency or other safety issues (see Chapter 2, "Project Description," for further details on helicopter operations).

Wildlife strikes with aircraft are always fatal to the bird or other wildlife species, and they typically result in significant damage to the aircraft, economic loss from this damage, and potential injury or loss of life to pilots and passengers in these aircraft. The number of wildlife strikes reported per year to the Federal Aviation Administration (FAA), which is an underestimate because of the voluntary nature of the reporting, increased steadily from about 1,800 in 1990 to 16,000 in 2018 (FAA 2019a). Bird strike risk increases during typical migration periods (March through April, and August through November), and analysis of the FAA wildlife strike database suggests that most strikes occur from July through October (FAA 2019b; Dolbeer et al. 2015). Bird strikes are most common during the day, and most bird strikes occur at altitudes of 100 feet or lower above ground level (AGL) (Dolbeer et al. 2015). The risk of bird strikes declines by approximately 32–44 percent for every 1,000-foot gain AGL (Dolbeer et al. 2018). However, ducks and geese are often observed at altitudes greater than 7,000 feet AGL, and bird strikes at higher altitudes are common during migration (FAA 2019b). Additionally, Swainson's hawks have been documented at altitudes greater than 2,000 feet during migration (Kerlinger and Gauthreaux 1985). Most reported helicopter bird strikes occur during the en route flight phase (FAA 2017).

As described above, Stone Lakes National Wildlife Refuge provides habitat for thousands of shorebirds and waterfowl every year, as well as breeding, roosting, loafing, and foraging habitat for heron, egret, double-crested cormorant, greater and lesser sandhill cranes, Swainson's hawk, white-tailed kite, and burrowing owl (USFWS 2007; Freis, pers. comm., 2020; Figure 3.3-1). Several of the known rookeries and roosting areas are directly adjacent to the proposed helicopter flight path along I-5. The habitats described are present within both portions of the refuge on the west and east sides of I-5, and birds routinely move between the two properties, through the proposed helicopter flight path. There is a known Swainson's hawk nest approximately 0.2 mile northwest of the Project site, and directly adjacent to the proposed helicopter flight path. Some additional special-status bird species that were determined unlikely to occur on the Project site may occasionally forage within Stone Lakes National Wildlife Refuge and may use the airspace in the vicinity of the Project site, including bald eagle (*Haliaeetus leucocephalus*) and American peregrine falcon (*Falco peregrinus*) (USFWS 2003).

The FAA requests that pilots maintain a minimum altitude of 2,000 feet AGL over national wildlife refuges in its *Aeronautical Information Manual* (FAA 2019b). Additionally, the FAA Rotorcraft Bird Strike Working Group concluded that avoiding airspeeds above 80 nautical miles per hour (knots) in areas of known high avian concentration would reduce the likelihood of bird strikes (FAA 2017). The working group recommended that the following text be included in all rotorcraft flight manuals (FAA 2017):

CAUTION: Operating rotorcraft in areas of high concentrations of birds or flocking birds increases likelihood of a damaging bird strike as airspeed increases and altitude AGL decreases. When operating the rotorcraft at lower altitudes during takeoff and climb-out, the rotorcraft should be operated at lower airspeeds to decrease the likelihood and severity of a potential bird strike. Though regional differences exist during spring and fall migration periods, operating a rotorcraft at altitudes below 2,500 feet AGL may increase the likelihood of a damaging bird strike during those seasons.

Because bird strikes can result in significant damage to an aircraft and potential death to the pilot, crew, and passengers, it is reasonable to assume that helicopter pilots would generally implement measures to avoid bird strikes. Helicopters approaching and departing the hospital would inherently be flying lower than 2,000 feet AGL. As discussed previously, there are several known Swainson's hawk nests adjacent to the proposed flight path, including one approximately 0.2 mile west of the Project site, where a helicopter would presumably be descending during approach to the hospital and ascending during departure. Noise associated with an approaching or departing helicopter is not expected to be significantly greater than existing conditions adjacent to I-5 (i.e., automobile traffic noise), as supported by a recent helicopter noise report (SM&W 2020), and it is possible that Swainson's hawks nesting adjacent to the proposed flight path have become acclimated to a baseline of anthropogenic noise. However, the discrete, sudden sound of a helicopter descending or ascending nearby may result in a disturbance response from a nesting Swainson's hawk different from that created by the consistent vehicle noise emitted from I-5. Additionally, the existing ambient noise is concentrated along I-5, whereas helicopter flights may potentially fly directly over a nest during emergencies that necessitate flying over the refuge. An approaching or departing helicopter would be a novel visual stimulus to a nesting Swainson's hawk, and it is possible that this stimulus would cause agitation or would cause a hawk to flush from its nest, especially if the helicopter flies closer to the nest than the I-5 corridor. The proximity of this nest to the proposed flight path increases the risk of a Swainson's hawk flushing and being killed as a result of a collision with an approaching or departing helicopter. Additionally, the novel and repetitive disturbance source may result in abandonment of an established Swainson's hawk nest site.

As described above, several known rookery, roosting, loafing, and foraging sites in Stone Lakes National Wildlife Refuge are close to the proposed helicopter flight path (Freis, pers. comm., 2020; Figure 3.3-1). The sound and visual stimulus of a helicopter overflight, especially at night, may result in the flushing of a large number of roosting birds, including sandhill cranes, geese, and shorebirds. The proximity of these areas, which are known to be occupied by large numbers of birds, increases the risk of helicopter collisions with birds, including special-status birds, likely resulting in mortality. Additionally, the novel and repetitive disturbance source may result in abandonment of established rookeries and roosting areas within the refuge.

Summary

Project design features would reduce the risk of bird strikes, including incorporating building design features and minimizing nighttime lighting. However, there is a residual risk that birds, including special-status birds and common bird species, would collide with the new hospital building. Mortality of common songbirds as a result of building collisions is not expected to eliminate or reduce local songbird populations below self-sustaining levels; however, the magnitude of mortality resulting from building collisions is difficult to predict. Collisions of special-status bird species with the new hospital building may lead to mortality of individuals. Implementation of Mitigation Measures 3.3-2a, 3.3-2b, and 3.3-2c would reduce the potentially significant impact on birds as a result of building strikes and nighttime lighting because it would require minimization of artificial lighting and glare; compliance with the LEED Pilot Credit 55 for bird collision deterrence, and helicopter landing site lighting requirements that would minimize impacts on wildlife.

Mortality of a Swainson's hawk, white-tailed kite, sandhill crane, and other special-status birds may occur as a result of a collision with a helicopter or abandonment of an established nest, rookery, or roosting site as a result of helicopter disturbance associated with the Project. Implementation of Mitigation Measures 3.3-2d and 3.3-2e would reduce the potentially significant impact on birds as a result of helicopter operation because it would require seasonal restrictions and altitude and airspeed restrictions for helicopter operation; and consultation with CDFW, an incidental take permit, and potential compensatory mitigation for impacts on Swainson's hawk as a result of helicopter operation.

With incorporation of these mitigation measures, this impact would be **less than significant**.

Mitigation Measures

Mitigation Measure 3.3-2a: Implement Mitigation Measure 3.1-3: Minimize Light and Glare from Hospital Building

Mitigation Measure 3.3-2b: Comply with U.S. Green Building Council Pilot Credit 55 as Part of Leadership in Energy and Environmental Design Certification

Consistent with its AB 900 application, the Project, upon completion, shall qualify for LEED Gold certification or better. Qualification for LEED Gold certification includes commitments to various green building strategies.

The Project Applicant shall include Pilot Credit 55, "Bird Collision Deterrence," as part of the LEED certification process. This credit was crafted by the American Bird Conservatory and is their preferred guideline for building designers. To qualify for Pilot Credit 55, the Project Applicant must demonstrate that building façade, site features, and exterior lighting are "bird friendly" through calculating the overall "Bird Collision Threat Rating" based on established threat factor ratings. Threat factor ratings are based on various features, including but not limited to building materials, building size, and photometric characteristics of lighting to make the building visible as a physical barrier and eliminate conditions that create confusing reflections to birds. Additionally, Pilot Credit 55 requires development of a 3-year postconstruction monitoring plan to monitor the effectiveness of the buildings and site design in preventing bird collisions, including potential design solutions and a process for corrective action. This mitigation measure shall be implemented consistently with the performance standards in Mitigation Measure 3.1-3.

Prior to issuance of plan approval or building permit by the California Office of Statewide Health Planning and Development Facilities Development Division, the Project Applicant shall submit the site plan, architectural elevations, and lighting plans to the City Development Services Department to verify compliance with this measure. The Project Applicant shall also provide a copy of the 3-year postconstruction monitoring plan and identification of any corrective actions to address bird strikes to the City Development Services Department.

Mitigation Measure 3.3-2c: Use Flashing Lighting on the Helicopter Landing Site

Prior to issuance of plan approval or building permit by the California Office of Statewide Health Planning and Development Facilities Development Division, the Project Applicant shall submit the final hospital building plans to the City Development Services Department to verify compliance with this measure:

- ▶ Beacon lighting associated with the proposed helicopter landing site shall flash several times per minute rather than burn steadily consistent with Federal Aviation Administration standards and guidance. Steadily burning lights have been shown to attract birds more than flashing lights (FAA 2012).

Mitigation Measure 3.3-2d: Implement Seasonal Helicopter Flight Restrictions, Altitude Restrictions, and Airspeed Restrictions over Stone Lakes National Wildlife Refuge

The following requirements shall be contained with the Conditional Use Permit associated with the operation of the helistop. The Project Applicant shall provide annual reporting demonstrating compliance with these requirements to the City Development Services Department:

- ▶ During the sandhill crane overwintering season (September 15 through March), helicopters arriving at or departing from the hospital from 1 hour before sunset to 1 hour after sunrise shall avoid flying adjacent or over the known sandhill crane roost sites shown in Draft EIR Figure 3.3-1.
- ▶ Every year, prior to the start of the nesting season for Swainson's hawk and white-tailed kite, a qualified biologist shall determine the locations of active nests for both species within Stone Lakes National Wildlife Refuge and other areas within 0.5 mile of the hospital. Nest locations shall be determined through focused surveys and through consultation with refuge biologists at Stone Lakes National Wildlife Refuge.

If active Swainson's hawk or white-tailed kite nests are detected within Stone Lakes National Wildlife Refuge or other areas within 0.5 mile of the Project site, the qualified biologist shall map the nest locations and a 0.5-mile buffer around each nest and shall provide this map to the Project Applicant. The Project Applicant shall prepare and publish a graphic illustration "handout" for assisting helicopter pilots which depicts the recommended arrival and departure

flight tracts for helicopters using the helicopter landing site. Helicopters shall avoid flying over these nests or within the 0.5-mile buffer around the nests when arriving or departing the hospital. Helicopters shall avoid these areas until the nests are no longer active (e.g., chicks have fledged), as verified by a qualified biologist.

- ▶ Helicopters shall operate at altitudes of 2,000 feet or greater AGL when flying over or adjacent to any portion of Stone Lakes National Wildlife Refuge, except for during final descent into the helicopter landing area. If altitudes lower than 2,000 feet AGL are required because of weather conditions or other safety issues, the helicopter pilot shall operate over nonrefuge areas.
- ▶ Helicopters shall operate at speeds no greater than 80 knots when flying over or adjacent to any portion of Stone Lakes National Wildlife Refuge. If speeds greater than 80 knots are required because of safety concerns, the helicopter pilot shall operate over nonrefuge areas.

The Project Applicant shall provide these operation restrictions to all helicopter service providers in a manual or other documentation and require that helicopters comply with these restrictions. Proof of this documentation shall be provided to the City Development Services Department prior to operation of the helistop.

Mitigation Measure 3.3-2e: Consult with CDFW and Obtain an Incidental Take Permit for Potential Loss of Swainson's Hawks from Helicopter Strikes

Prior to operation of helistop at the hospital, the Project Applicant shall consult with CDFW to determine whether there are additional avoidance measures available that would reduce the likelihood of helicopter strikes by nearby nesting Swainson's hawks or that would reduce risk of abandonment of active Swainson's hawk nest sites, and whether an incidental take permit pursuant to California Fish and Game Code Section 2081 would be required for take of Swainson's hawk. If the permit is required, the Project Applicant shall implement measures required under the permit, which may include compensatory mitigation for impacts on a Swainson's hawk territory and potential loss of an active nest site. Compensatory mitigation may include participation in the City Municipal Code Chapter 16.130 (Swainson's Hawk Impact Mitigation Fees), in-lieu purchase of credits at a CDFW-approved mitigation bank in Sacramento County or off-site habitat creation, or restoration through a conservation easement. Impact minimization may also include a program to identify and monitor active nests during the nesting season in collaboration with CDFW. Documentation of compliance with this mitigation measure shall be provided to the City Development Services Department prior to helistop operation.

Significance after Mitigation

Less than significant.

Impact 3.3-3: Interference with Resident or Migratory Wildlife Corridors or Native Wildlife Nursery Sites

Project implementation would largely include activities on a previously developed site that is not currently serving as a wildlife corridor and that does not contain native wildlife nursery sites. The Project site is, however, close to Stone Lakes National Wildlife Refuge, which is an important stopover and wintering area for migrating waterfowl, shorebirds, and greater sandhill cranes. Building design features would reduce some of the risk of bird-building collisions. However, Project implementation, namely construction of the new hospital building, may disrupt resident or migratory wildlife corridors, and operation of helicopters may result in adverse effects, including abandonment of native wildlife nursery sites or important wintering sites. Implementation of Mitigation Measures 3.3-3a, 3.3-3b, 3.3-3c, and 3.3-3d would reduce the potentially significant impact on migratory wildlife corridors and rookeries and roost sites in Stone Lakes National Wildlife Refuge associated with building strikes, nighttime lighting, and helicopter operation to a **less-than-significant** level because it would require minimization of artificial lighting and glare, the use of lighting that would minimize impacts on wildlife, minimization of landscaping (e.g., trees and shrubs) adjacent to ground level windows, and seasonal restrictions and altitude and airspeed restrictions for helicopter operation.

The Project site is entirely developed except for an approximately 0.5-acre vacant lot on the southwest corner of Riparian Court and West Taron Drive and an approximately 0.75-acre vacant lot along West Taron Drive north of Riparian Court. The developed portion of the site contains buildings, paved parking areas, paved roads, walkways,

and landscaping. Both undeveloped lots have been previously graded and contain landscaping or gravel. The gravel area is used for parking by patrons of existing retail shops and restaurants.

Stone Lakes National Wildlife Refuge, which includes the land west of the Project site and some undeveloped land south and east of the Project site, has been identified as an Essential Connectivity Area (ECA) and a Natural Landscape Block by the California Department of Transportation and CDFW Essential Habitat Connectivity Project (Spencer et al. 2010). Portions of the Project site overlap with this ECA and Natural Landscape Block. There are significant barriers to terrestrial movement between the Project site and the core of the ECA in Stone Lakes National Wildlife Refuge, including I-5, other roads, urban development, and residential development. The Project site does not contain natural habitat and likely does not provide terrestrial habitat connectivity to the surrounding area. It also does not contain wildlife nursery sites (e.g., heron rookery).

As discussed above, under Impact 3.3.2, Stone Lakes National Wildlife Refuge provides habitat for thousands of shorebirds and waterfowl migrating along the Pacific Flyway every year (USFWS 2007). This habitat is distributed across the refuge, which includes the portion west of the Project site and the portion south of the Project site that is separated from the main portion of the refuge by a residential area. Migratory birds, including waterfowl, shorebirds, and sandhill cranes, use the entire refuge and likely fly over I-5 regularly to access habitat in these different portions of the refuge. There are several known heron, egret, and double-crested cormorant rookeries and important roosting sites in Stone Lakes National Wildlife Refuge (Freis, pers. comm., 2020). Project implementation involves construction of a 261-foot-tall hospital building in these established wildlife movement corridors and may potentially disrupt movement of avian species. Migratory bird species are presumably already flying over developed areas of Elk Grove and the greater Sacramento Valley, including over residential and urban areas. However, the proposed hospital building would be a novel feature on the landscape, and despite existing design features discussed in Impact 3.3-2 that would reduce the risk of bird-building strikes, the construction of the new hospital building may prohibit or discourage migrating or transiting birds from moving between suitable habitat areas. Additionally, as described above under Impact 3.3-2, helicopter operation along the proposed helicopter flight path may result in disturbance to established rookeries and roosting sites, which may result in abandonment of these sites. Helicopter operations and light trespass may also disturb wintering sandhill cranes in the adjacent refuge, causing them to abandon this important wintering habitat.

Implementation of Mitigation Measures 3.3-3a, 3.3-3b, 3.3-3c, and 3.3-3d would reduce the potentially significant impact on migratory wildlife corridors and rookeries and roost sites in Stone Lakes National Wildlife Refuge associated with building strikes, nighttime lighting, and helicopter operation to a **less-than-significant** level because it would require minimization of artificial lighting and glare, compliance with the LEED Pilot Credit 55 for bird collision deterrence, use of helicopter landing site lighting that would minimize impacts on wildlife, and seasonal restrictions and altitude and airspeed restrictions for helicopter operation.

Mitigation Measures

Mitigation Measure 3.3-3a: Implement Mitigation Measure 3.1-2: Minimize Light and Glare from Hospital Building

Mitigation Measure 3.3-3b: Implement Mitigation Measure 3.3-2a: Comply with U.S. Green Building Council Pilot Credit 55 as Part of Leadership in Energy and Environmental Design Certification

Mitigation Measure 3.3-3c: Implement Mitigation Measure 3.3-2c: Use Flashing Lighting on the Helicopter Landing Site

Mitigation Measure 3.3-3d: Implement Mitigation Measure 3.3-2d: Implement Seasonal Helicopter Flight Restrictions, Altitude Restrictions, and Airspeed Restrictions over Stone Lakes National Wildlife Refuge

Significance after Mitigation

Less than significant.

Impact 3.3-4: Consistency with Local Plans and Policies

The Project would not remove any trees designated as trees of local importance under City of Elk Grove Municipal Code Chapter 19.12: Tree Preservation and Protection. Implementation of Mitigation Measure 3.3-4 would require identification and protection measures for trees of local importance and would avoid potential trees impacts to a **less-than-significant** level.

As required under City of Elk Grove Municipal Code Chapter 19.12: Tree Preservation and Protection (see full discussion of this code in Section 3.3.1, "Regulatory Setting"), the Project Applicant prepared an arborist report that identified and mapped all trees within the Project site; determined whether any trees qualified as regulated trees under the Municipal Code (i.e., landmark trees, trees of local importance, secured trees, trees on City property); and determined the size, health, and condition of all the trees (Fong & Chan Architects 2019). The Project site contains eight trees considered trees of local importance that would be located in Phase 2, and all are coast live oak (*Quercus agrifolia*) with DBH greater than 6 inches (Fong & Chan Architects 2019). The Project site does not contain any landmark trees, secured trees, or trees on City property (Fong & Chan Architects 2019).

Project implementation would result in removal of up to 313 trees within the Project site, as well as three off-site trees within the Elk Grove Boulevard median as part of the construction of the emergency left-turn pocket. However, the Project but would not remove the eight trees considered trees of local importance. Implementation of Mitigation Measure 3.3-4 would ensure that these trees are identified and protected during construction activities. Therefore, implementation of this mitigation measure would reduce this potential impact to **less than significant**.

Mitigation Measures

Mitigation Measure 3.3-4: Implement Protection Measures for Trees of Local Importance

Project improvement plans for each phase shall identify the location of the eight coastal live oak trees that meet the definition of a tree of local importance and shall specify measures to avoid damage to these trees. This shall include at a minimum protective fencing and signage. These plans shall be provided to the City Development Services Department for review and verification of this measure prior to the start of the construction activities.

Significance after Mitigations

Less than significant.

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3.4 CULTURAL AND TRIBAL CULTURAL RESOURCES

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

Archaeological resources are locations where human activity has measurably altered the earth or left deposits of prehistoric or historic-era physical remains (e.g., stone tools, bottles, former roads, house foundations). Historical (or architectural) resources include standing buildings (e.g., houses, barns, outbuildings, cabins) and intact structures (e.g., dams, bridges, roads, districts), or landscapes. A cultural landscape is defined as a geographic area (including both cultural and natural resources and the wildlife therein), associated with a historic event, activity, or person or exhibiting other cultural or aesthetic values. Tribal cultural resources are sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe.

Comment letters received in response to the NOP generally expressed concern regarding discovery of prehistoric and historic-era resources, as well as any tribal cultural resources, during Project construction activities. This issue is addressed in this section.

3.4.1 Regulatory Setting

FEDERAL

National Register of Historic Places

The National Register of Historic Places (NRHP) is the nation’s master inventory of known historic properties. It is administered by the National Park Service and includes listings of buildings, structures, sites, objects, and districts that possess historic, architectural, engineering, archaeological, or cultural significance at the national, state, or local level.

The formal criteria (36 CFR 60.4) for determining NRHP eligibility are as follows:

1. The property is at least 50 years old (however, properties under 50 years of age that are of exceptional importance or are contributors to a district can also be included in the NRHP).
2. It retains integrity of location, design, setting, materials, workmanship, feeling, and association.
3. It possesses at least one of the following characteristics:
 - Criterion A Is associated with events that have made a significant contribution to the broad patterns of history (events).
 - Criterion B Is associated with the lives of persons significant in the past (persons).
 - Criterion C Embodies the distinctive characteristics of a type, period, or method of construction; represents the work of a master; possesses high artistic values; or represents a significant, distinguishable entity whose components may lack individual distinction (architecture).
 - Criterion D Has yielded, or may be likely to yield, information important in prehistory or history (information potential).

Listing in the NRHP does not entail specific protection or assistance for a property, but it does guarantee recognition in planning for federal or federally assisted projects, eligibility for federal tax benefits, and qualification for federal historic preservation assistance. Additionally, project effects on properties listed in the NRHP must be evaluated under CEQA.

The National Register Bulletin also provides guidance in the evaluation of archaeological site significance. If a heritage property cannot be placed within a particular theme or time period, and thereby lacks “focus,” it is considered not eligible for listing in the NRHP. In further expanding on the generalized NRHP criteria, evaluation standards for linear features (such as roads, trails, fence lines, railroads, ditches, and flumes) are considered in terms of four related criteria that account for specific elements that define engineering and construction methods of linear features: (1) size and length, (2) presence of distinctive engineering features and associated properties, (3) structural integrity, and (4) setting. The highest probability for NRHP eligibility exists in the intact, longer segments, where multiple criteria coincide.

Cultural and Historic Landscapes

Under the NRHP, historic properties may be defined as sites, buildings, structures (such as bridges or dams), objects, or districts, including cultural or historic landscapes. A cultural landscape differs from a historic building or district in that it is understood through the spatial organization of the property, which is created by the landscape’s cultural and natural features. Some features may create viewsheds or barriers (such as a fence), and others may create spaces or “rooms” (such as an arrangement of buildings and structures around a lawn area). Some features, such as grading and topography, underscore the site’s development in relationship to the natural setting. To be listed in the NRHP, a cultural landscape must meet one of the four evaluation criteria and must retain its integrity.

A cultural landscape is defined as “a geographic area, including both cultural and natural resources and the wildlife or domestic animals therein, associated with a historic event, activity, or person or exhibiting other cultural or aesthetic values” (NPS 2006:157). There are four general types of cultural landscapes—historic sites, historic designed landscapes, historic vernacular landscapes, and ethnographic landscapes—and they are not mutually exclusive:

- ▶ A historic site is a landscape significant for its association with a historic event, activity, or person. Examples include battlefields and a president’s house properties.
- ▶ A historic designed landscape is a landscape that was consciously designed or laid out by a landscape architect, master gardener, architect, or horticulturist according to design principles or by an amateur gardener working in a recognized style or tradition. The landscape may be associated with a significant person, trend, or event in landscape architecture, or it may illustrate an important development in the theory and practice of landscape architecture. Aesthetic values play a significant role in designed landscapes. Examples include parks, campuses, and estates.
- ▶ A historic vernacular landscape is a landscape that evolved through use by the people whose activities or occupancy shaped that landscape. Such a landscape reflects the social and cultural attitudes of an individual, a family, or a community, as well as the physical, biological, and cultural character of everyday lives. Function plays a significant role in vernacular landscapes. They can be a single property, such as a farm, or a collection of properties, such as a district of historic farms along a river valley. Examples include rural villages, industrial complexes, and agricultural landscapes.
- ▶ An ethnographic landscape is a landscape containing a variety of natural and cultural resources that associated people define as heritage resources. Examples are contemporary settlements, religious sacred sites, and massive geological structures. Small plant communities, animals, subsistence, and ceremonial grounds are often components.

Historic landscapes include residential gardens and community parks, scenic highways, rural communities, institutional grounds, cemeteries, battlefields, and zoological gardens. They are composed of character-defining features that individually or collectively contribute to the landscape’s physical appearance as they have evolved over time. In addition to vegetation and topography, cultural landscapes may include water features, such as ponds, streams, and fountains; circulation features, such as roads, paths, steps, and walls; buildings; and furnishings, including fences, benches, lights, and sculptural objects.

STATE

California Register of Historical Resources

All properties in California that are listed in or formally determined eligible for listing in the NRHP are eligible for listing in the California Register of Historical Resources (CRHR). The CRHR is a listing of State of California resources that are significant in the context of California's history. It is a Statewide program with a scope and with criteria for inclusion similar to those used for the NRHP. In addition, properties designated under municipal or county ordinances are also eligible for listing in the CRHR.

A historic resource must be significant at the local, State, or national level under one or more of the criteria defined in the California Code of Regulations Title 15, Chapter 11.5, Section 4850 to be included in the CRHR. The CRHR criteria are tied to CEQA because any resource that meets the criteria below is considered a significant historical resource under CEQA. As noted above, all resources listed in or formally determined eligible for listing in the NRHP are automatically listed in the CRHR.

The CRHR uses four evaluation criteria:

1. Is associated with events that have made a significant contribution to the broad patterns of local or regional history or the cultural heritage of California or the United States.
2. Is associated with the lives of persons important to local, California, or national history.
3. Embodies the distinctive characteristics of a type, period, region, or method of construction; represents the work of a master; or possesses high artistic values.
4. Has yielded, or has the potential to yield, information important to the prehistory or history of the local area, California, or the nation.

Similar to the NRHP, a resource must meet one of the above criteria and retain integrity to be listed in the CRHR. The CRHR uses the same seven aspects of integrity used by the NRHP.

California Environmental Quality Act

CEQA requires public agencies to consider the effects of their actions on "historical resources," "unique archaeological resources," and "tribal cultural resources." Pursuant to PRC Section 21084.1, a "project that may cause a substantial adverse change in the significance of an historical resource is a project that may have a significant effect on the environment." Section 21083.2 requires agencies to determine whether projects would have effects on unique archaeological resources.

Historical Resources

"Historical resource" is a term with a defined statutory meaning (PRC Section 21084.1; State CEQA Guidelines Sections 15064.5[a] and [b]). Under State CEQA Guidelines Section 15064.5(a), historical resources include the following:

- 1) A resource listed in, or determined to be eligible by the State Historical Resources Commission for listing in, the CRHR (PRC Section 5024.1).
- 2) A resource included in a local register of historical resources, as defined in PRC Section 5020.1(k) or identified as significant in a historical resource survey meeting the requirements of PRC Section 5024.1(g), will be presumed to be historically or culturally significant. Public agencies must treat any such resource as significant unless the preponderance of evidence demonstrates that it is not historically or culturally significant.
- 3) Any object, building, structure, site, area, place, record, or manuscript that a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California may be considered to be a historical resource, provided the lead agency's determination is supported by substantial evidence in light of the whole record. Generally, a resource will be considered by the lead agency to be historically significant if the resource meets the criteria for listing in the CRHR (PRC Section 5024.1).

- 4) The fact that a resource is not listed in or determined to be eligible for listing in the CRHR, not included in a local register of historical resources (pursuant to PRC Section 5020.1[k]), or identified in a historical resources survey (meeting the criteria in PRC Section 5024.1[g]) does not preclude a lead agency from determining that the resource may be a historical resource as defined in PRC Sections 5020.1(j) or 5024.1.

Unique Archaeological Resources

CEQA also requires lead agencies to consider whether projects will affect unique archaeological resources. PRC Section 21083.2(g) states that “unique archaeological resource” means an archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets one or more of the following criteria:

1. Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information.
2. Has a special and particular quality, such as being the oldest of its type or the best available example of its type.
3. Is directly associated with a scientifically recognized important prehistoric or historic event or person.

Tribal Cultural Resources

CEQA also requires lead agencies to consider whether projects will affect tribal cultural resources. PRC Section 21074 states:

- a) “Tribal cultural resources” are either of the following:
 - 1) Sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are either of the following:
 - A) Included or determined to be eligible for inclusion in the California Register of Historical Resources.
 - B) Included in a local register of historical resources as defined in subdivision (k) of Section 5020.1.
 - 2) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Section 5024.1. In applying the criteria set forth in subdivision (c) of Section 5024.1 for the purposes of this paragraph, the lead agency shall consider the significance of the resource to a California Native American tribe.
- b) A cultural landscape that meets the criteria of subdivision (a) is a tribal cultural resource to the extent that the landscape is geographically defined in terms of the size and scope of the landscape.
- c) A historical resource described in Section 21084.1, a unique archaeological resource as defined in subdivision (g) of Section 21083.2, or a “nonunique archaeological resource” as defined in subdivision (h) of Section 21083.2 may also be a tribal cultural resource if it conforms with the criteria of subdivision (a).

California Native American Historical, Cultural, and Sacred Sites Act

The California Native American Historical, Cultural, and Sacred Sites Act (PRC Section 5097.9) applies to both State and private lands. The act requires, upon discovery of human remains, that construction or excavation activity cease and that the county coroner be notified. If the remains are those of a Native American, the coroner must notify the Native American Heritage Commission (NAHC), which notifies and has the authority to designate the most likely descendant (MLD) of the deceased. The act stipulates the procedures the descendants may follow for treating or disposing of the remains and associated grave goods.

Health and Safety Code, Sections 7050.5 and 7052

Section 7050.5 of the Health and Safety Code requires that construction or excavation be stopped in the vicinity of discovered human remains until the coroner can determine whether the remains are those of a Native American. If they are determined to be those of a Native American, the coroner must contact NAHC. Section 7052 states that the disturbance of Native American cemeteries is a felony.

Public Resources Code Section 5097

PRC Section 5097 specifies the procedures to be followed if human remains are unexpectedly discovered on nonfederal land. The disposition of Native American burial falls within the jurisdiction of NAHC. Section 5097.5 of the code states:

No person shall knowingly and willfully excavate upon, or remove, destroy, injure, or deface any historic or prehistoric ruins, burial grounds, archaeological or vertebrate paleontological site, including fossilized footprints, inscriptions made by human agency, or any other archaeological, paleontological or historical feature, situated on public lands, except with the express permission of the public agency having jurisdiction over such lands. Violation of this section is a misdemeanor.

Public Resources Code Section 21080.3

AB 52, signed by the California governor in September 2014, established a new class of resources under CEQA: "tribal cultural resources," defined in PRC Section 21074. Pursuant to PRC Sections 21080.3.1, 21080.3.2, and 21082.3, lead agencies undertaking CEQA review must, upon written request of a California Native American tribe, begin consultation before the release of an EIR, negative declaration, or mitigated negative declaration.

LOCAL

City of Elk Grove General Plan

Chapter 7, "Community and Resource Protection," of the *City of Elk Grove General Plan* (City of Elk Grove 2019) contains the following policies relevant to cultural and tribal cultural resources:

- ▶ **Policy HR-1-1:** Encourage the appropriate adaptive reuse of historic resources and buildings.
- ▶ **Policy HR-1-2:** Strive to preserve historic buildings and resources through adaptive re-use.
- ▶ **Policy HR-1-3:** Encourage efforts that prevent the misuse, disrepair, and demolition of historic resources and buildings.
- ▶ **Policy HR-2-1:** Protect and preserve prehistoric and historic archaeological resources throughout the City.
- ▶ **Policy HR 2-2:** Consult when appropriate with local Native American tribes, the California Native American Heritage Commission, and any other appropriate organizations and individuals to minimize potential impacts to cultural and tribal resources.
- ▶ **Policy HR 2-3:** Identify and evaluate local archaeological resources for inclusion in the National Register of Historic Places.
- ▶ **Policy HR 2-4:** Ensure that City ordinances, programs, and policies create an environment that fosters the preservation, rehabilitation, and maintenance of historic, archaeological, and tribal resources.
- ▶ **Policy HR 3-2:** Encourage new development to be compatible with adjacent existing historic structures in terms of scale, massing, building material, and general architectural treatment.

3.4.2 Environmental Setting

REGIONAL PREHISTORY

Prehistoric occupation in the Sacramento Valley is commonly subdivided into distinct time periods, each of which is marked by various adaptive patterns and geographical distributions.

The Paleo-Archaic-Emergent cultural sequence is broken into three broad periods: the Paleoindian period (11,550–8550 before current era [BCE]); the three-staged Archaic period, consisting of the Lower Archaic (8550–5550 BCE), Middle Archaic (5550–550 BCE), and Upper Archaic (550 calibrated years (cal) BCE–cal AD 1100); and the Emergent period (AD 1100–Historic).

The Paleo period began with the first entry of people into California. These people probably subsisted mainly on big game and minimally processed plant foods and had no trade networks. Current research, however, indicates more sedentism, plant processing, and trading than previously believed. The Archaic period is characterized by increased use of plant foods, elaboration of burial and grave goods, and increasingly complex trade networks. The Emergent period is marked by the introduction of the bow and arrow; the ascendance of wealth-linked social status; and the elaboration and expansion of trade networks, signified in part by the appearance of clam disk bead money.

The Sacramento Valley has had many population movements and waves of cultural influence from neighboring regions. The valley was settled by native Californians at the end of the Pleistocene (approximately 11,500–7,500 years ago). Hokan speakers may have been the earliest occupants of the San Joaquin Valley, eventually becoming displaced by migrating Penutian speakers (ancestral Yokuts) coming from outside California. The Penutians most likely entered the San Joaquin Valley in several minor waves, slowly replacing the original Hokan speakers, causing the Hokan speakers to migrate to the periphery of the valley. By about AD 300–500, the Penutian settlement of the Sacramento Valley was complete (City of Elk Grove 2018).

ETHNOGRAPHY

The Project site is located in the Plains Miwok territory. The Plains Miwok are one of four Eastern Miwok groups. Linguistically, the Plains Miwok were part of the eastern group of the two subdivisions of Miwokan speakers. Plains Miwok territory included the lower Mokelumne River, the Cosumnes River, and the Sacramento River from Rio Vista to Sacramento. The Sierra Nevada foothills formed the eastern boundary; the western boundary was between Fairfield and the Sacramento River.

The Plains Miwok were seasonal hunter-gatherers with semipermanent settlements. Their territory included a main village and smaller satellite villages. Villages were divided into tribelets, which averaged 300–500 individuals and controlled specific lands and the natural resources in the territory. The main village included a large semisubterranean or simple circular brush structure that served as the dance or assembly house. Villages also contained dwellings, acorn granaries, conical sweathouses, and winter grinding houses. Dwellings were either aboveground conical houses made with tule-matting or semisubterranean. Winter villages were located on high ridges near watercourses. Cremation, rather than interment, was practiced by the Plains Miwok.

As it was for many other Native American groups in California, the acorn was the primary food staple of the Plains Miwok, supplemented by fish, shellfish, waterfowl, and large and small mammals. Acorns were collected in the late fall/early winter and stored in the conical-shaped granaries before they were processed. Large and small animals regularly hunted by the Plains Miwok included deer, elk, pronghorn, rabbits, squirrels, beaver, and woodrats. Salmon were an important fish resource, along with sturgeon and lamprey.

The Plains Miwok used a variety of tools for hunting and collecting resources, including the bow and arrow, snares, traps, enclosures or blinds, nets, seines, hook and line, harpoons, and basketry. On navigable rivers, the principal watercraft was the tule balsa canoe. The Plains Miwok made both twined and coiled basketry and used woven burden baskets to transport seeds, roots, or nuts for processing or storage. Tools used to process food included bedrock mortars, cobblestone pestles, anvils, and portable stone mortars and pestles to grind or mill acorns and seeds. Food preparation involved use of a variety of knives, leaching and boiling baskets, woven strainers and winnowers, and woven drying trays. Earth ovens were used to bake acorn bread.

Trade goods included marine shell (*olivella* and abalone) and steatite with coastal groups; basketry from various areas; and salt and obsidian from the Sierra Nevada and Great Basin.

The Native American population in the Sacramento Valley first came into contact with Spanish explorers in the late 1700s as the Franciscan missions sought converts. Plains Miwok converts were sent to Mission San José in the early 1800s. Many labored in large ranchos awarded during the Mexican period.

During two epidemics, in 1830 and 1837, foreign diseases decimated the populations of indigenous people in the Sacramento Valley. The discovery of gold in 1848 and the ensuing Gold Rush also contributed to substantial population declines. Between 1805 and 1856, the Miwok population declined from nearly 20,000 to approximately 3,000. Surviving Miwok labored for the growing mining, ranching, farming, and lumber industries (City of Elk Grove 2018).

HISTORIC SETTING

Regional History

In the 18th century, California became a territory of Spain and later of Mexico. In the mid-1840s, Mexico's interest in developing and strengthening its hold on California decreased as the Mexican government became distracted by political developments in central Mexico. The native-born Spanish speakers of Alta California, known as Californios, long accustomed to governmental neglect, experienced relative peace and enjoyed minimal intrusion into their social, political, and economic affairs. During this period, the United States aggressively sought access to the Pacific Ocean, resulting in the Mexican-American War.

Following the American victory and ratification of the Treaty of Guadalupe Hidalgo in 1848, California became a United States territory, and on September 9, 1850, it formally joined the Union as the 31st state. Sacramento County was one of the original 27 California counties established by the legislature in the same year.

Following the discovery of gold at Sutter's Mill on the American River in January 1848, the region surrounding Sutter's Fort was inundated with prospectors from around the world. Sacramento sprang up as a boomtown in 1848 in direct response to the gold discovery. Its location at the confluence of the Sacramento and American Rivers provided excellent access to San Francisco's shipping routes, and it was relatively close to the gold fields in the Sierra Nevada foothills, which led Sacramento to become an important transportation and trading center for those destined for the northern mines (City of Elk Grove 2018).

Project Area History

During the Gold Rush, both Sacramento and Stockton served as convenient departure points for the mining camps in the Sierra Nevada foothills. The Monterey Trail, an important California transportation route connecting Sacramento to Stockton and eventually to Monterey, passed through the area now occupied by Elk Grove. The trail, also known as the Lower Stockton and Upper Stockton Roads, increased traffic through the area and provided business opportunities, including a network of stage stops and hotels along Upper Stockton Road. The Elk Grove House, the first hotel and stage stop in what is now Elk Grove, was opened in 1850 by English immigrant James Watson Hall. The hotel, which ultimately served as the namesake for the area, was located in the immediate vicinity of what is today Elk Grove Regional Park.

By the mid-1850s, many discouraged gold miners turned to ranching or farming to meet the agricultural demands of California's growing population. Business pursuits in the area shifted from the service industry to ranching and farming. The principal agricultural output of the region included cattle, sheep, wheat, and barley until the late 19th century.

Railroad transportation, introduced to the area in 1868, was much faster than transportation by stage and allowed agricultural production to shift to more perishable fruit products. As a result, area farmers experimented with peach, plum, apricot, fig, lemon, and prune orchards, as well as vineyards and nut orchards.

In the 20th century, strawberries emerged as an important agricultural product. In addition, ranching, dairying, nut and fruit production, and the production of wine grapes became more prominent agricultural industries (City of Elk Grove 2018).

RECORDS SEARCHES, SURVEYS, AND CONSULTATION

On December 10, 2019, a records search of the Project site, which includes the off-site improvement areas, and the area within 1 mile of the site was conducted at the North Central Information Center (NCIC), at California State University, Sacramento. The following information was reviewed as part of the records search:

- ▶ NRHP and CRHR,
- ▶ California Office of Historic Preservation Historic Property Directory,
- ▶ California Inventory of Historic Resources,
- ▶ California State Historic Landmarks,
- ▶ California Points of Historical Interest, and
- ▶ a historic properties reference map.

One previously recorded resource, P-24-5225, was identified within 1 mile of the Project site, and it extends into the site. P-24-5225 is a tribal cultural landscape identified by contemporary Nisenan as Hoyo Sayo/Tah Sayo and contemporary Plains Miwok as Wake-ce/Waka-Ly. The resource is defined by an approximately 55-mile-long corridor of the Lower Sacramento River. The feature is described as a landscape encompassing waterways, tule habitat, fisheries, and other wildlife from approximately Knights Landing in the north to approximately Sherman Island in the south. It has been recommended that this feature be eligible for listing in the NRHP under Criterion A (InContext 2020).

An additional 13 surveys have been conducted within the larger 1-mile radius of the Project site boundary. A total of seven other sites and features have been identified within the 1-mile radius. These include prehistoric sites and burials, as well as two historic features (InContext 2020).

Archaeological Features

No prehistoric or historic-era archaeological sites, materials, or features were identified in the records search or during the March 18, 2020, survey of the Project site (InContext 2020). Therefore, no archaeological resources are located on the site.

Historic Features

No historic-era built environment structures, features, or sites were identified in the records search or during the March 13, 2020, survey of the Project site (InContext 2020). Therefore, there are no historical resources on the site.

Tribal Cultural Resources

Native American Consultation

Pursuant to AB 52, the following tribes have requested Project notification by the City:

- ▶ Steven Hutchason, executive director, Wilton Rancheria;
- ▶ Gene Whitehouse, chairperson, United Auburn Indian Community;
- ▶ Rhonda Morningstar Pope, Buena Vista Rancheria;
- ▶ Yvonne Miller, Ione Band of Miwok Indians; and
- ▶ Regina Cueller, chairperson, Shingle Springs Band of Miwok Indians.

The City mailed notification letters to these tribal representatives on February 26, 2020. The Shingle Springs Band of Miwok Indians, Buena Vista Rancheria, and United Auburn Indian Community (UAIC) have either indicated a low potential for tribal cultural resources or no known tribal cultural resources on the Project site. Shingle Springs Band of Miwok Indians and UAIC have requested Project documentation related to cultural records searches, surveys, and technical studies. The tribes have also requested notification upon discovery of tribal cultural resources and

archaeological resources during construction. No other tribes have formally responded or requested consultation under AB 52.

On May 15, 2020, the City provided copies of the Cultural Resources Study to UAIC and the Shingle Springs Band of Miwok Indians. UAIC responded and requested photographs of the project area, which the City provided on May 22, 2020. UAIC also provided their desired mitigation measures to the City.

As described above, P-24-5225 was identified and described as a cultural landscape through the records search conducted on December 10, 2019. According to the documentation for the resources, the tribal cultural landscape is a culturally significant natural landscape for its association with the cultural practices and beliefs of the Nisenan and Plains Miwok, maintaining the continuing cultural identity of the living descendants and contributing to the broader patterns of prehistory. The setting (landscape), while it has been heavily altered over the past century, still retains enough of the character-defining elements (waterways, tule, fisheries, and other wildlife) to convey the significance of this resource (InContext 2020).

3.4.3 Impacts and Mitigation Measures

METHODOLOGY

The impact analysis for archaeological and historical resources is based on the findings and recommendations of *CEQA Cultural Resources Study: Proposed California Northstate University Medical Center Campus Project* (InContext 2020). Additionally, information related to tribal cultural resources is based on findings reported in the NAHC database search, as well as the results of Native American consultation under AB 52. The analysis is also informed by the provisions and requirements of federal, State, and local laws and regulations that apply to cultural resources.

PRC Section 21083.2(g) defines a “unique archaeological resource” as an archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets one or more of the following CRHR-related criteria: (1) that it contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information; (2) that it has a special and particular quality, such as being the oldest of its type or the best available example of its type; or (3) that it is directly associated with a scientifically recognized important prehistoric or historic event or person. An impact on a resource that is not unique is not a significant environmental impact under CEQA (State CEQA Guidelines Section 15064.5[c][4]). If an archaeological resource qualifies as a resource under CRHR criteria, then the resource is treated as a unique archaeological resource for the purposes of CEQA.

PRC Section 21074 defines “tribal cultural resources” as “sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe” that are listed or determined eligible for listing in the CRHR, listed in a local register of historical resources, or otherwise determined by the lead agency to be a tribal cultural resource.

For the purposes of the impact discussion, “historical resource” is used to describe built-environment historic-era resources. Archaeological resources (both prehistoric and historic), which may qualify as “historical resources” pursuant to CEQA, are analyzed separately from built-environment historical resources.

THRESHOLDS OF SIGNIFICANCE

An impact on cultural resources would be significant if implementation of the Project would:

- ▶ cause a substantial adverse change in the significance of a historical resource under Section 15064.5 of the State CEQA Guidelines;
- ▶ cause a substantial adverse change in the significance of an archaeological resource under Section 15064.5 of the State CEQA Guidelines;

- ▶ 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: a) 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 b) 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.
- ▶ disturb any human remains, including those interred outside of dedicated cemeteries.

ISSUES NOT DISCUSSED FURTHER

As described above, no historic-age (at least 50 years old) structures or buildings have been identified on the Project site. Therefore, Project construction and operation would have no impact on historical resources. This issue is not analyzed further.

ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Impact 3.4-1: Cause a Substantial Adverse Change in the Significance of Archaeological Resources

Implementation of the Project would result in demolition of on-site structures, construction of a new medical center campus and associated facilities and amenities, and construction of off-site transportation and utility improvements. Although no known archaeological resources have been identified on the Project site or in the areas identified for off-site improvements, Project-related ground-disturbing activities may result in the discovery or damage of yet undiscovered archaeological resources as defined in State CEQA Guidelines Section 15064.5. Implementation of Mitigation Measures 3.4-1a and 3.4-1b would reduce this impact to a **less-than-significant** level by requiring that a worker environmental awareness program be prepared and provided to all construction personnel and supervisors who will have the potential to encounter and alter heritage and cultural resources, requiring construction to halt if potential archaeological resources are discovered, coordination with Native American groups (if applicable), implementation of preservation options (including data recovery, mapping, capping, or avoidance), and proper curation if significant artifacts are recovered.

As indicated through the results of a records search and pedestrian surveys, no known prehistoric or historic-era archaeological sites are present on the Project site or in the areas identified for off-site improvements. However, several archaeological sites and materials have been identified within 1 mile of the Project site through the records search. Therefore, the archaeological sensitivity of the Project area, including the Project site, is considered high (InContext 2020).

As described in Chapter 2, "Project Description," implementing the Project would result in demolition of site structures and construction of an expanded pharmacy and medical college, a hospital, associated medical office buildings, aboveground and belowground parking, commercial and public uses, and student housing (dormitory). Off-site improvements would involve upgrades to nearby traffic and utility infrastructure. Implementation of the Project would involve preconstruction- or construction-related ground-disturbing activities that may result in the discovery of unrecorded archaeological sites and materials. Earth-moving activities conducted before and during construction may damage or destroy previously undiscovered unique archaeological resources. Further, construction of underground parking facilities and basements may extend up to 20 feet below surface level and would involve removal of native soils, which may increase the potential for discovering prehistoric and historic-era archaeological resources. Damage to or destruction of any archaeological materials, sites, or features would result in a substantial adverse change to the significance of the resource.

Implementation of Mitigation Measures 3.4-1a and 3.4-1b would reduce this impact to a **less-than-significant** level by requiring that a worker environmental awareness program be prepared and provided to all construction personnel and supervisors who will have the potential to encounter and alter heritage and cultural resources, requiring construction to halt if potential archaeological resources are discovered, coordination with Native American groups (if applicable), implementation of preservation options (including data recovery, mapping, capping, or avoidance), and proper curation if significant artifacts are recovered. This would be consistent the General Plan Policy HR-2-1.

Mitigation Measures

Mitigation Measure 3.4-1a: Develop and Implement a Worker Environmental Awareness Program

The Project Applicant shall retain a qualified professional archaeologist meeting the Secretary of the Interior's Professional Qualification Standards for archaeologists to prepare a worker environmental awareness program. The program shall be provided to all construction personnel and supervisors who will have the potential to encounter and alter heritage and cultural resources. A copy of the worker environmental awareness program shall be provided to the City Development Services Department before construction activities begin. The topics to be addressed in the worker environmental awareness program will include, at a minimum:

- ▶ types of cultural resources expected on the Project site;
- ▶ types of evidence that indicates cultural resources might be present (e.g., ceramic shards, lithic scatters);
- ▶ what to do if a worker encounters a possible resource;
- ▶ what to do if a worker encounters bones or possible bones; and
- ▶ penalties for removing or intentionally disturbing heritage and cultural resources, such as those identified in the Archaeological Resources Protection Act.

Mitigation Measure 3.4-1b: Procedures for Discovery of Subsurface Archaeological Features and Tribal Cultural Resources

If any prehistoric or historic-era subsurface archaeological features or deposits (e.g., ceramic shard, trash scatters), including locally darkened soil ("midden"), which may conceal cultural deposits, are discovered during construction, all ground-disturbing activity within 100 feet of the resources shall be halted, and a qualified professional archaeologist meeting the Secretary of the Interior's Professional Qualification Standards for archaeology shall be retained to assess the significance of the find. If the qualified archaeologist determines the archaeological material to be Native American in nature, the City shall contact the appropriate California Native American tribe. A tribal representative from a California Native American tribe that is traditionally and culturally affiliated with a geographic area may make recommendations for further evaluation and treatment as necessary, and for input on the preferred treatment of the find. If the find is determined to be significant by the archaeologist or the tribal representative (i.e., because it is determined to constitute a unique archaeological resource or a tribal cultural resource, as appropriate), the archaeologist and tribal representative, as appropriate, shall develop, and the City shall implement, appropriate procedures to protect the integrity of the resource and ensure that no additional resources are affected. Procedures may include but would not necessarily be limited to preservation in place (which shall be the preferred manner of mitigating impacts on archaeological and tribal sites), archival research, subsurface testing, or contiguous block unit excavation and data recovery (when it is the only feasible mitigation, and pursuant to a data recovery plan). No work at the discovery location shall resume until all necessary investigation and evaluation of the resource has been satisfied. This requirement shall be placed on Project improvement plans and will be verified by the City Development Services Department.

Significance after Mitigation

Less than significant.

Impact 3.4-2: Cause a Substantial Adverse Change in the Significance of a Tribal Cultural Resource

Tribal consultation has not resulted in the identification of tribal cultural resources on the Project site. However, previously recorded tribal resource P-24-5225 was identified during the NCIC records search. Additionally, excavation activities associated with Project construction may disturb or destroy previously undiscovered significant subsurface tribal cultural resources. Implementation of Mitigation Measure 3.4-2 would reduce impacts related to tribal cultural resources to **less than significant** by requiring that a worker environmental awareness program be prepared and provided to all construction personnel and supervisors who will have the potential to encounter and alter heritage and cultural resources, requiring construction to halt if potential archaeological resources are discovered, coordination with Native American groups (if applicable), implementation of preservation options (including preservation in place, data recovery, mapping, capping, or avoidance), and proper curation if significant artifacts are recovered.

As discussed under "Native American Consultation," the City of Elk Grove sent tribal consultation letters to the following representatives and tribes:

- ▶ Steven Hutchason, executive director, Wilton Rancheria;
- ▶ Gene Whitehouse, chairperson, United Auburn Indian Community;
- ▶ Rhonda Morningstar Pope, Buena Vista Rancheria;
- ▶ Yvonne Miller, lone Band of Miwok Indians; and
- ▶ Regina Cueller, chairperson, Shingle Springs Band of Miwok Indians.

Tribal consultation did not result in the identification of tribal cultural resources on the Project site. However, previously recorded tribal resource P-24-5225 was identified during the NCIC records search. In addition, seven prehistoric sites and features have been identified within 1 mile of the Project site as described previously under "Records Searches, Surveys, and Consultation," and the Project area has been determined to be highly sensitive for the presence of tribal cultural resources. As noted in Chapter 2, "Project Description," the Project site is developed with urban uses (office and commercial uses with surface parking) and does not retain any of the landscape features associated with P-24-5225 (e.g., landscape encompassing waterways, tule habitat, fisheries, and other wildlife).

P-24-5225 is a tribal cultural landscape identified by contemporary Nisenan as Hoyo Sayo/Tah Sayo and contemporary Plains Miwok as Wake-ce/Waka-Ly. No tribe expressed concern related to this resource during the consultation period; however, UAIC did request mitigation measures for inadvertent discoveries, which have been incorporated.

Implementation of the Project would involve construction and excavation activities associated with expansion of existing CNU facilities during each of the three identified Project phases (see Chapter 2, "Project Description"). Further, off-site improvements related to transportation and utility upgrades would result in ground disturbance and excavation activities. Although the Project site is developed, and past construction activities may have damaged or removed subsurface tribal cultural resources, there is the potential for subsurface resources, including significant resources that would qualify as a tribal cultural resource, to be present where there has been less ground disturbance (e.g., subsurface resources that have been disturbed by previous development) or where native soils are still intact. Components of the Project and off-site improvements that require earth-moving and excavation may disturb or destroy previously undisturbed and significant prehistoric tribal cultural deposits.

Implementation of Mitigation Measure 3.4-2 would reduce impacts related to unknown tribal cultural resources to a **less-than-significant** level by requiring that a worker environmental awareness program be prepared and provided to all construction personnel and supervisors who will have the potential to encounter and alter heritage and cultural resources, requiring construction to halt if potential archaeological resources are discovered, coordination with Native American groups (if applicable), implementation of preservation options (including preservation in place, data recovery, mapping, capping, or avoidance), and proper curation if significant artifacts are recovered.

Mitigation Measures

Mitigation Measure 3.4-2a: Implement Mitigation Measure 3.4-1a

Mitigation Measure 3.4-2b: Implement Mitigation Measure 3.4-1b

Significance after Mitigation

Less than significant.

Impact 3.4-3: Disturb Human Remains

The results of the NCIC records search indicate that prehistoric human interments are present in the vicinity of the Project site and the locations of off-site improvements. Ground-disturbing construction activities resulting from Project implementation may disturb or destroy previously undiscovered human remains. Compliance with California Health and Safety Code Sections 7050.5 and 7052 and PRC Section 5097, as outlined in Mitigation Measure 3.4-3, would provide an opportunity to avoid or minimize the disturbance of human remains and to appropriately treat any remains that are discovered. Therefore, this impact would be **less than significant** with mitigation incorporated.

The results of the NCIC records search indicate that prehistoric human interments are present in the vicinity of the Project site and the locations of off-site improvements. Ground-disturbing construction activities resulting from Project implementation may disturb or destroy previously undiscovered human remains.

California law recognizes the need to protect Native American human burials, skeletal remains, and items associated with Native American burials from vandalism and inadvertent destruction. The procedures for the treatment of Native American human remains are described in Health and Safety Code Sections 7050.5 and 7052 and PRC Section 5097.98.

The results of the NCIC records search identified prehistoric burials within 1 mile of the Project site. Grave sites and Native American remains can be located outside of identified cemeteries or burial sites. Therefore, there is a possibility that unmarked, previously unknown Native American or other graves may be present on the Project site and may be uncovered by Project-related construction activities, as well as off-site improvements.

Compliance with California Health and Safety Code Sections 7050.5 and 7052 and PRC Section 5097, as outlined in Mitigation Measure 3.4-3, would provide an opportunity to avoid or minimize the disturbance of human remains and to appropriately treat any remains that are discovered. Therefore, this impact would be **less than significant** with mitigation incorporated.

Mitigation Measures

Mitigation Measure 3.4-3: Implement Response Protocol If Human Remains Are Uncovered

Consistent with California Health and Safety Code Sections 7050.5 and 7052 and PRC Section 5097, if suspected human remains are discovered, ground-disturbing activities in the area of the remains shall be halted immediately, and the Sacramento County coroner shall be notified immediately. The responsibilities for acting upon notification of a discovery of Native American human remains are specifically identified in PRC Section 5097.94. If the remains are determined by the coroner to be Native American, the NAHC shall be notified within 24 hours, and the guidelines of the NAHC shall be adhered to in the treatment and disposition of the remains. Following the coroner's findings, the NAHC-designated MLD and the landowner shall determine the ultimate treatment and disposition of the remains and take appropriate steps to ensure that additional human interments, if present, are not disturbed. This requirement shall be included in Project improvement plans and will be verified by the City Development Services Department.

Significance after Mitigation

Less than significant.

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3.5 ENERGY

This section was prepared pursuant to State CEQA Guidelines Section 15126 and Appendix G of the State CEQA Guidelines, which require that EIRs include a discussion of the potential energy impacts of projects. The analysis considers whether implementing the Project would result in an environmental impact from the inefficient, wasteful, or unnecessary consumption of energy. The capacity of existing and proposed infrastructure to serve the Project is evaluated in Section 3.15, "Utilities and Service Systems."

Comments received in response to the NOP pertaining to energy requested that the Project's anticipated energy consumption be disclosed and that energy efficiency features, particularly those associated with the State's building code, be incorporated into the Project. Anticipated energy consumption is quantified, and Project features that would increase energy efficiency and allow on-site renewable energy generation are described in the analysis below.

3.5.1 Regulatory Setting

FEDERAL

Energy Policy and Conservation Act and CAFE Standards

The Energy Policy and Conservation Act of 1975 (Public Law 94-163) established nationwide fuel economy standards to conserve oil. Pursuant to this act, the National Highway Traffic and Safety Administration, part of the U.S. Department of Transportation (DOT), is responsible for revising existing fuel economy standards and establishing new vehicle economy standards.

The Corporate Average Fuel Economy (CAFE) program was established to determine vehicle manufacturer compliance with the government's fuel economy standards. Compliance with the CAFE standards is determined based on each manufacturer's average fuel economy for the portion of its vehicles produced for sale in the country. The U.S. Environmental Protection Agency (EPA) calculates a CAFE value for each manufacturer based on the city and highway fuel economy test results and vehicle sales. The CAFE values are a weighted harmonic average of the EPA city and highway fuel economy test results. DOT is authorized to assess penalties for noncompliance based on information generated under the CAFE program.

On August 2, 2018, the National Highway Traffic Safety Administration and EPA proposed the Safer Affordable Fuel-Efficient Vehicles Rule (SAFE Rule) (49 Code of Federal Regulations [CFR] 523, 531, 533, 536, 537 and 40 CFR 85 and 86). The final SAFE Rule was signed on March 30, 2020. Details regarding the SAFE Rule are included in Section 3.7, "Greenhouse Gas Emissions and Climate Change."

Energy Policy Act of 1992 and 2005

The Energy Policy Act of 1992 (EPAct) (16 U.S.C. 46 Section 2601) was passed to reduce the country's dependence on foreign petroleum and improve air quality. The EPAct includes several parts intended to build an inventory of alternative fuel vehicles (AFVs) in large, centrally fueled fleets in metropolitan areas. It requires certain federal, state, and local government and private fleets to purchase a percentage of light-duty AFVs capable of running on alternative fuels each year. In addition, financial incentives are included in the EPAct. Federal tax deductions are allowed for businesses and individuals to cover the incremental cost of AFVs. States are also required by the act to consider a variety of incentive programs to help promote AFVs. The Energy Policy Act of 2005 provides renewed and expanded tax credits for electricity generated by qualified energy sources, such as landfill gas; provides bond financing, tax incentives, grants, and loan guarantees for clean renewable energy and rural community electrification; and establishes a federal purchase requirement for renewable energy.

Energy Independence and Security Act of 2007

The Energy Independence and Security Act of 2007 (Public Law 110-140) is designed to improve vehicle fuel economy and help reduce U.S. dependence on oil. It represents a major step forward in expanding the production of renewable fuels, reducing dependence on oil, and confronting global climate change. The act also increases the supply of alternative fuel sources by setting a mandatory Renewable Fuel Standard requiring fuel producers to use at least 36 billion gallons of biofuel in 2022, which represents a nearly fivefold increase over current levels, and reduces U.S. demand for oil by setting a national fuel economy standard of 35 miles per gallon by 2020—an increase in fuel economy standards of 40 percent.

STATE

Warren-Alquist Act

The 1975 Warren-Alquist Act (PRC Section 25000) established the California Energy Resources Conservation and Development Commission, now known as the California Energy Commission (CEC). The act established State policy to reduce wasteful, uneconomical, and unnecessary uses of energy by employing a range of measures. The California Public Utilities Commission regulates privately owned utilities in the energy, rail, telecommunications, and water fields.

State of California Energy Action Plan

CEC is responsible for preparing the State Energy Plan, which identifies emerging trends related to energy supply, demand, conservation, public health and safety, and the maintenance of a healthy economy. The current plan is the 2003 California Energy Action Plan (2008 update). The plan calls for the State to assist in the transformation of the transportation system to improve air quality, reduce congestion, and increase the efficient use of fuel supplies with the least environmental and energy costs. To further this policy, the plan identifies a number of strategies, including assistance to public agencies and fleet operators in implementing incentive programs for zero-emission vehicles and addressing their infrastructure needs, as well as encouragement of urban design that reduces vehicle miles traveled (VMT) and accommodates pedestrian and bicycle access.

Assembly Bill 2076: Reducing Dependence on Petroleum

Pursuant to Assembly Bill (AB) 2076 (Chapter 936, Statutes of 2000), CEC and the California Air Resources Board (CARB) prepared and adopted a joint agency report in 2003, *Reducing California's Petroleum Dependence* (CEC and CARB 2003). Included in this report are recommendations to increase the use of alternative fuels to 20 percent of on-road transportation fuel use by 2020 and 30 percent by 2030, significantly increase the efficiency of motor vehicles, and reduce per capita VMT (CEC and CARB 2003). Further, in response to CEC's 2003 and 2005 *Integrated Energy Policy Reports*, Governor Davis directed CEC to take the lead in developing a long-term plan to increase alternative fuel use. A performance-based goal of AB 2076 was to reduce petroleum demand to 15 percent below 2003 demand by 2030.

Integrated Energy Policy Report

Senate Bill (SB) 1389 (Chapter 568, Statutes of 2002) required CEC to "conduct assessments and forecasts of all aspects of energy industry supply, production, transportation, delivery and distribution, demand, and prices. The Energy Commission shall use these assessments and forecasts to develop energy policies that conserve resources, protect the environment, ensure energy reliability, enhance the State's economy, and protect public health and safety" (PRC Section 25301[a]). This work culminated in the Integrated Energy Policy Report (IEPR).

CEC adopts an IEPR every 2 years and an update every other year. The 2019 IEPR, which was adopted January 21, 2020, is the most recent IEPR. The 2019 IEPR provides a summary of priority energy issues currently facing the State, outlining strategies and recommendations to further the State's goal of ensuring reliable, affordable, and environmentally responsible energy sources. Energy topics covered in the report include identifying progress toward Statewide renewable energy targets and issues facing future renewable development; increasing energy efficiency in existing and new buildings; achieving energy efficiency targets and potential by utilities; improving coordination among the State's energy agencies; streamlining power plant licensing processes; documenting results of preliminary forecasts of electricity, natural gas, and transportation fuel supply and demand; identifying future energy

infrastructure needs; meeting the need for research and development efforts to Statewide energy policies; and identifying issues facing California's nuclear power plants.

Legislation Associated with Electricity Generation

The State passed legislation requiring the increasing use of renewable energy to produce electricity for consumers. California utilities are required to generate 33 percent of their electricity from renewables by 2020 (SB X1-2 of 2011) (Public Utilities Code [PUC] Section 399.30), 52 percent by 2027 (SB 100 of 2018) (PUC Section 454.53), 60 percent by 2030 (also SB 100 of 2018), and 100 percent by 2045 (also SB 100 of 2018). More detail about these regulations is provided in Section 3.7, "Greenhouse Gas Emissions and Climate Change."

Senate Bill 350: Clean Energy and Pollution Reduction Act of 2015

The Clean Energy and Pollution Reduction Act of 2015 (SB 350) (Health and Safety Code Section 44258.5) establishes energy efficiency targets that achieve Statewide, cumulative doubling of the energy efficiency savings in electricity and natural gas uses by the end of 2030.

Assembly Bill 1007: State Alternative Fuels Plan

AB 1007 (Chapter 371, Statutes of 2005) required CEC to prepare a State plan to increase the use of alternative fuels in California. CEC prepared the State Alternative Fuels Plan (SAF Plan) in partnership with CARB and in consultation with other State agencies, as well as federal and local agencies. The SAF Plan presents strategies and actions California must take to increase the use of alternative nonpetroleum fuels in a manner that minimizes the costs to California and maximizes the economic benefits of in-State production. The SAF Plan assessed various alternative fuels and developed fuel portfolios to meet California's goals to reduce petroleum consumption, increase alternative fuel use, reduce greenhouse gas (GHG) emissions, and increase in-State production of biofuels without causing a significant degradation of public health and environmental quality.

California Building Energy Efficiency Standards (Title 24, Part 6)

The energy consumption of new nonresidential buildings in California is regulated by the California Energy Code (California Code of Regulations Title 24 Part 6). The California Energy Code was established by CEC in 1978 in response to a legislative mandate to create uniform building codes to reduce California's energy consumption, as well as provide energy efficiency standards for residential and nonresidential buildings. CEC updates the California Energy Code every 3 years with more stringent design requirements for reduced energy consumption, which results in the generation of fewer GHG emissions.

The 2019 California Energy Code, which was adopted by CEC on May 9, 2018, will apply to projects constructed after January 1, 2020. Nonresidential buildings constructed after that date are anticipated to consume 30 percent less energy as compared to nonresidential buildings constructed under the 2016 California Energy Code, primarily through prescriptive requirements for high-efficiency lighting (CEC 2018). The Energy Code is enforced through the local plan check and building permit process. Local government agencies may adopt and enforce additional energy standards for new buildings as reasonably necessary related to local climatologic, geologic, or topographic conditions, provided that these standards exceed those provided in the California Energy Code.

Legislation Associated with Greenhouse Gas Reduction

The State has passed legislation that aims to reduce GHG emissions. The legislation often has an added benefit of reducing energy consumption. SB 32 requires a Statewide GHG emission reduction of at least 40 percent below 1990 levels by no later than December 31, 2030 (Health and Safety Code Section 38566). Executive Order S-3-05 sets a long-term target of reducing Statewide GHG emissions by 80 percent below 1990 levels by 2050.

SB 375 (Chapter 728, Statutes of 2008) aligns regional transportation planning efforts, regional GHG emission reduction targets, and land use and housing allocation. The Advanced Clean Cars program (Health and Safety Code Section 43018.5), approved by CARB, combines the control of GHG emissions and criteria air pollutants and the increase in the number of zero-emission vehicles into a single package of standards. The program's zero-emission

vehicle regulation requires battery, fuel cell, and/or plug-in hybrid electric vehicles to account for up to 15 percent of California's new vehicle sales by 2025.

Implementation of the State's legislation associated with GHG reduction will have the co-benefit of reducing California's dependency on fossil fuel and making land use development and transportation systems more energy efficient.

More details about legislation associated with GHG reduction are provided in the regulatory setting of Section 3.7, "Greenhouse Gas Emissions and Climate Change."

Assembly Bill 900

In September 2011, Governor Brown signed the Jobs and Economic Improvement through Environmental Leadership Act, which required the governor to establish procedures for applying for streamlined environmental review under CEQA for projects that meet certain requirements (PRC Section 21181). The Governor's Office of Planning and Research has provided approved guidelines for submitting applications for streamlined environmental review pursuant to the act. One of the statutory requirements of the act is the achievement of a Gold rating from the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED) rating system. Additionally, all projects seeking CEQA streamlining under the act must demonstrate that the project would achieve at least 15 percent greater transportation efficiency, as defined in PRC Section 21180(c), than comparable projects. AB 900 certification also requires the project to achieve no net increase in GHG emissions, which incentivizes reduced energy consumption to meet such a target.

LOCAL

City of Elk Grove

General Plan

The following policies from the City General Plan (City of Elk Grove 2019a) are applicable to the Project:

- ▶ **Policy NR-2-4:** Preserve and plant trees in appropriate densities and locations to maximize energy conservation and air quality benefits.
- ▶ **Policy NR-6-1:** Promote energy efficiency and conservation strategies to help residents and businesses save money and conserve valuable resources.
- ▶ **Policy NR-6-5:** Promote energy conservation measures in new development to reduce on-site emissions and seek to reduce the energy impacts from new residential and commercial projects through investigation and implementation of energy efficiency measures during all phases of design and development.
- ▶ **Policy NR-6-6:** Encourage renewable energy options that are affordable and benefit all community members.
- ▶ **Policy NR-6-7:** Encourage the use of solar energy systems in homes, commercial businesses, and City facilities as a form of renewable energy.

Climate Action Plan

The *City of Elk Grove Climate Action Plan: 2019 Update* (CAP), adopted in February 2019 and amended in December 2019 by the Elk Grove City Council, was incorporated into the most recent update to the General Plan (discussed above). The CAP includes GHG emission reduction targets, strategies, and implementation measures developed to help the City reach these targets. Reduction strategies address GHG emissions associated with transportation and land use, energy, water, waste management and recycling, agriculture, and open space. The following City goals are related to transportation and energy use (City of Elk Grove 2019b):

- ▶ Encourage or Require Green Building Practices in New Construction,
- ▶ Phase in Zero Net Energy Standards in New Construction,
- ▶ Solar Photovoltaics in New and Existing Residential and Commercial Development,

- ▶ Limit Vehicle Miles Traveled,
- ▶ Require Tier 4 Final Construction Equipment by 2030, and
- ▶ Require EV [electric vehicle] Charging Stations for All New Development.

3.5.2 Environmental Setting

PHYSICAL SETTING

Energy Facilities and Services in the Project Area

Electric services in the City of Elk Grove are provided by the Sacramento Municipal Utility District (SMUD). Natural gas services in the Project area are provided by the Pacific Gas and Electric Company (PG&E).

Energy Types and Sources

California relies on a regional power system composed of a diverse mix of natural gas, renewable, hydroelectric, and nuclear generation resources. One-third of the energy consumed in California is natural gas. In 2018, approximately 34 percent of the natural gas consumed in the State was used to generate electricity. Large hydroelectric resources generated approximately 11 percent of the electricity used, and the amount of electricity used that was generated by renewable energy from solar, wind, small hydroelectric, geothermal, and biomass combustion resources totaled 31 percent (CEC 2019a). In 2018, SMUD provided its customers with 20-percent eligible renewable energy (i.e., biomass combustion, geothermal, small-scale hydroelectric, solar, and wind) and 26 percent and 54 percent from large-scale hydroelectric and natural gas, respectively (CEC 2019b). The proportion of SMUD-delivered electricity generated from eligible renewable energy sources is anticipated to increase over the next three decades to comply with the SB 100 goals described in Section 3.5.1.

The contribution of in- and out-of-State power plants depends on the precipitation that occurred in the previous year, the corresponding amount of hydroelectric power that is available, and other factors. In 2017, commercial land uses represented approximately 40 percent of California's natural gas consumption with the balance consumed by the industrial, resource extraction, and residential sectors (EIA 2018).

Alternative Fuels

A variety of alternative fuels are used to reduce demand for petroleum-based fuel. The use of these fuels is encouraged through various Statewide regulations and plans (e.g., Low Carbon Fuel Standard, AB 32 Scoping Plan). Conventional gasoline and diesel may be replaced (depending on the capability of the vehicle) with many transportation fuels, including biodiesel, electricity, ethanol (E-10 and E-85), hydrogen, natural gas (methane in the form of compressed and liquefied natural gas), propane, renewable diesel (including biomass-to-liquid), synthetic fuels, and gas-to-liquid and coal-to-liquid fuels.

California has a growing number of alternative fuel vehicles through the joint efforts of CEC, CARB, local air districts, the federal government, transit agencies, utilities, and other public and private entities. As of March 2020, California supported almost 30,000 alternative fueling stations (AFDC 2020).

Transportation Fuels

On-road vehicles use about 90 percent of the petroleum consumed in California. The California Department of Transportation projected 782 million gallons of gasoline and diesel were consumed in Sacramento County in 2015, an increase of approximately 88 million gallons of fuel from 2010 levels (Caltrans 2008).

Vehicle Miles Traveled and Gasoline Consumption

As noted in the "Regulatory Setting" section, several State mandates and efforts, such as SB 375, seek to reduce VMT in California. Fuel consumption per capita in California decreased by nearly 11 percent from 2008 to 2011 (Bureau of Transportation Statistics 2015). Despite the progress in reducing per capita VMT and per capita fuel consumption, the

continued projected increases in total fuel consumption and VMT can be attributed to the overall increase in population. In 2018, the daily VMT in Elk Grove totaled 2,062,000, an increase of 4.8 percent over 2015 levels (Caltrans 2019, 2017). In 2019, the average fuel efficiency in Sacramento County was 38.5 miles per gallon for a gasoline-powered light-duty vehicle and 32.6 miles per gallon for a gasoline-powered light-duty truck (CARB 2019).

Energy Use and Climate Change

Scientists and climatologists have produced substantial evidence that the burning of fossil fuels by vehicles, power plants, industrial facilities, residences, and commercial facilities has led to an increase of the earth's temperature (IPCC 2014; OPR et al. 2018). For an analysis of GHG production and the Project's contribution to climate change, refer to Section 3.7, "Greenhouse Gas Emissions and Climate Change."

3.5.3 Impacts and Mitigation Measures

METHODOLOGY

Levels of construction-related energy consumption by the Project were quantified and measured in gallons of gasoline and gallons of diesel fuel. Construction of the Project would be completed over three phases lasting approximately 10 years total, with energy consumption estimated for each phase and subphase. The California Emissions Estimator Model (CalEEMod) Version 2016.3.2 was used to determine the number and types of off-road equipment required, number of haul truck trips delivering supplies, and number of construction workers who would be commuting to the Project site by Project phase. Fuel consumption associated with off-road equipment was estimated using anticipated hours per day, days per phase, horsepower, load factor, and a fuel consumption per horsepower rate provided in the South Coast Air Quality Management District's CEQA Air Quality Handbook (SCAQMD 1993). CARB's Emission Factors (EMFAC) 2017 model was then used to quantify construction-related fuel consumption for haul trucks and worker commutes based on the construction activity data provided in CalEEMod.

Operational energy consumption estimates were provided by the Project Applicant and measured in megawatt-hours of electricity, millions of British thermal units of natural gas, gallons of gasoline, and gallons of diesel fuel. Operational transportation-related fuel consumption was quantified using the Project's VMT, the region's fleet mix provided in CalEEMod, and fuel consumption rates from the EMFAC2017 model. Jet fuel associated with the helicopter was quantified using consumption rates provided in *Guidance on the Determination of Helicopter Emissions* (Rindlisbacher 2009) for the engine size and type and anticipated annual hours the helicopter would be used provided by the Project Applicant.

THRESHOLDS OF SIGNIFICANCE

An impact on energy resources would be significant if implementation of the Project would:

- ▶ result in wasteful, inefficient, or unnecessary consumption of energy resources during Project construction or operation that would cause a potentially significant effect on the environment or
- ▶ conflict with or obstruct a State or local plan for renewable energy or energy efficiency.

ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Impact 3.5-1: Wasteful, Inefficient, or Unnecessary Consumption of Energy during Project Construction or Operation

Construction and operation of Project features and off-site improvements would result in consumption of fuel (gasoline, diesel, and jet fuel), electricity, and natural gas. Energy consumption associated with construction would be temporary and would not require additional capacity or increased peak or base period demands for electricity or other forms of energy. Implementation of Mitigation Measure 3.5-1a would require the Project to obtain LEED Gold certification, Mitigation Measure 3.5-1b (Mitigation Measure 3.14-1) would require the Project to achieve at least 15-percent greater transportation efficiency than comparable projects in the City (30 percent reduction in trips), and Mitigation Measure 3.5-1c would require Project compliance with California Energy Code Tier 1 standards. Thus, through implementation of these mitigation measures, impacts related to the wasteful, inefficient, or unnecessary consumption of energy would be **less than significant**.

Appendix G of the State CEQA Guidelines requires the consideration of the energy implications of a project. CEQA requires mitigation measures to reduce “wasteful, inefficient, and unnecessary energy usage” (PRC Section 21100[b][3]). Neither the law nor the State CEQA Guidelines establish criteria that define wasteful, inefficient, or unnecessary use. Compliance with the California Energy Code would result in energy-efficient buildings. However, compliance with the California Energy Code would not address all potential energy impacts during construction and operation of the Project. Energy use is discussed by Project component below.

Construction-Related Energy

Energy would be required to demolish and construct each Project building. Energy would also be required to operate and maintain construction equipment and to produce and transport construction materials. The one-time energy expenditure required to construct buildings would be nonrecoverable. Most energy consumption would result from the use of construction equipment and vehicle trips associated with commutes by construction workers and haul trucks carrying supplies. The modeled level of energy consumption associated with construction would be 66,465 gallons of gasoline and 445,205 gallons of diesel, as shown by Project phase in Table 3.5-1, below. Details about construction phasing can be found in Appendix D. The energy needs for Project construction would be temporary and would not require additional capacity or increase peak or base period demands for electricity or other forms of energy.

Table 3.5-1 Construction-Related Energy Consumption from On-Site Improvements by Phase

Phase	Diesel (Gallons)	Gasoline (Gallons)
1	213,722	46,764
2A	32,835	2,857
2B	51,598	6,466
2C	65,105	4,477
2D	14,729	878
3A	28,211	1,709
3B	24,926	2,249
3C	14,078	1,066
Total	445,205	66,465

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

Totals may not sum exactly because of independent rounding.

Source: Calculations performed by Ascent Environmental in 2020

As further described in Chapter 2, "Project Description," off-site infrastructure improvements for the Project would include an emergency left-turn pocket on Elk Grove Boulevard, SMUD distribution and substation site improvements, implementation of roadway improvements required for compliance with General Plan Policy MOB 1-3, and wastewater conveyance facilities improvements along Riparian Drive. Gasoline and diesel fuel would be consumed from the use of heavy-duty off-road construction equipment and vehicle use during worker commutes. These improvements would result in the consumption of 31,492 gallons of diesel and 1,170 gallons of gasoline. The energy needs for off-site improvement construction would be temporary and would not require additional capacity or increase peak or base period demands for electricity or other forms of energy. Construction equipment would conform to current emission standards and related fuel efficiency requirements. There would be no unusual Project characteristics or construction processes that would require the use of equipment that would be more energy intensive than is used for comparable activities.

Building Energy

The operation of new buildings and facilities would result in the consumption of electricity and natural gas for lighting, space heating, water heating, and appliances. Indirect energy use would include wastewater treatment; water pumping, treatment, and distribution; and solid waste removal. Electrical service would be provided by SMUD and through the on-site generation of renewables, including a photovoltaic system that would be expanded under each phase of the Project. Electricity not generated on-site would be provided by SMUD through its Greenergy program, which provides 100-percent renewable electricity. Natural gas service provided by PG&E would power the boilers of the on-site central plant. The central plant would provide heating and cooling to Project buildings, and four backup diesel-powered generators, located in the central plant, would provide emergency power and are estimated to run for 96 hours per year.

All Project buildings would be constructed in accordance with the most recent building code at the time of construction, which includes energy efficiency requirements. Additionally, the Project's largest building and energy consumer, the hospital, would achieve LEED Gold certification under the LEED rating system for Healthcare version 4 (the current LEED version). The Project Applicant agreed to a binding commitment to delay operation of the Project until it receives LEED Gold certification or better (see Appendix C). Building energy-related design features that would contribute to the achievement of LEED Gold certification include:

- ▶ reduction of energy use by 7 percent compared to a typical healthcare development, achieved through the use of higher-efficiency condensing boilers, variable-frequency-drive controls for cooling tower fans, light-emitting diode lighting, and other energy conservation measures;
- ▶ enhanced commissioning used to verify that installed systems are working as intended upon construction completion and startup of operations;
- ▶ reduction of water use by 30–40 percent compared to a typical healthcare development achieved through the use of low-flow fixtures, cooling tower efficiency, and drought-tolerant landscaping; and
- ▶ water metering to track highest-demand end uses to help maintenance and operations staff detect malfunctions.

The estimated electricity and natural gas consumption for the Project reflects these LEED Gold features. Table 3.5-2 shows the annual amount of operational energy consumed for all Project buildings and facilities at full buildout in 2030.

Table 3.5-2 Operational Energy Consumption

Energy Type	Energy Consumption
Electricity	39,922 MWh/year
Natural gas	118,924 MMBtu/year
Diesel	89,376 gal/year

Notes: MWh/year = megawatt-hours per year; MMBtu/year = million British thermal units per year; gal/year = gallons per year.

Source: Provided by Fong & Chan Architects in 2019

Transportation Energy

Fuel estimates were calculated from the combination of consumption rates and fuel mix by vehicle class from CARB's EMFAC2017 model with overall VMT and mode share by vehicle class modeled for the Project in CalEEMod. State regulation regarding standards for vehicles in California are designed to reduce the wasteful, unnecessary, and inefficient use of energy for transportation. Additionally, approximately 32,500 gallons of jet fuel would be consumed per year for helicopter operations.

Summary

The Project would increase energy demand during construction activities for Project buildings and facilities and because of increased transportation rates associated with Project operation. Construction activities would not increase long-term, ongoing demand for energy or fuel because the Project's construction period is anticipated to last 10 years and would be both temporary and intermittent.

According to the State CEQA Guidelines, the means to achieve the goal of conserving energy include decreasing overall energy consumption, decreasing reliance on oil, and increasing reliance on renewable energy sources.

All Project buildings would, at a minimum, comply with the California Energy Code in effect at the time of construction and with the California Code of Regulations requirements for energy efficiency. The Project would install solar photovoltaics to support electricity demand, with the remaining demand supported by SMUD's Greenergy program, which includes 100 percent renewably sourced electricity. The Project would increase renewable energy generation and decrease transportation-related energy consumption as compared with similar projects. In addition, Mitigation Measure 3.5-1a requires the Project to meet LEED Gold certification pursuant to the AB 900 requirements, thus reducing the energy requirements associated with Project's building energy demand.

In regard to transportation energy demands, Mitigation Measure 3.5-1b (Mitigation Measure 3.14-1) requires the Project to demonstrate at least a 15 percent greater transportation efficiency than comparable projects within the City (30 percent reduction in trips), consistent with the Project's AB 900 application (Appendix C of the Draft EIR). The AB 900 transportation analysis for the Project provides detailed trip generation calculations and transportation efficiency analysis of the existing development on the Project site, the proposed Project, and a comparable project (refer to Appendix C). The transportation efficiency measures include:

- ▶ bicycle storage and shower facilities,
- ▶ preferred parking areas for EVs and charging infrastructure,
- ▶ 166 EV parking spaces with chargers,
- ▶ transportation marketing services,
- ▶ improved access to the bicycle network,
- ▶ an on-site café,
- ▶ a shuttle bus service,
- ▶ subsidized transit passes,
- ▶ a carpooling program,
- ▶ a guaranteed ride home program, and
- ▶ a parking cash-out program.

As part of building permit submittal to the California Office of Statewide Health Planning and Development Facilities and the City, the Project Applicant must demonstrate that these measures would result in a 30-percent reduction in Project-generated vehicle trips, which would result in a 30-percent reduction in fuel consumption (see Mitigation Measure 3.14-1). Table 3.5-3 shows the annual amount of gasoline and diesel consumption associated with Project-generated vehicle trips before and after accounting for the 30-percent vehicle trip reduction attributable to the transportation efficiency measures that are required of the Project pursuant to AB 900. As shown in Table 3.5-3, the

addition of the transportation efficiency measures would result in a reduction in fuel consumption of 605,311 gallons of gasoline per year and 122,215 gallons of diesel per year.

Table 3.5-3 Gasoline and Diesel Consumption in 2030 with and without Transportation Efficiency Measures

Vehicle Category	Gasoline (gal/year)	Diesel (gal/year)
Project Fuel Consumption without Transportation Efficiency Measures		
Passenger vehicles	1,624,718	10,943
Trucks	371,967	381,239
Buses	15,420	14,001
Other vehicles	5,599	1,202
Total (All Vehicle Types)	2,017,704	407,385
Project Fuel Consumption with Transportation Efficiency Measures		
Passenger vehicles	1,137,303	7,660
Trucks	260,377	266,867
Buses	10,794	9,801
Other vehicles	3,919	841
Total (All Vehicle Types)	1,412,393	285,169
Percent Reduction in Fuel Consumption with Transportation Efficiency Measures	-30%	-30%

Note: gal/year = gallons per year.

Totals may not sum exactly because of independent rounding.

Source: Calculations by Ascent Environmental in 2020

Implementation of Mitigation Measure 3.5-1a would require the Project to obtain LEED Gold certification, Mitigation Measure 3.5-1b would require the Project to achieve at least 15-percent greater transportation efficiency than comparable projects in the City (30 percent reduction in trips), and Mitigation Measure 3.5-1c would require Project compliance with California Energy Code Tier 1 standards. Thus, through implementation of these mitigation measures, impacts related to the wasteful, inefficient, or unnecessary consumption of energy would be **less than significant**.

Mitigation Measures

Mitigation Measure 3.5-1a: Complete LEED Gold Certification

Consistent with the LEED commitment letter included in the Project's certified AB 900 application, the Project Applicant shall complete the following. The Project shall achieve at least LEED Gold certification under LEED version 4 or newer. This shall be in addition to compliance with the California Energy Code Tier 1 standards provided in Mitigation Measure 3.5-1c.

- ▶ For buildings within the jurisdiction of the California Office of Statewide Health Planning and Development Facilities Development Division:
 - Prior to issuance of plan approval or building permit by the California Office of Statewide Health Planning and Development Facilities Development Division, submit to the City Development Services Department a copy of the LEED Project Registration and Green Building Council-approved Design Documentation Submittal (01 81 13 - LEED Project Requirements).
 - Submit a copy of the updated detailed LEED Scorecard prior to public operation of the building.

- Within one year of building occupancy, submit final approved LEED certification to the City. The City may limit the issuance of subsequent building permits for the Project site until the Final LEED Certification has been provided to the City.
- For buildings within the jurisdiction of the City:
 - Concurrently with submittal of the building permit application, submit to the City Development Services Department a copy of the LEED Project Registration and Green Building Council–approved Design Documentation Submittal (01 81 13 - LEED Project Requirements).
 - Submit a copy of the updated detailed LEED Scorecard prior to public operation of the building.
 - Within one year of building occupancy, submit final approved LEED certification to the City. The City may limit the issuance of subsequent building permits for the Project site until the Final LEED Certification has been provided to the City.

Mitigation Measure 3.5-1b: Implement Mitigation Measure 3.14-1

Mitigation Measure 3.5-1c: Compliance with California Energy Code Tier 1 Standards

Prior to issuance of plan approval or building permit by the California Office of Statewide Health Planning and Development Facilities Development Division, the Project Applicant shall provide plans and/or documentation demonstrating compliance with California Energy Code Tier 1 standards to the City Development Services Department. Documentation of compliance with this measure shall also be provided to the City Development Services Department prior to issuance of building permits by the City for other buildings not under the jurisdiction of the California Office of Statewide Health Planning and Development Facilities Development Division.

Significance after Mitigation

Less than significant.

Impact 3.5-2: Conflict with or Obstruct a State or Local Plan for Renewable Energy or Energy Efficiency

Renewable energy generation from on-site solar photovoltaics would result in an increase in renewable energy use, which would directly support the goals and strategies in the State's 2008 Update Energy Action Plan (EAP) and the City General Plan and CAP. Additional electricity demand not met through on-site renewables because of site constraints would be met through purchasing SMUD Greenergy electricity, which is 100 percent renewable. Construction and operation of Project buildings would be in compliance with the 2019 California Energy Code or later iterations of the code, which would improve energy efficiency compared to buildings constructed according to earlier iterations of the code. Therefore, construction and operation of the Project would not conflict with or obstruct a State or local plan for renewable energy or energy efficiency. This impact would be **less than significant**.

Relevant plans that pertain to the efficient use of energy include the EAP, which focuses on energy efficiency; demand response; renewable energy; the supply and reliability of electricity, natural gas, and transportation fuels; and achieving GHG reduction targets (CEC and CPUC 2008), as well as the City General Plan and CAP, which seek to reduce VMT, increase EV charging, increase renewable energy generation, increase green building practices, improve energy efficiency, and achieve GHG reduction targets.

As discussed for Impact 3.5-1, although implementation of the Project has the potential to result in the overall increase in consumption of energy resources during construction and operation of new buildings and facilities, the Project includes many design features that would reduce energy consumption. These design features would be consistent with the City General Plan and CAP. Therefore, the Project would not conflict with or obstruct a State or local plan for renewable energy or energy efficiency. This impact would be **less than significant**.

Furthermore, while implementation of additional mitigation measures is not necessary, Mitigation Measure 3.7-1a includes installing on-site solar photovoltaics, purchasing electricity through SMUD's Greenergy program, installing EV chargers, and reducing overall VMT by 30 percent), which would align with both the EAP and Elk Grove General Plan and CAP. In addition, implementation of Mitigation Measure 3.5-1a would require the Project to achieve LEED Gold certification and Mitigation Measure 3.5-1c would require compliance with California Energy Code Tier 1 standards, which requires that the design, construction, operation, and maintenance of the buildings use resources efficiently. Mitigation Measure 3.5-1b (implementation of Mitigation Measure 3.14-1) would require the Project to achieve at least 15-percent greater transportation efficiency than comparable projects in the City (30 percent reduction in trips).

Mitigation Measures

No additional mitigation is required.

3.6 GEOLOGY AND SOILS

This section describes current conditions relative to geology and soils at the Project site. It includes a description of geologic soil conditions, analysis of environmental impacts, and recommendations for mitigation measures for any significant or potentially significant impacts. The primary source of information used for this analysis is the Draft Geotechnical Exploration Report prepared by ENGEO (ENGEO 2019).

Comments were received from residents in response to the NOP. Commenters noted that the Draft EIR should address Project impacts related to geologic and seismic hazards (e.g., landslides, soil stability, sink holes, and soil erosion), the need to prepare geotechnical studies, soil erosion control measures, levee stability concerns, and groundwater intrusion into Project basements. Comments were also submitted regarding consistency with the Sacramento County General Plan policies; however, the Sacramento County General Plan policies are not applicable to the Project because the Project would be located entirely in the City. Groundwater and flooding issues are addressed in Section 3.9, "Hydrology and Water Quality." All other issues are considered below. The reader is referred to Appendix A for comments received on the NOP.

The Project site is located within the City and is currently zoned for urban uses, not for mineral extraction. Because there is no potential for the extraction of mineral resources at the site, this issue is dismissed from further discussion. Additionally, because the Project would use municipal water and sewer connections, the suitability of Project soils to support septic and alternative wastewater systems is not discussed.

3.6.1 Regulatory Setting

FEDERAL

National Earthquake Hazards Reduction Act

In October 1977, the U.S. Congress passed the Earthquake Hazards Reduction Act (42 United States Code Sections 7701–7706) to reduce the risks to life and property from future earthquakes in the United States. To accomplish this reduction in risk, the act established the National Earthquake Hazards Reduction Program (NEHRP). The mission of the 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 NEHRP designates the Federal Emergency Management Agency as the lead agency of the program and assigns several planning, coordinating, and reporting responsibilities.

STATE

Alquist-Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Earthquake Fault Zoning Act of 1972 (Alquist-Priolo Act) (PRC Sections 2621–2630) intends to reduce the risk to life and property from surface fault rupture during earthquakes by regulating construction in active fault corridors and by prohibiting the location of most types of structures intended for human occupancy across the traces of active faults. The act defines criteria for identifying active faults, giving legal support to terms such as "active" and "inactive," and it establishes a process for reviewing building proposals in Earthquake Fault Zones. Under the Alquist-Priolo Act, faults are zoned, and construction along or across these zones is strictly regulated if they are "sufficiently active" and "well-defined." A fault is considered sufficiently active if one or more of its segments or strands shows evidence of surface displacement during Holocene time (defined for purposes of the act as within the last 11,000 years). A fault is considered well defined if its trace can be clearly identified by a trained geologist at the ground surface or in the shallow subsurface, using standard professional techniques, criteria, and judgment (Bryant and Hart 2007). Before a project can be permitted in a designated Alquist-Priolo Earthquake Fault Zone, the relevant city or county must require a

geologic investigation to demonstrate that proposed buildings would not be constructed across active faults. The law addresses only the hazard of surface fault rupture and is not directed toward other earthquake hazards.

Seismic Hazards Mapping Act

The intention of the Seismic Hazards Mapping Act of 1990 (PRC Sections 2690–2699.6) is to reduce damage resulting from earthquakes. Whereas the Alquist-Priolo Act addresses surface fault rupture, the Seismic Hazards Mapping Act addresses other earthquake-related hazards, including ground shaking, liquefaction, and seismically induced landslides. The act's provisions are similar to those of the Alquist-Priolo Act: The State is charged with identifying and mapping areas at risk of strong ground shaking, liquefaction, landslides, and other corollary hazards, and cities and counties are required to regulate development within mapped Seismic Hazard Zones. Under the Seismic Hazards Mapping Act, permit review is the primary mechanism for local regulation of development.

Alfred E. Alquist Hospital Facilities Seismic Safety Act

The Alfred E. Alquist Hospital Facilities Seismic Safety Act (Health and Safety Code, Division 107, Part 7, Chapter 1) was a response to the 1971 6.6-magnitude Sylmar earthquake, which damaged four hospital campuses, killing 47 and injuring more than 2,000. Adopted in 1983, this act required all hospitals to be replaced or retrofitted to meet increased seismic standards. Originally, the act required that acute care facilities be designed to withstand strong seismic shaking without collapse and without causing significant harm to people inside the building. This requirement was revised in 1994 to require that the hospital be able to provide basic emergency medical care following a strong earthquake. Requirements for reconstruction and new construction of hospitals are incorporated into the California Building Code as regulated by the Office of Statewide Health Planning and Development (OSHPD).

California Building Code

The California Building Code (CBC) (CCR Title 24) is based on the International Building Code, but it reflects California conditions and has more detailed or more stringent regulations than the International Building Code. The OSHPD is responsible for building code enforcement for hospitals. Specific minimum seismic safety and structural design requirements are set forth in Chapter 16 of the CBC. The CBC identifies seismic factors that must be considered in structural design. Chapter 18 of the CBC regulates the excavation of foundations and retaining walls, while Chapter 18A regulates construction on unstable soils, such as expansive soils and areas subject to liquefaction. Appendix J of the CBC regulates grading activities, including drainage and erosion control. The CBC contains a provision that provides for a preliminary soil report to be prepared to identify "the presence of critically expansive soils or other soil problems which, if not corrected, would lead to structural defects" (CBC Chapter 18 Section 1803.1.1.1). In addition, the CBC identifies specific requirements for construction of hospitals, public schools, and essential services buildings including:

- ▶ preparation of both geotechnical (Section 1803A.2) and geohazard analysis (Section 1803A.6) reports for schools and hospitals;
- ▶ additional geotechnical borings (two per building and one per 5,000 square feet of footprint) (Section 1803A.1);
- ▶ site data reports (accompanying the geotechnical and geohazard analyses) prepared by the project architect describing the project type, construction methods and materials, seismic force resisting system, foundation system, analysis procedure used, building characteristics, and special features (Section 1603A.2);
- ▶ increased safety factor for soil bearing values (Section 1605A.1.1); and
- ▶ minimum Seismic Design Category D or site-specific ground motion analysis (Section 1616A.1.3).

National Pollutant Discharge Elimination System Construction General Permit for Stormwater Discharges Associated with Construction Activity

The State Water Resources Control Board has adopted a Statewide National Pollutant Discharge Elimination System (NPDES) General Permit for Stormwater Discharges Associated with Construction Activity (SWRCB Construction General Permit Order 2009-0009-DWQ). The State requires that projects disturbing more than 1 acre of land during construction file a Notice of Intent with the regional water quality control board (RWQCB) to be covered under this

permit. Construction activities subject to the general permit include clearing, grading, stockpiling, and excavating. Dischargers are required to eliminate or reduce nonstormwater discharges to storm sewer systems and other waters. A storm water pollution prevention plan (SWPPP) must be developed and implemented for each site covered by the permit. The SWPPP must include best management practices (BMPs) designed to prevent construction pollutants from contacting stormwater and keep products of erosion from moving off-site into receiving waters throughout the construction and life of the project; the BMPs must address source control and, if necessary, pollutant control.

Regulations Regarding Paleontological Resources

Paleontological resources on private property are considered the property of the landowner and receive no particular legal protection unless otherwise addressed in the conditions of approval of a land development permit, as mitigation in an applicable CEQA document, or through local policy and/or regulation (see below). Paleontological resources on public lands are protected by State statute (PRC Chapter 1.7, Section 5097.5, Archeological, Paleontological, and Historical Sites and Appendix G). This statute states:

A person shall not knowingly and willfully excavate upon, or remove, destroy, injure, or deface, any historic or prehistoric ruins, burial grounds, archaeological or vertebrate paleontological site, including fossilized footprints, inscriptions made by human agency, rock art, or any other archaeological, paleontological or historical feature, situated on public lands, except with the express permission of the public agency having jurisdiction over the lands.

LOCAL

City of Elk Grove General Plan

The City of Elk Grove General Plan contains the following policies and standards related to geology and soils that apply to the proposed Project (City of Elk Grove 2019):

- ▶ **Policy NR-3-1:** Ensure that the quality of water resources (e.g. groundwater, surface water) is protected to the extent possible.
- ▶ **Policy NR-3-2:** Integrate sustainable stormwater management techniques in site design to reduce stormwater runoff and control erosion.
 - **Standard NR-3-2.b:** Roads and structures shall be designed, built, and landscaped so as to minimize erosion during and after construction.
- ▶ **Policy NR-3-3:** Implement the City's National Pollutant Discharge Elimination System permit through the review and approval of development projects and other activities regulated by the permit.

City of Elk Grove Municipal Code

Chapter 16.04 (California Building Code)

Chapter 16.04 of the Municipal Code consists of the adoption of the 2019 edition of the CBC, Title 24, Part 2, Volumes 1 and 2, published by the International Code Council, administrative sections, Chapter 29, Appendices C, I, and O; and amendments, as adopted by the Building Standards Commission of the State of California and codified at Title 24, Part 2, in the CCR.

Chapter 16.44 (Land Grading and Erosion Control)

Chapter 16.44 of the Municipal Code establishes administrative procedures, minimum standards of review, and implementation and enforcement procedures for controlling erosion, sedimentation, and other pollutant runoff, including construction debris and hazardous substances used on construction sites, and disruption of existing drainage and related environmental damage caused by land clearing, grubbing, grading, filling, and land excavation activities. The chapter applies to projects that would disturb 350 cubic yards or more of soil. The intent of the Chapter is to minimize damage to surrounding properties and public rights-of-way, minimize degradation of water quality in

watercourses, minimize disruption of natural or City-authorized drainage flows caused by construction activities, and make projects comply with the provisions of the City's NPDES Permit Number CA0082597, issued by the RWQCB. The City of Elk Grove is a co-permittee on an NPDES permit, along with Sacramento County and the Cities of Sacramento, Folsom, Galt, and Citrus Heights.

The reader is referred to Section 3.9, "Hydrology and Water Quality," for a discussion of Municipal Code Chapter 15.12 (Stormwater Management and Discharge Control).

3.6.2 Environmental Setting

REGIONAL GEOLOGY

The site is located in the Great Valley geomorphic province. The Great Valley is an elongate, northwest-trending structural trough bounded by the Coast Ranges on the west and the Sierra Nevada on the east. The Great Valley has been and is presently being filled with sediments transported by powerful river systems originating in the surrounding mountains. These sediments of various ages underlie the site to great depths above the Jurassic metamorphic basement rock estimated to be approximately 10,300 feet deep at the site (Harwood and Helley 1982). The age and character of the alluvial deposits in the Great Valley is varied and complex with a strong influence from paleo-climactic conditions (including Pleistocene glaciations) and the ancient depositional environment.

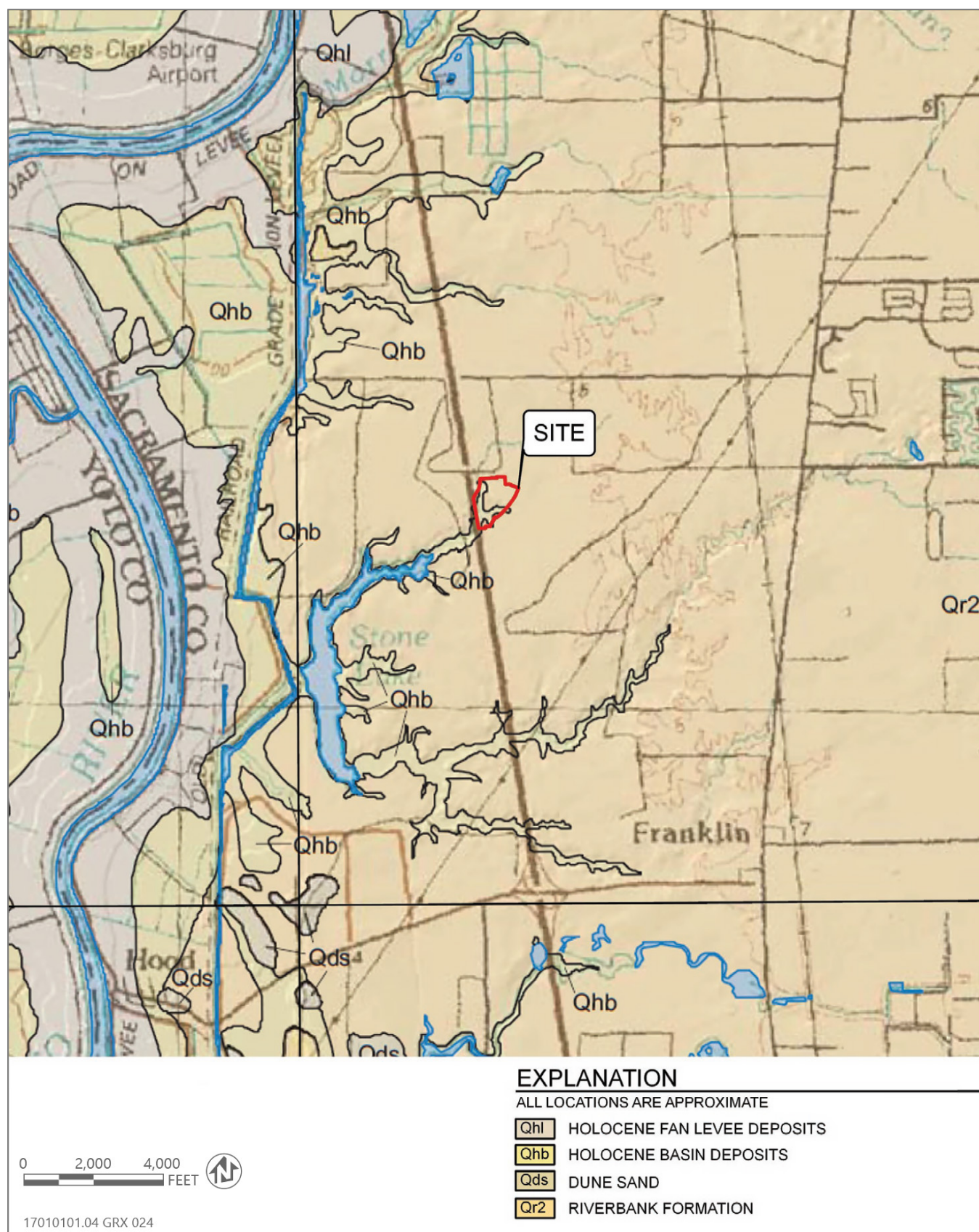
LOCAL GEOLOGY

The site boundaries are shown in Figure 3.6-1 (Dawson 2009). The map characterizes the western and southern boundaries of the site as Holocene Basin deposits; these areas appear to correspond to the predevelopment drainages that historically sloped toward Stone Lake to the southwest. The basin deposits are generally composed of clays that have accumulated along the edges of floodplains of the present-day river systems; these deposits appear to be relatively thin at the site below the existing fill. The middle unit of the Pleistocene Riverbank Formation is mapped underlying most of the site and underlies the basin deposit clay. The Riverbank Formation deposits are made up of alluvial sediments derived from the Sierra Nevada generally carried by relatively small ancestral drainages running east to west. The middle unit of the Riverbank Formation is considered to be approximately 260,000 years old \pm 45,000 years (Marchand and Allwardt 1981). This formation is generally composed of clay and silt with varying amounts of sand, clayey sand, and minor lenses of poorly graded sand. Because of its advanced age, this formation commonly includes advanced weathering and cementation.

TOPOGRAPHY AND DRAINAGE

The Project site has gentle topographic relief. Site grades range from approximately elevation 15 to 19 feet. The ground surface around the northern commercial building complex generally slopes to the west, while the central and southern portions of the site generally slope toward the east. The Project site is located approximately 1½ miles east of the Sacramento River.

An approximately 5-foot-tall earthen levee borders the west side of the site. On the west side of the embankment is a drainage corridor that drains toward the south with invert elevations of approximately elevation 10 feet. The Elk Grove General Plan Safety Element indicates that this is a nonfederal levee that provides 100-year flood protection to the site and nearby residential communities.



Source: ENGEO 2019

Figure 3.6-1 Regional Geologic Map

SOILS

The soil survey for Sacramento County indicates that the Project site is underlain by the Durixeralfs-Galt complex (NRCS 2019). This soil mapping unit contains approximately 50 percent Durixeralf soils, 40 percent Galt soils, and 10 percent other minor soil types. These are high-clay-content soils that are susceptible to a variety of soil risk factors, such as shallow hardpan, expansion, and high groundwater. Construction on these soils generally requires design features that reduce or eliminate structural damage or failure risks. The Geotechnical Exploration Report prepared for the Project also found the presence of fill on the site, ranging in thickness from 3 to 11 feet below existing the ground surface (ENGEO 2019). At the time the geotechnical report was prepared, no supporting documentation was available regarding placement and compaction of the fill. The fill was likely placed during the original site development, and portions were lime-treated to reduce expansion. The lack of supporting documentation regarding fill compaction indicates that the fill may not be suitable for support of the proposed new structures. Nonengineered fills can undergo excessive settlement, especially under new fill or building loads.

SUBSIDENCE

Land subsidence is the gradual settling or sinking of an area with little horizontal motion. Subsidence can be induced by both natural and human phenomena. Natural phenomena include shifting of tectonic plates and dissolution of limestone, resulting in sinkholes. Human-related activity that can cause subsidence includes pumping water, oil, and gas from underground reservoirs; collapse of underground mines; drainage of wetlands; and soil compaction. The results of the Geotechnical Exploration Report (ENGEO 2019) completed for the Project site found that the site is not within an area where subsidence resulting from groundwater or oil withdrawal has been documented. The U.S. Geological Survey (USGS) provides an interactive map that identifies documented areas of land subsidence (USGS 2020). The closest areas of reported land subsidence are located west of Sacramento, in Davis and Woodland, and west of Lodi, within the Sacramento–San Joaquin Delta (Luhdorff & Scalmanini 2014). Therefore, the risk from regional subsidence at the site is considered low.

EXPANSIVE SOILS

Expansive soils (also known as shrink-swell soils) are soils that contain expansive clay minerals that can absorb significant amounts of water. The presence of these clay minerals makes the soil prone to large changes in volume in response to changes in water content. When an expansive soil becomes wet, water is absorbed and it increases in volume, and as the soil dries, it contracts and decreases in volume. This repeated change in volume over time can produce enough force and stress on buildings, underground utilities, and other structures to damage foundations, pipes, and walls.

One measure of the shrink-swell potential of soils is linear extensibility. Linear extensibility refers to the change in length of an unconfined clod as moisture content is decreased from a moist to a dry state. The volume change is reported as percent change for the whole soil. The amount and type of clay minerals in the soil influence volume change. The shrink-swell potential is low if the soil has a linear extensibility of less than 3 percent, moderate if 3–6 percent, high if 6–9 percent, and very high if more than 9 percent. The Durixeralfs-Galt complex soils that underlay the site have linear extensibility of 7.5, indicating a high shrink-swell potential. Additionally, the Geotechnical Exploration Report prepared for the Project identified the presence of near-surface potentially expansive soils (ENGEO 2019).

MASS WASTING AND LANDSLIDES

“Mass wasting” refers to the collective group of processes that characterize downslope movement of rock and unconsolidated sediment overlying bedrock. These processes include landslides, slumps, rockfalls, flows, and creeps. Many factors contribute to the potential for mass wasting, including geologic conditions and the drainage, slope, and vegetation of the site. The Geotechnical Exploration Report prepared for the Project found that the site topography is relatively level with gentle topographic relief. Additionally, no landslides are mapped on the site, and no evidence of unstable conditions were observed during field surveys (ENGEO 2019). For these reasons, the Geotech Exploration Report concluded that the risk from landslides is negligible at the site.

SEISMICITY

Most earthquakes originate along fault lines. A fault is a fracture in Earth's crust along which rocks on one side are displaced relative to those on the other side because of shear and compressive crustal stresses. Most faults are the result of repeated displacement that may have taken place suddenly or by slow creep (Bryant and Hart 2007). The State of California has a classification system that designates faults as active, potentially active, or inactive, depending on how recently displacement has occurred along them. Faults that show evidence of movement within the last 11,000 years (the Holocene geologic period) are considered active, and faults that have moved between 11,000 and 1.6 million years ago (making up the later Pleistocene geologic period) are considered potentially active.

An earthquake is classified by the amount of energy released, which traditionally has been quantified using the Richter scale. Recently, seismologists have begun using a moment magnitude (M) scale because it provides a more accurate measurement of the size of large earthquakes. For earthquakes of less than M 7.0, the moment and Richter magnitude scales are nearly identical. For earthquakes greater than M 7.0, readings on the moment magnitude scale are slightly higher than the corresponding Richter magnitude.

The location of the Project site relative to faults identified in the 2018 USGS Quaternary Fault Database is illustrated in Figure 3.6-2. The site lies in a seismically active region because California has numerous faults that are considered active.

The Third Uniform California Earthquake Rupture Forecast (UCERF3) is the latest comprehensive model of earthquake occurrence for California. It provides estimates of magnitude, location, and likelihood of potentially damaging earthquakes in the State. This model was used to develop the 2014 update of the USGS National Seismic Hazard Maps. The geotechnical report prepared for the Project used the OpenSHA software, which incorporates UCERF3, to identify faults with a 2 percent or greater probability of contributing to ground shaking at the site within a 50-year period.

Note that the UCERF3 model divides faults into multiple segments and has numerous rupture scenarios for each fault. Each rupture scenario involves a different number of segments and can include segments from other nearby faults. The maximum magnitudes listed in Table 3.6-1 are associated with very low probability ruptures that involve the highest possible number of fault segments.

Table 3.6-1 Faults Contributing More Than 1 Percent to Peak Ground Shaking Hazard

Fault Name	Distance from Fault to Project Site (Miles)	Maximum Moment Magnitude
Bartlett Springs	38.8	7.64
Calaveras (Central)	53.6	7.57
Calaveras (Northern)	50.0	6.91
Calaveras (Southern)	53.6	7.68
Concord	39.9	7.68
Great Valley 03 Mysterious Ridge	28.1	7.28
Great Valley 03a Dunnigan Hills	24.7	6.41
Great Valley 04a Trout Creek	30.6	7.12
Great Valley 04b Gordon Valley	30.1	7.22
Great Valley 05 Pittsburg-Kirby Hills	25.3	6.46
Great Valley 06 (Midland)	16.5	7.23
Green Valley	39.9	7.72
Greenville (Northern)	46.0	6.85
Greenville (Southern)	41.5	7.09
Hayward (Northern)	54.8	7.24
Hayward (Southern)	41.5	7.09
Hunting Creek – Bartlett Springs	51.4	7.74
Hunting Creek – Berryessa	40.4	7.66

Fault Name	Distance from Fault to Project Site (Miles)	Maximum Moment Magnitude
Maacama	61.1	7.50
Rodgers Creek – Healdsburg	53.6	7.52
San Andreas (Creeping Section)	73.5	7.99
San Andreas (North Coast)	73.5	8.21
San Andreas (Offshore)	73.5	8.27
San Andreas (Peninsula)	73.5	7.81
West Napa	44.8	6.88

Source: ENGEO 2019

Seismic hazards resulting from earthquakes include surface fault rupture, ground shaking, and liquefaction. Each of these potential hazards is discussed below.

Surface Fault Rupture

Surface rupture is the surface expression of movement along a fault. Structures built over an active fault can be torn apart if the ground ruptures. The potential for surface rupture is based on the concepts of recency and recurrence. Surface rupture along faults is generally limited to a linear zone a few meters wide. The Alquist-Priolo Act (see the "Regulatory Setting" discussion, above) was created to prohibit the location of structures designed for human occupancy across, or within 50 feet of, an active fault, thereby reducing the loss of life and property from an earthquake. The Project site is not located in an Alquist-Priolo active fault zone (ENGEO 2019), and there is no evidence of active faulting within or near the Project site.

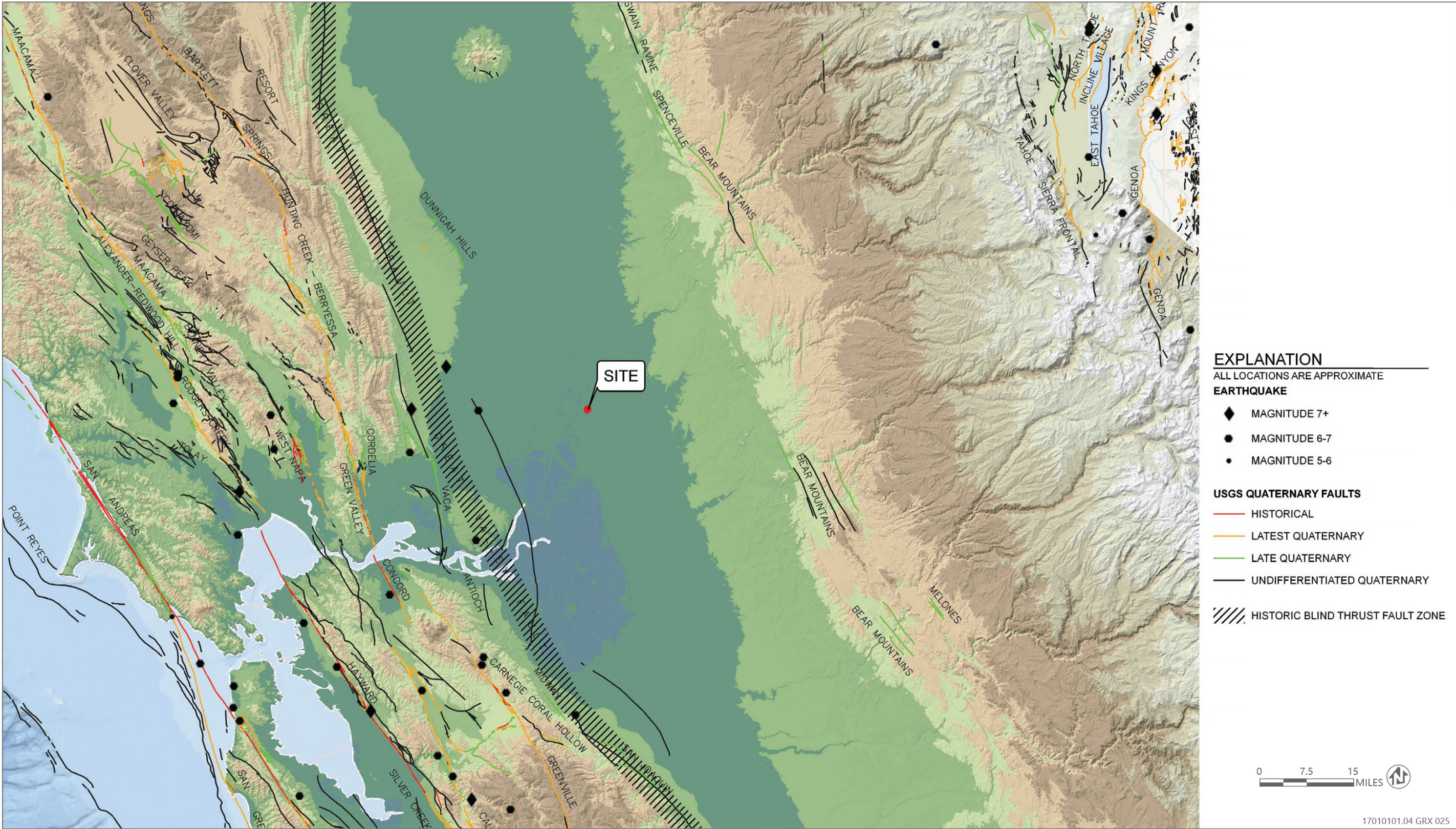
Ground Shaking

The intensity of seismic shaking, or strong ground motion, during an earthquake is dependent on the distance and direction from the epicenter of the earthquake, the magnitude of the earthquake, and the geologic conditions of the surrounding area. Ground shaking could potentially result in the damage or collapse of buildings and other structures. Figure 3.6-2 shows the corresponding earthquake magnitude of historic earthquakes that have occurred since 1800 with an earthquake magnitude of 5 or larger. The historic earthquake magnitudes presented in Figure 3.6-2 indicate a magnitude 6–7 earthquake occurred approximately 18 miles west of the site along the Great Valley Fault. Approximately 23 miles northwest of the site, a magnitude 7+ event occurred near the Great Valley Fault. One recent significant earthquake in the Bay Area was the magnitude 6.0 South Napa earthquake that occurred on August 24, 2014, approximately 50 miles southwest of the site. According to the USGS Earthquake Hazards Program interactive map for the South Napa earthquake, the estimated Modified Mercalli intensity near Elk Grove was a 3, which correlates to a weak perceived level of shaking, similar to the vibration caused by a passing light truck.

Liquefaction and Lateral Spreading

Liquefaction is a phenomenon in which loose, saturated, granular soil deposits lose a significant portion of their shear strength because of excess pore water pressure buildup. An earthquake typically causes the increase in pore water pressure and subsequent liquefaction. These soils behave like a liquid during seismic shaking and resolidify when shaking stops. The potential for liquefaction is highest in areas with high groundwater and loose, fine, sandy soils at depths of less than 50 feet. The results of the liquefaction triggering analysis conducted for Project soils, described in the Geotechnical Exploration Report, indicate that the risk of liquefaction at the site is low to negligible (ENGEO 2019).

Liquefaction may also lead to lateral spreading. Lateral spreading (also known as expansion) 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. It often occurs in response to liquefaction of soils in an adjacent area. The potential for failure from lateral spreading is highest in areas where there is a high groundwater table, where there are relatively soft and recent alluvial deposits, and where creek banks are relatively high. The Sacramento River is located approximately 1 mile west of the Project site and could offer a potential opportunity for lateral spreading. However, because the Project site and vicinity are on flat terrain and relatively distant from the Sacramento River, and because liquefaction potential is low, lateral spreading is not expected to be a concern.



Source: ENGEO 2019

Figure 3.6-2 Regional Faulting and Seismicity

PALEONTOLOGIC RESOURCES

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 are generally common; the fossil record of marine invertebrates is well developed and well documented, and generally they are typically not considered a unique paleontological resource. Identified vertebrate marine and terrestrial fossils are generally considered scientifically important because they are relatively rare. Only qualified paleontologists with specific expertise in the type of fossils being evaluated can determine the scientific significance of paleontological resources.

As discussed above, the Project site is located within the middle unit of the Riverbank Formation, which is considered to be approximately 260,000 years old \pm 45,000 years (Marchand and Allwardt 1981). A search of the University of California Museum of Paleontology database indicates that numerous Pleistocene-age (11,700 to 2.5 million years ago) vertebrate fossils have been recovered from the Riverbank Formation in Sacramento County, including mammoth, giant ground sloth, dire wolf, and camel (UCMP 2019). Although vertebrate fossils are known to occur intermittently in the Riverbank Formation, the ability to predict the presence or absence of fossils in this formation is low.

3.6.3 Impacts and Mitigation Measures

METHODOLOGY

The examination of geology and soils is based on information obtained from reviews of:

- ▶ the Project description;
- ▶ available literature, including documents published by the City of Elk Grove, the County of Sacramento, State and federal agencies, and published information dealing with geotechnical conditions in the Sacramento area;
- ▶ applicable elements from the City of Elk Grove General Plan and the County of Sacramento General Plan; and
- ▶ the Draft Geotechnical Exploration Report prepared for the California Northstate University Medical Center Campus Project (ENGEO 2019).

THRESHOLDS OF SIGNIFICANCE

An impact on geology and soils would be significant if implementation of the Project would:

- ▶ directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death through the rupture of a known earthquake fault or strong seismic ground shaking;
- ▶ result in substantial soil erosion or the loss of topsoil;
- ▶ locate Project facilities on an unstable geologic unit or expansive soil, creating substantial direct or indirect risks to life or property; or
- ▶ directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

ISSUES NOT DISCUSSED FURTHER

As discussed above in Section 3.6.2, "Environmental Setting," the Project site is not at risk from subsidence, landslide, liquefaction, or lateral spreading and is not located on a known earthquake fault that has the potential for surface rupture. Therefore, these issues are not discussed further in this analysis.

ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Impact 3.6-1: Directly or Indirectly Cause Adverse Effects Related to Strong Seismic Shaking

An earthquake of moderate to high magnitude occurring within the region may cause strong ground shaking at the site. However, the Project structures would be designed to meet CBC seismic standards at a minimum, which includes specific standards for hospital facilities under OSHPD authority. Structures designed to meet CBC standards are expected to withstand a major earthquake without collapse or loss of life. Off-site infrastructure improvements, which would be placed primarily underground, also would be constructed to these standards. Project construction and operation would not create new seismic events or exacerbate existing seismic hazards. This impact would be **less than significant**.

As discussed in the “Environmental Setting” section, an earthquake of moderate to high magnitude generated in the region may cause considerable ground shaking at the Project site. To account for the potential effects of ground shaking, Project structures would be designed using sound engineering judgment and the latest 2019 CBC requirements, which include additional standards for hospitals under the authority of OSHPD. The seismic design provisions of the CBC generally prescribe minimum lateral forces (horizontal pressure caused by seismic movement), applied to the structure, combined with gravity forces. The code-prescribed lateral forces are generally considered to be substantially smaller than the comparable forces that would be associated with a major earthquake. Therefore, structures should be able to (1) resist minor earthquakes without damage; (2) resist moderate earthquakes without structural damage but with some nonstructural damage; and (3) resist major earthquakes without collapse but with some structural, as well as nonstructural damage.

Off-site electrical improvements to the existing Sacramento Municipal Utility District (SMUD) substation would be aboveground and may be damaged during an earthquake. Damage sustained by electrical substations from large earthquakes in urban areas of California in the 1970s through the 1990s provided much of the motivation for the development of seismic design standards, including the Institute of Electrical and Electronics Engineers (IEEE) 693, “Recommended Practice for Seismic Design of Substations.” IEEE 693 was developed by the Substations Committee of the IEEE Power Engineering Society and was approved by the American National Standards Institute and the IEEE-SA Standards Board. This document provides seismic design recommendations for substations and equipment consisting of seismic criteria, qualification methods and levels, structural capacities, performance requirements for equipment operation, installation methods, and documentation. Compliance with this recommended practice assists the substation user or operator in providing substation equipment that will have a high probability of withstanding seismic events to predefined ground acceleration levels. Improvements to the SMUD substation would be based on the latest edition of IEEE 693.

It is also important to note that environmental impact analyses under CEQA generally are not required to analyze the impact of existing environmental conditions on a project’s future users or residents unless the proposed project might cause or risk exacerbating environmental hazards or conditions that already exist (CCR Section 15126.2[a]). In those specific instances, it is the project’s impact on the environment and not the environment’s impact on the project that compels an evaluation of how future residents or users may be affected by exacerbated conditions (*California Building Industry Association v. Bay Area Air Quality Management District* [2015] 62 Cal. 4th 369). Project construction and operation would not create new seismic events or exacerbate existing seismic hazards, because the Project improvements would involve limited excavation that would not alter seismic and fault conditions in the region.

Therefore, the potential for the proposed Project to cause adverse effects related to strong seismic shaking would be **less than significant**.

Mitigation Measures

No mitigation is required in addition to CBC seismic standards, which includes specific standards for hospital facilities under OSHPD authority.

Impact 3.6-2: Result in Substantial Soil Erosion or Loss of Topsoil

Project construction and off-site improvements would involve ground disturbance and the potential for soil erosion and sedimentation off-site. The potential for increased erosion would be minimized through compliance with City Municipal Code Chapter 16.44 and the requirement of SWRCB Construction General Permit Order 2009-0009-DWQ to implement measures to control soil erosion and sedimentation. This impact would be **less than significant**.

The Project and off-site improvements would require the demolition of structures and pavement, trenching, and grading and excavation over the three phases of construction. These construction activities would result in temporary disturbance of soil and would expose disturbed areas to storm events. Rain of sufficient intensity and duration may dislodge soil particles, generate runoff, and cause localized erosion and sedimentation. Soil disturbance during the summer months may result in loss of topsoil due to wind erosion and runoff from thunderstorm events.

All construction projects that disturb 1 or more acres of land are required to obtain coverage under the SWRCB Construction General Permit Order 2009-0009-DWQ. This permit requires the preparation and implementation of a SWPPP that includes a site-specific construction site monitoring and reporting plan. Project SWPPPs are required to describe the site, construction activities, proposed erosion and sediment controls, means of waste disposal, maintenance requirements for temporary BMPs, and management controls related to stormwater. Temporary BMPs to protect water quality would be required during all site development activities. Controls would be required to ensure that erosion from the site is controlled so that runoff quality meets or surpasses RWQCB water quality objectives and discharge limits to surface water and groundwater sources. Stormwater quality sampling and reporting requirements outlined in the construction site monitoring and reporting plan are also part of the SWPPP. The requirements of the SWPPP and associated NPDES permitting are discussed in greater detail in Impact 3.9-1 in Section 3.9, "Hydrology and Water Quality."

In addition, each phase of the Project would be required to comply with City General Plan Standard NR-3-2.b, requiring roads and structures to be designed, built, and landscaped so as to minimize erosion during and after construction. This standard is implemented through Municipal Code Chapter 16.44, which requires submission of a grading plan that describes:

- ▶ the location of on-site and surrounding watercourses and wetlands, existing and proposed drainage systems, and drainage area boundaries and acreages;
- ▶ accurate contours at 2-foot intervals for slopes up to 10 percent;
- ▶ elevations, location, extent, and slope of all proposed grading and location of any disposal areas, fills, or other special features;
- ▶ description and volumes of excavation and fill work;
- ▶ delineation of the area to be cleared and grubbed; and
- ▶ the location, implementation schedule, and maintenance schedule of all erosion control measures and sediment control measures to be implemented or constructed before, during, or after the proposed activity.

Municipal Code Section 16.44.250 requires that if activity is ceased at the site for any reason for a period of 15 days or more, the Project site must be graded to blend with adjacent terrain and be stabilized to prevent erosion or sediment deposition (sedimentation). Before issuance of the City grading permit, the applicant must also provide a security deposit in an amount estimated to be the cost of stabilizing the site if the Project is abandoned. The City grading permit conditions provide verification of compliance with the SWRCB permit conditions and an additional layer of oversight to ensure that the Project would not result in excessive erosion or sedimentation.

Although the Project construction and off-site improvements would create intensive ground disturbance, the potential for increased erosion would be addressed through compliance with the City and SWRCB erosion control requirements and permit conditions. Thus, this impact would be **less than significant**.

Mitigation Measures

No mitigation is required in addition to compliance with City Municipal Code Chapter 16.44 and the requirement of SWRCB Construction General Permit Order 2009-0009-DWQ.

Impact 3.6-3: Locate Project Facilities on an Unstable Geologic Unit or Expansive Soils

The Geotechnical Exploration Report identified no geologic stability issues with Project site development. The Project site and off-site improvements would be located in areas where expansive soils likely occur; however, the Project would be required to comply with CBC requirements for the design and construction methods for dealing with expansive soils. This impact would be **less than significant**.

The Geotechnical Exploration Report identified near surface potentially expansive soils on the Project site that are likely located in areas proposed for the off-site improvements. Expansive soils can change in volume with changes in moisture, causing heaving and cracking of slabs, pavements, and structures on shallow foundations. Construction of Project facilities over expansive soils may result in substantial damage to structures and increased risk to site users.

As noted above, the City has adopted the 2019 Edition of the CBC, Title 24, Part 2, Volumes 1 and 2 (City of Elk Grove Municipal Code Section 16.04.010). The CBC's accepted engineering practices require special design and construction methods for dealing with expansive soils that include specific measures for hospital buildings reviewed and approved by the OSHPD. The Geotechnical Exploration Report identifies the following recommendations to address expansive soil (ENGEO 2019):

- ▶ using a minimum footing embedment for buildings with shallow foundations and placing a layer of nonexpansive soils beneath interior flood slabs;
- ▶ implementing specific grading recommendations for compaction of clay soil at the site to reduce the swell potential of the clay by compacting the soil at a high moisture content and controlling the amount of compaction;
- ▶ keeping footing excavations moist before placing foundation concrete;
- ▶ providing positive drainage away from buildings; and
- ▶ restricting landscaping and irrigation near buildings.

The Project's final Geotechnical Exploration Report will be submitted to OSHPD for review and approval. The report will be reviewed by California Geological Survey engineering geologists for compliance with CBC geologic hazard requirements for hospitals and a letter will be provided stating whether all geologic hazards are adequately addressed by the recommendations of the report. OSHPD may issue a conditional approval for sites where the geotechnical report recommendations call for ground modifications to alleviate hazards. In these cases, full approval of the Project is granted after the completion of the recommended ground improvements and receipt of a revised geotechnical hazard report documenting the improved site conditions. The approved report will establish the foundation and structural design criteria necessary for the structural engineer to begin preliminary design.

Compliance with CBC requirements for foundations and expansive soils and the stringent geotechnical review for hospital facilities implemented through OSHPD would ensure that geological hazards related to swelling and contraction are addressed. Thus, this impact would be **less than significant**.

Mitigation Measures

No mitigation is required beyond compliance with the recommendations of the Project Geotechnical Exploration Report after approval by OSHPD.

Impact 3.6-4: Directly or Indirectly Destroy a Paleontological Resource

Deep excavations required for Project construction and off-site infrastructure improvements may disturb or destroy unique paleontological resources. Implementation of Mitigation Measure 3.6-4 would reduce impacts to a **less-than-significant** level.

The Project site and off-site improvement areas have been disturbed by prior development, including the placement of fill materials. Because of this prior disturbance, shallow excavations are unlikely to affect unique paleontological resources. However, excavation for the five proposed basements (assumed to occur at a depth of 20 feet) and off-site infrastructure trenching (assumed to occur at a depth of 12 feet) may enter undisturbed native Riverbank Formation geology. Because similar sediments in the vicinity of the Project area have produced significant paleontological resources, excavation beyond the depth of previous agricultural disturbance (3 feet) or beyond the depth of existing fill material may destroy a unique paleontological resource. Mitigation Measure 3.6-4 would ensure that excavations are completed in a manner that preserves potential paleontological resources. With implementation of this mitigation measure, the potential for implementation of on-site improvements to directly or indirectly destroy a unique paleontological resource would be reduced to a **less-than-significant** level.

Mitigation Measures

Mitigation Measure 3.6-4: Paleontological Monitoring for Deep Excavations

Before the start of any excavation activities, the Project Applicant shall retain a qualified scientist (e.g., geologist, biologist, paleontologist) to train all construction personnel involved with earth-moving activities, including the site superintendent, regarding the possibility of encountering fossils, the appearance and types of fossils likely to be seen during construction, and proper notification procedures to take if fossils are encountered. Training on paleontological resources shall also be provided to all other construction workers but may use a video recording of the initial training and/or written materials rather than in-person training.

If any paleontological resources (fossils) are discovered during grading or construction activities on the Project site, work shall be halted immediately within 50 feet of the discovery, and the City Planning Division shall be immediately notified. The Project Applicant shall retain a qualified paleontologist to evaluate the resource and prepare a recovery plan in accordance with Society of Vertebrate Paleontology guidelines. The recovery plan may include but is not limited to a field survey, construction monitoring, sampling and data recovery procedures, museum storage coordination for any specimen recovered, and a report of findings. Recommendations in the recovery plan that are determined by the City to be necessary and feasible shall be implemented by the Project Applicant before construction activities resume in the area where the paleontological resources were discovered.

Significance after Mitigation

Less than significant.

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3.7 GREENHOUSE GAS EMISSIONS AND CLIMATE CHANGE

This section presents a summary of regulations applicable to greenhouse gas (GHG) emissions, a summary of climate change science and GHG sources in California, quantification of the Project-generated GHGs, and discussion about their contribution to global climate change.

For the purposes of this analysis, GHG emissions are measured as metric tons of carbon dioxide equivalent (MTCO₂e). The atmospheric impact of a GHG is based on the global warming potential (GWP) of that gas. GWP is a measure of the heat-trapping ability of one unit of a gas over a certain timeframe relative to one unit of carbon dioxide (CO₂). The GWP of CO₂ is one (IPCC 2014).

Comments were received from residents in response to the NOP. Commenters noted that the Draft EIR should identify how the Project would meet GHG emission thresholds, evaluate GHG emissions associated with the proposed mechanical yard, and evaluate Project consistency with applicable GHG emission reduction plans. These issues are considered below.

3.7.1 Regulatory Setting

FEDERAL

In *Massachusetts et al. v. Environmental Protection Agency et al.*, 549 U.S. 497 (2007), the Supreme Court of the United States ruled that CO₂ is an air pollutant as defined under the federal Clean Air Act and that the U.S. Environmental Protection Agency (EPA) has the authority to regulate GHG emissions. In 2010, EPA started to address GHG emissions from stationary sources through its New Source Review permitting program, including operating permits for “major sources” issued under Title V of the federal Clean Air Act.

In October 2012, EPA and the National Highway Traffic Safety Administration (NHTSA), on behalf of the U.S. Department of Transportation, issued final rules to further reduce GHG emissions and improve Corporate Average Fuel Economy (CAFE) standards for light-duty vehicles for model years 2017 and beyond (77 *Federal Register* [FR] 62624). These rules would increase fuel economy to the equivalent of 54.5 miles per gallon, limiting vehicle emissions to 163 grams of CO₂ per mile for the fleet of cars and light-duty trucks by model year 2025 (77 FR 62630).

On August 2, 2018, NHTSA and EPA proposed the Safer Affordable Fuel-Efficient Vehicle Rule (SAFE Rule). This rule addresses emissions and fuel economy standards for motor vehicles and is separated into two parts as follows:

- ▶ Part One, “One National Program” (84 FR 51310), revokes a waiver granted by EPA to the State of California under Section 209 of the Clean Air Act to enforce more stringent emission standards for motor vehicles than those required by EPA for the explicit purpose of GHG emission reduction and, indirectly, criteria air pollutant and ozone precursor emission reduction. This revocation became effective on November 26, 2019, restricting the ability of the California Air Resources Board (CARB) to enforce more stringent GHG emission standards for new vehicles and set zero-emission vehicle (ZEV) mandates in California. CARB has estimated the vehicle tailpipe and evaporative emissions impacts on criteria air pollutants and precursors from SAFE Rule Part One and has provided off-model adjustment factors to adjust emission outputs from CARB’s Emission Factor (EMFAC) model.
- ▶ Part Two addresses CAFE standards for passenger cars and light trucks for model years 2021–2026. This rulemaking includes new CAFE standards for model years 2022–2026 and amends existing CAFE standards for model year 2021. The SAFE Rule retains the model year 2020 standards (specifically, the footprint target curves for passenger cars and light trucks) through model year 2026. This adjustment to CAFE standards was jointly developed with EPA, which also proposed tailpipe CO₂ standards for the same vehicles covered by the same model years. Part Two was finalized in April 2020. CARB has estimated the vehicle tailpipe emissions impacts on GHG emissions from SAFE Rule Part Two and has provided off-model adjustment factors to adjust emission outputs from CARB’s EMFAC model.

In June 2019, EPA, under the authority of Clean Air Act Section 111(d), issued the Affordable Clean Energy rule, which provides guidance to states on establishing emissions performance standards for coal-fired electric generating units. Under this rule, states are required to submit plans to EPA that demonstrate the use of specifically listed retrofit technologies and operating practices to achieve CO₂ emission reductions through heat rate improvement. Heat rate improvement is a measurement of power plant efficiency that EPA determined as part of this rulemaking to be the best system of emission reductions for CO₂ generated from coal-fired electric generating units (EPA 2019a).

STATE

Statewide GHG Emission Targets and Climate Change Scoping Plan

Reducing GHG emissions in California has been the focus of the State government for approximately two decades. GHG emission targets established by the State Legislature include reducing Statewide GHG emissions to 1990 levels by 2020 (Assembly Bill [AB] 32 of 2006) (Health and Safety Code Section 38500) and reducing them to 40 percent below 1990 levels by 2030 (Senate Bill [SB] 32 of 2016) (Health and Safety Code Section 38566). Executive Order S-3-05 calls for Statewide GHG emissions to be reduced to 80 percent below 1990 levels by 2050. Executive Order B-55-18 calls for California to achieve carbon neutrality by 2045 and achieve and maintain net negative GHG emissions thereafter. These targets are in line with the scientifically established levels needed in the United States to limit the rise in global temperature to no more than 2 degrees Celsius (°C), the warming threshold at which major climate disruptions, such as super droughts and rising sea levels, are projected; these targets also pursue efforts to limit the temperature increase even further to 1.5°C (United Nations 2015:3).

California's 2017 Climate Change Scoping Plan (2017 Scoping Plan), prepared by CARB, outlines the main strategies California will implement to achieve the legislated GHG emission target for 2030 and “substantially advance toward our 2050 climate goals” (CARB 2017: 1, 3, 5, 25–26). It identifies the reductions needed by each GHG emission sector (e.g., transportation, industry, electricity generation, agriculture, commercial and residential, pollutants with high GWP, and recycling and waste). CARB and other State agencies also released the *January 2019 Draft California 2030 Natural and Working Lands Climate Change Implementation Plan*, consistent with the carbon neutrality goal of Executive Order B-55-18 (CalEPA et al. 2019).

The State has also passed more detailed legislation addressing GHG emissions associated with transportation, electricity generation, and energy consumption, as summarized below.

Transportation-Related Standards and Regulations

As part of its Advanced Clean Cars program, CARB established GHG emission standards and fuel efficiency standards for fossil fuel-powered on-road vehicles that are more stringent than those established by EPA (Health and Safety Code Section 43018.5). In addition, the program's ZEV regulation requires battery, fuel cell, and plug-in hybrid electric vehicles to account for up to 15 percent of California's new vehicle sales by 2025 (CARB 2018a). When the rules are fully implemented by 2025, GHG emissions from the Statewide fleet of new cars and light-duty trucks will be reduced by 34 percent, and cars will emit 75 percent less smog-forming pollution than the Statewide fleet in 2016 (CARB 2019a).

Executive Order B-48-18, signed into law in January 2018, requires all State entities to work with the private sector to have at least 5 million ZEVs on the road by 2030, as well as 200 hydrogen fueling stations and 250,000 electric vehicle-charging stations installed by 2025. It specifies that 10,000 of these charging stations must be direct-current fast chargers.

The Clean Air Act requires that a waiver be provided by EPA for states to enact more stringent emissions standards for new cars (74 Code of Federal Regulations Part 32744). EPA granted this waiver to CARB on June 14, 2011; however, in addition to the SAFE Rule, but as a separate action, on September 19, 2019, EPA issued a final action entitled the “One National Program Rule,” which would institute a nationwide, uniform fuel economy and GHG standard for all automobiles and light-duty trucks (EPA 2019b) (40 Code of Federal Regulations Part 85). The action would include the revocation of California's waiver under the Clean Air Act, which would affect the enforceability of CARB's ZEV programs. Although EPA has issued an action to revoke the waiver, the outcome of any related lawsuits and how such lawsuits could delay or affect the SAFE Rule implementation or CARB's ZEV programs are unknown at this time.

CARB adopted the Low Carbon Fuel Standard (LCFS) in 2007 to reduce the carbon intensity of California's transportation fuels (California Code of Regulations Title 17 Section 95480). The LCFS applies to fuels used by on-road motor vehicles and off-road vehicles, including construction equipment (Wade, pers. comm., 2017).

In addition to regulations that address tailpipe emissions and transportation fuels, the State legislature has passed regulations to address the amount of driving by on-road vehicles. Since passage of SB 375 in 2008 (Chapter 728, Statutes of 2008), CARB requires metropolitan planning organizations (MPOs) to develop and adopt sustainable communities strategies in addition to the federally prepared regional transportation plans that show reductions in GHG emissions from passenger cars and light-duty trucks in their respective regions for 2020 and 2035 (CARB 2018b:1). These plans link land use and housing allocation to transportation planning and related mobile-source emissions. The Sacramento Area Council of Governments (SACOG) serves as the MPO for Sacramento, Placer, El Dorado, Yuba, Sutter, and Yolo Counties, excluding those lands located in the Lake Tahoe Basin. SACOG adopted its first Metropolitan Transportation Plan/Sustainable Communities Strategy (MTP/SCS) in 2012 and completed its first update in February 2016. SACOG was tasked by CARB to achieve a 7-percent per capita reduction compared to 2012 emissions by 2020 and a 16-percent per capita reduction by 2035, which CARB confirmed the region would achieve by implementing its MTP/SCS (CARB 2016). In March 2018, CARB adopted the Target Update for the SB 375 targets, tasking SACOG to achieve a 7-percent and a 19-percent per capita reduction by 2020 and 2035, respectively (CARB 2018b). On November 18, 2019, SACOG adopted its 2020 MTP/SCS to demonstrate compliance with these targets (SACOG 2019).

SB 743 of 2013 added PRC Section 21099, which required that the Governor's Office of Planning and Research (OPR) propose changes to the State CEQA Guidelines to address transportation impacts in transit priority areas and other areas of the State. In response, Section 15064.3 was added to the State CEQA Guidelines in December 2018, requiring that transportation analyses no longer consider congestion but instead focus on the impacts of vehicle miles traveled (VMT). Agencies implemented these changes on July 1, 2020. In support of these changes, OPR published its *Technical Advisory on Evaluating Transportation Impacts in CEQA*, which recommends that the transportation impact of a project be based on whether the project would generate a level of VMT per capita (or VMT per employee or some other metric) that is 15 percent lower than that of existing development in the region (OPR 2018:12–13) or that a different threshold be used based on substantial evidence. OPR's technical advisory explains that this criterion is consistent with PRC Section 21099, which states that the criteria for determining significance must "promote the reduction in greenhouse gas emissions" (OPR 2018:18). This metric is intended to replace the use of delay and level of service to measure transportation-related impacts. More detail about SB 743 is provided in the "Regulatory Setting" section of Section 3.14, "Transportation."

Legislation Associated with Electricity Generation

The State has passed legislation requiring the increasing use of renewables to produce electricity for consumers. California utilities are required to generate 33 percent of their electricity from renewables by 2020 (SB X1-2 of 2011) (Public Utilities Code [PUC] Section 399.30), 52 percent by 2027 (SB 100 of 2018) (PUC Section 454.53), 60 percent by 2030 (also SB 100 of 2018), and 100 percent by 2045 (also SB 100 of 2018).

Building Energy Efficiency Standards (Title 24, Part 6)

The energy consumption of new residential and nonresidential buildings in California is regulated by California Code of Regulations Title 24, Part 6, Building Energy Efficiency Standards (California Energy Code). The California Energy Commission (CEC) updates the California Energy Code every 3 years with more stringent design requirements for reduced energy consumption, which results in the generation of fewer GHG emissions. The current California Energy Code requires builders to use more energy-efficient building technologies for compliance with increased restrictions on allowable energy use. CEC estimates that the 2019 California Energy Code will result in new buildings that use 30 percent less energy than those designed to meet the 2016 standards, primarily through the transition to high-efficacy lighting (CEC 2018).

California Integrated Waste Management Act

To minimize the amount of solid waste that must be disposed of in landfills, the State Legislature passed the California Integrated Waste Management Act of 1989 (AB 939) (Chapter 1095, Statutes of 1989), effective January 1990. According to AB 939, all cities and counties were required to divert 25 percent of all solid waste from landfill facilities by January 1, 1995, and 50 percent by January 1, 2000. Through other statutes and regulations, this 50-percent diversion rate also applies to State agencies. In order of priority, waste reduction efforts must promote source reduction, recycling and composting, and environmentally safe transformation and land disposal. In 2018, per capita disposal rates for Elk Grove (3.3 pounds per day [lb/day] per capita) are below the target disposal rates established by AB 939 (5.9 lb/day per capita) (CalRecycle 2019).

In 2011, AB 341 (Chapter 476, Statutes of 2011) modified the California Integrated Waste Management Act and directed the California Department of Resources Recycling and Recovery to develop and adopt regulations for mandatory commercial recycling. The resulting Mandatory Commercial Recycling Regulation (2012) requires that on and after July 1, 2012, certain businesses that generate 4 cubic yards or more of commercial solid waste per week shall arrange recycling services. To comply with this requirement, businesses may either separate recyclables and self-haul them or subscribe to a recycling service that includes mixed waste processing. AB 341 also established a Statewide recycling goal of 75 percent; the 50-percent disposal reduction mandate still applies for cities and counties under AB 939, the California Integrated Waste Management Act.

Assembly Bill 900

In September 2011, Governor Brown signed the Jobs and Economic Improvement Through Environmental Leadership Act, which created PRC Chapter 6.5 under Division 13 of the PRC (CEQA) and required the governor to establish procedures for applying for streamlined environmental review under CEQA for projects that meet certain requirements. As described in Chapter 2, "Project Description," the Project was certified as an eligible project under AB 900 by the governor on December 30, 2019. PRC Section 21183(b) requires the Project to commit to no additional net GHG emissions. In addition, AB 900 requires that the Project achieves at least 15 percent greater transportation efficiency, as defined in PRC Section 21180(c), than comparable projects. Achievement of transportation efficiency results in a decrease in VMT, which reduces GHG emissions from mobile sources. AB 900 further requires achievement of U.S. Green Building Council's Leadership in Energy and Environmental Design Gold certification or better. This often results in building energy efficiency that also results in GHG emission reductions.

LOCAL

2020 Sacramento Area Council of Governments Metropolitan Transportation Plan/Sustainable Communities Strategy

SACOG is designated by the federal government as the MPO for the Sacramento region, which requires SACOG to maintain a regional transportation plan that must be updated every 4 years in coordination with each local government. Placer and El Dorado Counties are unique in this arrangement in that each has its own State designation as a Regional Transportation Planning Agency (RTPA) that is responsible for developing its own transportation plans. SACOG is the RTPA for Sacramento, Sutter, Yolo, and Yuba Counties. SACOG works in coordination with the Placer County Transportation Planning Agency and the El Dorado County Transportation Commission to ensure consistency between these two county-specific plans and the broader regionwide plan. The MTP/SCS is required to be a 20-year multimodal transportation plan that is financially feasible, achieves health standards for clean air, and addresses Statewide climate goals. The MTP/SCS land use forecast identifies the general location of different types of land uses, residential densities, employment intensities, and natural resource areas.

Under a State law, SB 375, SACOG is responsible for conducting land use and transportation planning in a way that reduces GHG emissions from cars and light-duty trucks. Under SB 375, CARB is responsible for issuing GHG targets to MPOs that aim to reduce vehicle emissions, consistent with State climate goals, by 2035 as compared to a 2005 baseline. For the 2020 MTP/SCS, CARB assigned SACOG a target of a 19-percent per capita GHG reduction.

The Project site is located within the Established Community type identified in the 2020 MTP/SCS. The 2020 MTP/SCS forecasts approximately 6,290 new housing units and 8,500 new employees for the planning period from 2020 to 2040.

Sacramento Metropolitan Air Quality Management District

The Sacramento Metropolitan Air Quality Management District (SMAQMD) is the primary agency responsible for addressing air quality concerns in all of Sacramento County. Its role is discussed further in Section 3.2, "Air Quality." SMAQMD recommends methods for analyzing project-generated GHGs in CEQA analyses and offers multiple potential GHG reduction measures for land use development projects. It also developed thresholds of significance to provide a uniform scale to measure the significance of GHG emissions from land use and stationary source projects in compliance with CEQA (SMAQMD 2018). SMAQMD's goals in developing GHG thresholds include ease of implementation, use of standard analysis tools, and emissions mitigation consistent with the Statewide GHG targets mandated by AB 32 of 2006. SMAQMD is currently updating its guidance and thresholds of significance for GHG emissions. In March 2020, SMAQMD released the draft *Greenhouse Gas Thresholds for Sacramento County* guidance document. The methods used in this analysis are still consistent with SMAQMD guidance.

City of Elk Grove

General Plan

The following policies from the *City of Elk Grove General Plan* are applicable to the Project (City of Elk Grove 2019a):

- ▶ **Policy NR-4-4:** Promote pedestrian/bicycle access and circulation to encourage residents to use alternative modes of transportation in order to minimize direct and indirect emissions of air contaminants.
- ▶ **Policy NR-4-5:** Emphasize demand management strategies that seek to reduce single-occupant vehicle use in order to achieve State and federal air quality plan objectives.
- ▶ **Policy NR-5-1:** By 2030, reduce per capita emissions greenhouse gas emissions to 4.1 MTCO₂e. By 2050, reduce per capita greenhouse gas emissions 1.4 MTCO₂e to meet the State's 2050 greenhouse gas emissions reduction goals.
- ▶ **Policy NR-5-2:** Improve the health and sustainability of the community through improved regional air quality and reduction of greenhouse gas emissions that contribute to climate change.
- ▶ **Policy NR-5-4:** Preserve, protect, and enhance, as appropriate, the community's carbon sequestration resources to improve air quality and reduce net carbon emissions.
- ▶ **Policy NR-6-1:** Promote energy efficiency and conservation strategies to help residents and businesses save money and conserve valuable resources.
- ▶ **Policy NR-6-5:** Promote energy conservation measures in new development to reduce on-site emissions and seek to reduce the energy impacts from new residential and commercial projects through investigation and implementation of energy efficiency measures during all phases of design and development.
- ▶ **Policy NR-6-7:** Encourage the use of solar energy systems in homes, commercial businesses, and City facilities as a form of renewable energy.
- ▶ **Policy SD-2-2:** Support innovation and green building best management practices for all new private development.

Climate Action Plan

The City Climate Action Plan 2019 Update (CAP), adopted in February 2019 and amended in December 2019 by the City, was incorporated into the current General Plan (discussed above). The CAP includes GHG emission reduction targets, strategies, and implementation measures developed to help the City reach these targets. Reduction strategies address GHG emissions associated with transportation and land use, energy, water, waste management and recycling, agriculture, and open space. Through the deployment of measures included in the CAP, as well as reductions achieved by Statewide regulatory schemes, consistent with direction from SB 32, the City would achieve a

per capita emissions target of 4.1 MTCO₂e per year by 2030; however, based on projection within the CAP, the City would be expected to reduce per capita emissions to 3 MTCO₂e per year by 2050, which exceeds the State's 2050 reduction target of 1.4 MTCO₂e per year (City of Elk Grove 2019b:4-3). As discussed in the CAP, "additional technological advances across multiple sectors would be required to reduce emission further, combined with additional regulatory actions at the State or federal levels." Further, the City "would identify new or modified GHG reduction measures that would achieve longer-term, post-2030 targets that may be set by the State or others in the future" (City of Elk Grove 2018:5.7-37).

3.7.2 Environmental Setting

THE PHYSICAL SCIENTIFIC BASIS OF GREENHOUSE GAS EMISSIONS AND CLIMATE CHANGE

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 atmosphere from space. A portion of the radiation is absorbed by the earth's surface, and a smaller portion of this radiation is reflected toward space. The absorbed radiation is then emitted from the earth as low-frequency infrared radiation. The frequencies at which bodies emit radiation are proportional to temperature. The earth has a much lower temperature than the sun; therefore, the earth emits lower-frequency radiation. Most solar radiation passes through GHGs; however, infrared radiation is absorbed by these gases. As a result, radiation that otherwise would have escaped back into space is instead "trapped," resulting in a warming of the atmosphere. This phenomenon, known as the greenhouse effect, is responsible for maintaining a habitable climate on earth.

Prominent GHGs contributing to the greenhouse effect are CO₂, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. Human-caused emissions of these GHGs in excess of natural ambient concentrations are found to be responsible for intensifying the greenhouse effect and leading to a trend of unnatural warming of the earth's climate, known as global climate change or global warming. It is "extremely likely" that more than half of the observed increase in global average surface temperature from 1951 to 2010 was caused by the anthropogenic increase in GHG concentrations and other anthropogenic forcing (IPCC 2014:5).

Climate change is a global problem. GHGs are global pollutants, unlike criteria air pollutants and toxic air contaminants, which are pollutants of regional and local concern. Whereas most pollutants with localized air quality effects have relatively short atmospheric lifetimes (approximately 1 day), GHGs have long atmospheric lifetimes (1 year to several thousand years). GHGs persist in the atmosphere long enough to be dispersed around the globe. Although the lifetime of any GHG molecule depends on multiple variables and cannot be determined with any certainty, it is understood that more CO₂ is emitted into the atmosphere than is sequestered by ocean uptake, vegetation, and other forms of sequestration. Of the total annual human-caused CO₂ emissions, approximately 55 percent are estimated to be sequestered through ocean and land uptake every year, averaged over the last 50 years, whereas the remaining 45 percent of human-caused CO₂ emissions remain stored in the atmosphere (IPCC 2013:467).

The quantity of GHGs in the atmosphere responsible for climate change is not precisely known, but it is enormous. In 2019, the total average amount of CO₂ in the atmosphere was approximately 414 parts per million. No single project alone would measurably contribute to an incremental change in the global average temperature or to global or local climates or microclimates. From the standpoint of CEQA, GHG impacts relative to global climate change are inherently cumulative.

GREENHOUSE GAS EMISSION SOURCES

As discussed previously, GHG emissions are attributable in large part to human activities. Emissions of CO₂ are generally the byproducts of fossil fuel combustion. Methane, a highly potent GHG, primarily results from off-gassing (the release of chemicals from nonmetallic substances under ambient or greater pressure conditions) and is largely associated with agricultural practices, organic material decomposition in landfills, and the burning of forest fires.

Nitrous oxide emissions are also largely attributable to agricultural practices and soil management. CO₂ sinks, or reservoirs, include vegetation and the ocean, which absorb CO₂ through sequestration and dissolution (CO₂ dissolving into the water), respectively, two of the most common processes for removing CO₂ from the atmosphere.

The total GHG inventory for California in 2017 was 424 million metric tons of carbon dioxide equivalent (MMTCO₂e) (CARB 2019b). This is less than the 2020 target of 431 MMTCO₂e (CARB 2019c:1). Table 3.7-1 summarizes the Statewide GHG inventory for California.

Table 3.7-1 Statewide GHG Emissions by Economic Sector

Sector	Percent
Transportation	40
Industrial	21
Electricity Power	15
Commercial and Residential	10
Agriculture	8
High GWP	5
Recycling and Waste	2

Note: GWP = global warming potential.

Source: CARB 2019c

As shown in Table 3.7-1, transportation, industrial activity, and electricity generation are the largest GHG emission sectors.

A GHG inventory for the City is provided in the City's CAP and summarized in Table 3.7-2. As shown below, on-road vehicles and residential, commercial, and industrial energy consumption constitute the greatest sources of emissions.

Table 3.7-2 City of Elk Grove's Greenhouse Gas Emissions Inventory for 2013 and Business-as-Usual Forecast Years (MTCO₂e)

Emissions Sector	2013	2020	2030	2050
On-Road Vehicles	730,340	645,542	844,317	1,241,867
Residential Energy	231,400	257,171	310,017	413,560
Commercial/Industrial Energy	129,860	147,685	196,037	293,532
Off-Road Vehicles	93,340	102,776	123,896	165,275
Solid Waste	26,260	36,181	39,817	47,781
Wastewater	3,854	4,283	5,163	6,888
Water-Related	2,708	3,010	3,628	4,840
Agriculture	1,030	2,585	1,061	299
Total	918,790	1,199,232	1,523,936	2,174,042

Notes: Totals may not equal the sum of the numbers because of independent rounding.

MTCO₂e = metric tons of carbon dioxide equivalent.

Source: City of Elk Grove 2019b:Appendix A

EFFECTS OF CLIMATE CHANGE ON THE ENVIRONMENT

According to the Intergovernmental Panel on Climate Change, which was established in 1988 by the World Meteorological Organization and the United Nations Environment Programme, global average temperature will increase by 3.7 to 4.8°C (6.7 to 8.6 degrees Fahrenheit [°F]) by the end of the century unless additional efforts to reduce GHG emissions are made (IPCC 2014:10). According to *California's Fourth Climate Change Assessment*, with global GHGs reduced at a moderate rate, California will experience average daily high temperatures that are warmer than the historic average by 2.5°F from 2006 to 2039, by 4.4°F from 2040 to 2069, and by 5.6°F from 2070 to 2100,

and if GHG emissions continue at current rates, then California will experience average daily high temperatures that are warmer than the historic average by 2.7°F from 2006 to 2039, by 5.8°F from 2040 to 2069, and by 8.8°F from 2070 to 2100 (OPR et al. 2018:5).

Since its previous climate change assessment in 2012, California has experienced several of the most extreme natural events in its recorded history: a severe drought from 2012 through 2016, an almost nonexistent Sierra Nevada winter snowpack in 2014–2015, increasingly large and severe wildfires, and back-to-back years of the warmest average temperatures (OPR et al. 2018:3). According to the California Natural Resources Agency's *Safeguarding California Plan: 2018 Update*, California experienced the driest 4-year Statewide precipitation on record from 2012 through 2015; the warmest years on average in 2014, 2015, and 2016; and the smallest and second smallest Sierra snowpack on record in 2015 and 2014 (CNRA 2018:55). According to the National Oceanic and Atmospheric Administration and National Aeronautics and Space Administration, 2016, 2017, and 2018 were the hottest recorded years in history (NOAA 2019). In contrast, the northern Sierra Nevada experienced one of its wettest full years on record during the 2016–2017 water year (CNRA 2018:64). The changes in precipitation exacerbate wildfires throughout California through a cycle of high vegetative growth coupled with dry, hot periods that lower the moisture content of fuel loads. As a result, the frequency, size, and devastation of forest fires increase. In November 2018, the Camp Fire devastated the Town of Paradise in Butte County and caused 85 fatalities, becoming the State's deadliest fire in recorded history. Moreover, changes in the intensity of precipitation events following wildfires can also result in devastating landslides. In January 2018, following the Thomas Fire, 0.5 inch of rain fell in 5 minutes in Santa Barbara, causing destructive mudslides formed from the debris and loose soil left behind by the fire. These mudslides resulted in 21 deaths.

As temperatures increase, the amount of precipitation falling as rain rather than snow also increases, which could lead to increased flooding because water that would normally be held in the snowpack of the Sierra Nevada and Cascade Range until spring would flow into the Central Valley during winter rainstorm events. This scenario would place more pressure on California's levee/flood control system (CNRA 2018:190–192). Furthermore, in the extreme scenario involving the rapid loss of the Antarctic ice sheet and the glaciers atop Greenland, the sea level along California's coastline is expected to rise 54 inches by 2100 if GHG emissions continue at current rates (OPR et al. 2018:6).

Temperature increases and changes to historical precipitation patterns will likely affect ecological productivity and stability. Existing habitats may migrate from climatic changes where possible, and those habitats and species that lack the ability to retreat will be severely threatened. Altered climate conditions will also facilitate the movement of invasive species to new habitats, where they may outcompete native species. Altered climatic conditions dramatically endanger the survival of arthropods (e.g., insects, spiders), which could have cascading effects throughout ecosystems (Lister and Garcia 2018). Conversely, a warming climate may support the populations of other insects, such as ticks and mosquitos, that transmit diseases harmful to human health, such as the Zika virus, West Nile virus, and Lyme disease (European Commission Joint Research Centre 2018).

Changes in temperature, precipitation patterns, extreme weather events, wildfires, and sea-level rise have the potential to threaten transportation and energy infrastructure, crop production, forests and rangelands, and public health (CNRA 2018:64, 116–117, 127; OPR et al. 2018:7–14). The effects of climate change will also have an indirect adverse impact on the economy as more severe natural disasters cause expensive, physical damage to communities and the State.

Additionally, adjusting to the physical changes associated with climate change can produce mental health impacts, such as depression and anxiety.

Cal-Adapt is a climate change scenario planning tool developed by CEC that downscales global climate model data to local and regional resolution under two emissions scenarios. The Representative Concentration Pathway (RCP) 8.5 scenario represents a business-as-usual future emissions scenario, and the RCP 4.5 scenario represents a future with reduced GHG emissions. According to Cal-Adapt, annual average maximum temperatures in the Project area are projected to rise by 5.9°F to 10.9°F by 2099, with the low and high ends of the range reflecting the lower and higher emissions increase scenarios (CEC 2019). Annual average minimum temperatures are expected to rise within a similar range.

The Project area experienced an annual average high temperature of 73.6°F between 1961 and 1990. Under the RCP 4.5 scenario, the Project area's annual average high temperature is projected to increase by 4.6°F to 78.2°F by 2050

and increase an additional 0.5°F to 78.7°F by 2099 (CEC 2019). Under the RCP 8.5 scenario, the Project area's annual average high temperature is projected to increase by 4.7°F to 78.3°F by 2050 and increase an additional 4.6°F to 82.9°F by 2099 (CEC 2019).

The Project area experienced an average precipitation of 17.3 inches per year between 1961 and 1990. Under the RCP 4.5 scenario, the Project area is projected to experience an increase of 6.8 inches to 24.1 inches per year by 2050 and decrease to 19.0 inches per year by 2099 (CEC 2019). Under the RCP 8.5 scenario, the Project area is projected to experience an increase of 9.9 inches to 27.2 inches per year by 2050 and decrease to 22.3 inches per year by 2099 (CEC 2019).

EXISTING PROJECT SITE EMISSIONS

The Project site is currently occupied by a total of nine structures that encompass a total of 282,246 square feet of building space. This includes the 109,800-square-foot, two-story School of Medicine building at 9700 West Taron Drive, a 76,000-square-foot office building at 9650 West Taron Drive currently occupied by ALLDATA, and seven additional buildings comprising 2501 through 2619 West Taron Drive currently occupied by a number of different uses, including eating establishments, a brewery, an animal hospital, the CNU Psychology College, and other commercial and retail uses. A gas station, fast-food restaurants, and a church are adjacent to the site. Roadway access to the Project site is provided from West Taron Drive and Riparian Drive.

Existing Project site emissions include those associated with mobile sources, building energy use, water demand and wastewater treatment, and solid waste generation. Table 3.7-3 shows the existing site's annual operation-related GHG emissions. The methodology for quantifying the existing site's emissions is described in Section 3.7.3, below. Details on the modeling inputs for the existing land uses can be found in Appendix F.

Table 3.7-3 Existing Site Operation-Related GHG Emissions (MTCO₂e/year)

Emissions Source	Annual GHG Emissions
Area	<1
Energy	488
Mobile	8,084
Solid Waste	67
Water and Wastewater	14
Stationary ¹	20
Total	8,673

¹ Stationary source includes backup diesel generator.

Notes: Totals may not equal the sum of the numbers because of independent rounding.

GHG = greenhouse gas; MTCO₂e = metric tons of carbon dioxide equivalent.

Source: Modeling conducted by Ascent Environmental in 2020

3.7.3 Impacts and Mitigation Measures

METHODOLOGY

GHG emissions associated with the Project would be generated during Project construction and during operation after the Project is built. The existing Project site is currently developed, and its land uses also result in the generation of GHG emissions. Estimated levels of the existing site, construction-related, and operation-related GHG emissions are presented below. The Project is evaluated for its consistency with adopted regulations, plans, and policies aimed at reducing GHG emissions, including the 2017 Scoping Plan, SACOG's adopted MTP/SCS, and the City General Plan and CAP.

Existing Site Greenhouse Gas Emissions

To quantify emissions from the existing land uses, the California Emissions Estimator Model (CalEEMod) Version 2016.3.2 (CAPCOA 2016) was used, as recommended by SMAQMD and other air districts in California. Emissions were estimated for three operational years based on the building types and sizes that would be demolished under each Project phase. Water demand for existing uses was provided by the Project Applicant, and existing VMT was provided by the traffic impact analysis conducted for the Project. A backup diesel-powered generator was assumed to be used for the ALLDATA building located at 9650 West Taron Drive. For all other GHG emissions sources, default values in CalEEMod were used.

Construction-Related Greenhouse Gas Emissions

Short-term construction-generated GHG emissions were calculated using CalEEMod. CalEEMod construction emissions modeling is based on data from CARB's OFFROAD2011 off-road equipment emissions tool and EMFAC2014 on-road vehicle emissions tool. CalEEMod was manually programmed with Project-specific data provided by the Project Applicant, such as construction activities and phasing, number of haul truck trips, amount of excavated material, and number of construction workers by phase. Where construction information was not available from the Project Applicant, CalEEMod default values were used, such as number and type of construction equipment, as well as areas to be graded. Construction equipment assumptions used in CalEEMod are based on construction surveys and the total Project acreage. Areas to be graded are calculated using construction surveys and EPA methodology. For details on construction modeling inputs, refer to Appendix F.

Each of the three construction phases would include demolition, site preparation, excavation, building construction, paving, and architectural coating. During demolition, building waste would be hauled off-site. Site preparation and excavation phases would involve the import and export of soil. Phases 2 and 3 were separated into several subphases based on the order in which buildings are anticipated to be constructed. For details on construction phasing, refer to Appendix F.

Operation-Related Greenhouse Gas Emissions

Operation of the Project would result in annual GHG emissions from mobile sources, building energy use, water demand and wastewater treatment, and solid waste generation. The Project's annual calendar year operation-related emissions were compared to the existing Project site's annual operation-related GHG emissions to determine the net change in GHG emissions. Emissions were estimated for a 30-year land use Project lifetime, as recommended by CARB pursuant to the AB 900 application process (Appendix C).

Operation-related emissions of GHGs were estimated using a variety of sources and models. The CalEEMod (Version 2016.3.2) software was used to estimate emissions from water and wastewater, solid waste disposal, and area sources, such as landscaping equipment. Operation-related GHG emissions were estimated using Project-specific information where available, as well as default values in CalEEMod based on the Project's location, size, and land use types. Mobile-source emissions associated with on-road VMT were estimated using EMFAC2017 emission factors for the default fleet mix in Sacramento County for each applicable year (i.e., Project-generated emissions by phase), and the Project's daily trip generation and daily VMT were estimated based on the operation of all proposed land uses during a typical weekday. Annual VMT was based on multiplying the daily VMT by a factor of 347, which takes into account reduced VMT from weekends and holidays (CARB n.d.:14). Project-specific VMT, modeling inputs, and results are provided in Appendix F.

As described in Table 2-3 of Chapter 2, "Project Description," helicopters would be used for emergency response activities, and associated emissions were calculated using The Climate Registry's 2017 Default Emission Factors for jet fuel. Emissions from helicopter use were estimated based on Project-specific data, including the number of landing and takeoff cycles, number of cruising hours per day, and helicopter engine model type. The reader is referred to Chapter 2, "Project Description," for further details on anticipated helicopter operations. Energy-related emissions associated with electricity, natural gas, and diesel fuel were estimated using utility-specific and Climate Registry emission factors.

Energy-related sources of GHG emissions include combustion of natural gas associated with the on-site central plant, combustion of diesel associated with four backup diesel-powered generators, and indirect emissions associated with electricity generated off-site and provided by the Sacramento Municipal Utility District (SMUD). The Project's on-site central plant would be natural gas-fired and would provide heating and cooling capabilities to the hospital, as well as other Project buildings. The Project would install four backup diesel-powered generators; emissions associated with the generators were quantified using diesel emission factors provided by The Climate Registry's 2017 Default Emission Factors. Indirect emissions associated with electricity generation were quantified using consumption estimates and emission factors for SMUD that were adjusted for Renewables Portfolio Standard compliance for the buildout year of 2030 (i.e., 60-percent renewable).

Detailed model assumptions and inputs for these calculations are presented in Appendix F.

THRESHOLDS OF SIGNIFICANCE

The issue of global climate change is inherently a cumulative issue because the GHG emissions of individual projects cannot be shown to have any material effect on global climate. Thus, the Project's impact on climate change is addressed only as a cumulative impact.

Implementing the Project would result in a cumulatively considerable contribution to climate change if it would:

- ▶ generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment or
- ▶ conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of GHGs.

Because the Project has been certified pursuant to AB 900, the Project must meet the GHG requirements included in the OPR AB 900 guidelines. The Project must demonstrate that it would not result in any net additional GHG emissions, including those associated with employee transportation and construction. As shown in Table 3.7-3, above, the existing site's emissions are 8,673 MTCO₂e/year. Thus, the Project's construction- and operation-related emissions may not exceed 8,673 MTCO₂e/year. The reader is referred to Appendix C regarding the AB 900 application.

ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Impact 3.7-1: Generate GHG Emissions That May Have a Significant Impact on the Environment

Construction activity associated with development of the Project is estimated to generate a total of 8,886 MTCO₂e. Operation of the Project would result in GHG emissions associated with mobile sources, area sources, building energy, water consumption, and wastewater and solid waste generation. After full buildout of the Project in 2030, the Project would generate 43,991 MTCO₂e/year, including the total construction emissions amortized by 30 years. The existing Project site generates 8,673 MTCO₂e/year. Thus, the Project would result in a net increase in GHG emissions of 35,318 MTCO₂e/year, which would exceed the identified threshold of no net additional increase in GHG emissions over existing conditions. Implementation of Mitigation Measures 3.7-1a and 3.7-1b would reduce carbon emissions and require purchasing offsets, such that the Project would result in no net additional increase in GHG emissions associated with Project implementation. These mitigation measures would reduce this impact to a **less-than-significant** level.

GHG emissions associated with the Project would be generated during construction and operation. Project-related construction activities would result in the generation of GHG emissions from the use of heavy-duty off-road construction equipment, delivery trucks associated with materials transport, and vehicle use during the worker commute. The total GHG emissions for Project construction from off-road construction equipment and on-road travel over the 10-year buildout period would be 8,886 MTCO₂e. Construction-related emissions were amortized over a 30-year Project lifetime and are shown in Table 3.7-4, below.

Operation of the Project would result in mobile-source GHG emissions from vehicle trips (i.e., Project-generated VMT); area-source emissions from the operation of landscape maintenance equipment; energy use emissions from

the consumption of electricity, natural gas, and diesel; helicopter-related emissions; water-related energy consumption associated with water use and the conveyance and treatment of wastewater; and waste-generated emissions from the transport and disposal of solid waste. Emissions are summarized in Table 3.7-4 by source for the buildout year of 2030.

Table 3.7-4 GHG Emissions Associated with Project Construction and Operation in 2030 (MTCO₂e)

Emissions Source	Annual GHG Emissions
Area	3
Energy	14,682
Mobile ¹	25,283
Solid waste	2,685
Water and wastewater	138
Stationary ²	925
Amortized construction ³	296
Total	43,991

¹ Helicopter-related emissions included in mobile sources.

² Stationary sources include four backup diesel generators.

³ Construction emissions amortized over 30 years. Total construction emissions were estimated to be 8,886 MTCO₂e.

Notes: Totals may not equal the sum of the numbers because of independent rounding.

GHG = greenhouse gas; MTCO₂e = metric tons of carbon dioxide equivalent.

Source: Modeling conducted by Ascent Environmental in 2020

Table 3.7-5 summarizes the GHG emissions from the existing site and operation-related emissions associated with the Project. The net increase in GHG emissions from Project implementation is the amount of annual GHG emissions that would need to be mitigated through on-site and off-site measures.

Table 3.7-5 Summary of Net Increase in GHG Emissions in 2030 (MTCO₂e)

Source	Annual GHG Emissions
Existing site	-8,673
Project operation and amortized construction	43,991
Net increase in GHG emissions	35,318

Notes: GHG = greenhouse gas; MTCO₂e = metric tons of carbon dioxide equivalent.

Source: Modeling conducted by Ascent Environmental in 2020

As described in Chapter 2, "Project Description," the Project would require off-site improvements that would consist of an emergency left-turn pocket on Elk Grove Boulevard, SMUD distribution and substation site improvements, implementation of roadway improvements required for compliance with General Plan Policy MOB 1-3, and wastewater conveyance facility improvements along Riparian Drive. GHG emissions would be generated from the use of heavy-duty off-road construction equipment and vehicle use during the worker commute. These improvements would result in approximately 612 MTCO₂e for the duration of the construction period and were added to the Project's on-site construction emissions reported in Table 3.7-4, above. Because construction activities associated with off-site improvements would result in a net increase in GHG emissions, it would contribute to the Project's exceedance of the no net increase threshold, as indicated above.

Because the Project would have a net increase in GHG emissions over the existing Project site of 35,318 MTCO₂e/year, the Project would not meet the no net increase threshold (i.e., 8,673 MTCO₂e/year) identified for the Project. Implementation of Mitigation Measures 3.7-1a would reduce carbon emissions and require purchasing offsets, such that the Project would result in no net additional increase in GHG emissions associated with Project implementation. This mitigation measure would reduce this impact to a **less-than-significant** level.

Mitigation Measures

Mitigation Measure 3.7-1a: Reduce GHG Emissions On-Site

The Project Applicant shall implement the following measures identified in Appendix F of the certified AB 900 application, which would offset the net increase in GHG emissions to the satisfaction of the City Development Services Department (included as Appendix C of this EIR):

- ▶ **Solar photovoltaics:** The Project shall install solar photovoltaics on Project building roofs. Solar installations shall generate approximately 5,443 megawatt-hours of electricity per year.
- ▶ **SMUD Greenergy program:** After installation of the solar photovoltaics, the Project would still consume electricity provided by SMUD. The Project shall purchase 100-percent renewable energy provided through SMUD's Greenergy program for the remaining electricity demands of the Project, rather than using SMUD's average renewable mix in 2030. This will effectively offset all electricity-related GHG emissions associated with the Project.
- ▶ **Electric vehicle chargers:** The Project shall install Level 2 electric vehicle (EV) charging stations. Each EV charging station shall serve multiple parking spaces, and the electricity load for the parking garages shall ensure that all EV chargers are able to be in service at the same time. Installation of the charging stations shall be phased in the following manner so that EV charging is available for 5 percent of the total parking for each phase, consistent with City Municipal Code Section 23.58.120. Final site plans for parking shall also identify an additional 5 percent of parking for each phase for potential future EV charging consistent with City Municipal Code Section 23.58.120:
 - Phase 1: 37 total charging stations that serve 74 total parking spaces,
 - Phase 2: 73 total charging stations that serve 144 total parking spaces, and
 - Phase 3: 84 total charging stations that serve 166 parking spaces.
- ▶ **Transportation Demand Management Plan:** The Project shall include a Transportation Demand Management (TDM) Plan consistent with the City CAP and the City TDM Plan Guidelines. The TDM Plan developed for the Project shall include measure categories such as marketing and promotion, bike facilities, on-site amenities, transit, commuter benefits, and parking facilities. With the implementation of these measures, the Project will achieve at least a 30-percent transportation efficiency (which would result in a 30-percent reduction in VMT). Implementing a TDM Plan is included in this EIR as Mitigation Measure 3.14-1 in Section 3.14, "Transportation."
- ▶ **Vegetation change:** After Project construction, 313 new trees shall be planted.

These design features would result in reduced GHG emissions on-site. Each feature was quantified in the AB 900 application, which is included as Appendix C. Table 3.7-6 shows the GHG emission reduction associated with each Project design feature.

Table 3.7-6 GHG Reduction Associated with Project Features in 2030 (MTCO₂e)

Reduction Source	Annual GHG Emissions Reduced
Solar photovoltaics	1,002
SMUD Greenergy program	7,363
EV charging	801
TDM Plan	7,489
Carbon sequestration	11
Total	16,666

Notes: GHG = greenhouse gas; MTCO₂e = metric tons of carbon dioxide equivalent; SMUD = Sacramento Municipal Utility District; EV = electric vehicle; TDM = Transportation Demand Management.

Source: Modeling conducted by Ascent Environmental in 2019

After implementation of all Project features, the Project would still result in a net increase in GHG emissions of 18,651 MTCO₂e/year, as shown in Table 3.7-7.

Table 3.7-7 Summary of Net Increase in GHG Emissions in 2030 with Project Features (MTCO₂e)

Source	Annual GHG Emissions (MTCO ₂ e)
Existing site	-8,673
Project operation and amortized construction	43,991
Project features	-16,666
Net increase in GHG emissions	18,651

Notes: Total may not equal the sum of the numbers because of independent rounding.

GHG = greenhouse gas; MTCO₂e = metric tons of carbon dioxide equivalent.

Source: Modeling conducted by Ascent Environmental in 2019

Mitigation Measure 3.7-1b: Purchase Carbon Offset Credits

The net increase in GHG emissions from Project implementation is the amount of annual GHG emissions that will need to be offset through the purchase of carbon credits. The Project Applicant shall meet the requirement set forth in PRC Section 21183(c) to demonstrate that implementing the Project would result in no net additional GHG emissions through the purchase of voluntary carbon offset credits sufficient to offset all projected additional GHG emissions. A copy of the Project Applicant commitment letter is provided in Appendix C. As shown in Table 3.7-7, above, the Project shall be required to purchase 18,651 MTCO₂e/year of credits.

Such offsets shall meet the requirements of State CEQA Guidelines Section 15126.4(C)(3) and meet the following criteria, consistent with the standards set forth in Health and Safety Code Section 38562, subdivisions (d)(1) and (d)(2):

- ▶ **Real**—They represent reductions actually achieved (not based on maximum permit levels).
- ▶ **Additional/surplus**—They are not already planned or required by regulation or policy (i.e., not double-counted).
- ▶ **Quantifiable**—They are readily accounted for through process information and other reliable data.
- ▶ **Enforceable**—They are acquired through legally binding commitments/agreements.
- ▶ **Verifiable**—They are verified through the accurate means by a reliable third party.
- ▶ **Permanent**—They will remain as GHG reductions in perpetuity.

Such credits shall be based on protocols that are consistent with the criteria set forth in subdivision (a) of Section 95972 of Title 17 of the California Code of Regulations and shall not allow the use of offset projects originating outside of California, except to the extent that the quality of the offsets, and their sufficiency under the standards set forth herein, can be verified by Sacramento County and/or SMAQMD. Such credits must be purchased through one of the following: (i) a CARB-approved registry, such as the Climate Action Reserve, the American Carbon Registry, or the Verified Carbon Standard; (ii) any registry approved by CARB to act as a registry under the California cap-and-trade program; or (iii) the California Air Pollution Control Officers Association GHG Rx and the SMAQMD.

CNU shall enter into one or more contracts to purchase carbon credits, and the contract(s), together with any previous contracts, shall be evidence for the purchase of carbon credits in an amount sufficient to offset the net increase in GHG emissions attributable to each building constructed on the Project site over the analysis horizon of 30 years. Prior to issuance of plan approval or building permit by the California Office of Statewide Health Planning and Development Facilities Development Division, the Project Applicant shall submit documentation of compliance with this measure to the City Development Services Department to verify compliance with this measure. Documentation of compliance with this measure shall be provided to the City Development Services Department prior to issuance of building permits by the City for other buildings not under the jurisdiction of the California Office of Statewide Health Planning and Development Facilities Development Division. Carbon offset credits required for each phase of the Project must be purchased before issuance of any Temporary Certificate of Occupancy for any building in that phase.

Significance after Mitigation

Less than significant.

Impact 3.7-2: Conflict with an Applicable Plan, Policy, or Regulation of an Agency Adopted for the Purpose of Reducing Emissions of GHGs

The Project was evaluated, qualitatively, for consistency with applicable local and State plans that were developed with the intent of reducing GHG emissions. The Project would be required to achieve no net increase in GHG emissions above existing conditions through a combination of on-site GHG reduction measures and purchasing carbon offset credits as stated in the AB 900 certification for the Project. Implementation of Mitigation Measures 3.7-2a and 3.7-2b would ensure that the Project reduces GHG emissions on-site, partly by implementing GHG reduction measures from the City's 2019 CAP, and that all remaining GHG emissions would be offset through the purchase of carbon credits. The Project would result in no net additional GHG emissions and thus would not conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing GHG emissions. This impact would be **less than significant**.

The Project was evaluated, qualitatively, for consistency with applicable local and State plans that were developed with the intent of reducing GHG emissions. Each applicable plan is discussed below.

Consistency with the 2017 Scoping Plan

The 2017 Scoping Plan lays out the framework for achieving the 2030 Statewide GHG reduction target of 40 percent below 1990 levels and progress toward additional reductions. Appendix B of the 2017 Scoping Plan includes detailed GHG reduction measures and local actions that land use development projects can implement to support the Statewide goal. For CEQA analyses, the 2017 Scoping Plan states that projects should implement feasible mitigation, preferably measures that can be implemented on-site. Mitigation Measure 3.7-1a includes GHG-reducing actions that would be consistent with the measures listed in Appendix B of the 2017 Scoping Plan, including the installation of EV chargers and the development of a TDM Plan that seeks to reduce VMT. Electricity would be provided by a combination of installing on-site solar photovoltaics and purchasing 100-percent carbon-free electricity through SMUD's Greenergy program. These actions are consistent with the local measures of Appendix B of the 2017 Scoping Plan. Because the Project would result in no net additional GHG emissions, as detailed in Impact 3.7-1, above, the Project would not conflict with the State's ability to meet the 2030 GHG reduction target. Mitigation Measure 3.7-1a would require the implementation of actions that would be consistent with Appendix B of the 2017 Scoping Plan. For these reasons, the Project would not conflict with the 2017 Scoping Plan.

Consistency with GHG Policies in the City of Elk Grove General Plan and 2019 CAP

The City General Plan includes a goal that aims to reduce GHG emissions in alignment with local, State, and other goals. As demonstrated above, the Project would be consistent with the 2017 Scoping Plan, the State's framework to meet the 2030 GHG reduction target. The General Plan also includes Policy NR-6-7, which encourages the use of on-site solar. The Project would be consistent with the policy through the installation of approximately 192,600 square feet of solar photovoltaics, which would generate approximately 5,443 megawatt-hours of electricity per year, as described in Mitigation Measure 3.7-1a. Final sizing of solar photovoltaics may be refined in the later phases based on improvements in technology.

The City's 2019 CAP includes strategies to address GHG emissions organized into three categories: Innovative and Efficient Built Environment, Resource Conservation, and Transportation Alternative and Congestion Management. The Project would be consistent with Reduction Measures BE-7 by installing on-site solar, BE-8 by purchasing remaining electricity consumption from SMUD's Greenergy program, and BE-9 by planting a net increase in trees at the Project site. The Project would also be consistent with TACM-3 through the development of a TDM Plan (Mitigation Measure 3.14-1) and TACM-9 by installing EV chargers (Mitigation Measure 3.7-1a). The Project would ultimately not conflict with the CAP's ability to meet its 2030 reduction target because it would result in no net additional GHG emissions.

Consistency with the 2020 SACOG MTP/SCS

The Project area was identified in SACOG's 2016 MTP/SCS as an Established Community type. In the Established Community, the MTP/SCS forecasts 1,800 new housing units and 8,135 new employees. Within the Established Community, it also forecasts a range of residential and employment uses, including commercial, office, industrial, and public development. Hospitals and medical centers are generally considered public and office uses in SACOG's forecast; therefore, the Project is consistent with the assumptions for this community type in the MTP/SCS. Additionally, although this Project was not yet proposed when the 2016 MTP/SCS was written, the MTP/SCS assumed a new hospital and an increase in medical employment overall in Elk Grove because of the size of the City and the population growth expected. SACOG's recently adopted 2020 MTP/SCS also includes the Project area in the Established Community type. The 2020 MTP/SCS forecasts about 6,290 new housing units and 8,500 new employees. Further, because the Project would result in no net GHG emissions, it would not conflict with the 2020 MTP/SCS target of achieving a 19-percent reduction in per capita GHG emissions below 2005 levels by 2035. The Project would be consistent with the 2020 MTP/SCS.

Summary

Implementation of Mitigation Measures 3.7-2a and 3.7-2b would ensure that the Project reduces GHG emissions on-site, partly by implementing GHG reduction measures from the City's 2019 CAP, and that all remaining GHG emissions would be offset through the purchase of carbon credits. The Project would result in no net additional GHG emissions and thus would not conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing GHG emissions. This impact would be **less than significant**.

Mitigation Measures

Mitigation Measure 3.7-2a: Implement Mitigation Measure 3.7-1a

Mitigation Measure 3.7-2b: Implement Mitigation Measure 3.7-1b

Significance after Mitigation

Less than significant.

3.8 HAZARDS AND HAZARDOUS MATERIALS

This section describes the potential for existing hazards on the Project site and provides a qualitative evaluation of the Project's potential to create a significant hazard for the public or the environment, conflict with airspace or adopted emergency response plans, or expose people to wildland fires. The analysis includes a description of the existing environmental conditions, the methods used for assessment, and the potential direct and indirect impacts of Project implementation.

For the purpose of this document, the term "hazardous material" is used in reference to any material or waste with physical, chemical, or other characteristics that could pose a risk to human health or safety, or could result in degradation of the environment if released. Although chemicals are the most recognized type of hazardous materials, radioactive and biohazardous materials are included in the following discussion. Radioactive materials contain atoms with unstable nuclei that spontaneously emit ionizing radiation to increase their stability. Biohazardous materials contain infectious agents (e.g., microorganisms, bacteria, molds, parasites, viruses) that normally cause, or significantly contribute to, increased human mortality. Medical waste can also be considered a hazardous waste and is generated or produced as a result of the diagnosis, treatment, or immunization of human beings or animals and the production or testing of biological materials. Cultures, blood and blood products, tissues, and body parts are all considered medical waste.

Comments received in response to the NOP generally requested details about planned operation and compliance with existing regulations. Specifically, comments requested detailed information regarding what potentially hazardous materials would be used on the Project site, where these substances would be stored, and how they would be transported. Commenters also requested that the EIR discuss proposed helicopter operations, relevant Federal Aviation Administration (FAA) standards, and potential compatibility with military airspace. Comments requested an evaluation of wildfire hazards caused by Project demolition, construction, or operations.

Concerns were also raised about compliance with various regulations, including California's Hazardous Waste Control Law; the California Accidental Release Prevention Program; the Comprehensive Environmental Response, Compensation, and Liability Act; the Hazardous Materials Transportation Act; Government Code Section 65962.5; Title 23 of the California Code of Regulations (CCR); and the California Health and Safety Code (HSC). Comments requested evaluation of the Project against the thresholds suggested in Appendix G of the State CEQA Guidelines, and requested identification of applicable hazardous materials area plans, the location of the Operational Area Emergency Operations Center in the City, and established evacuation routes. Where the requested information is relevant to the analysis of the Project pursuant to CEQA, these issues are discussed below.

3.8.1 Regulatory Setting

In California, the U.S. Environmental Protection Agency (EPA) has granted most enforcement authority over federal hazardous materials regulations to the California Environmental Protection Agency (CalEPA). In turn, the Hazardous Materials Division of the Sacramento County Environmental Management Department (EMD) has been granted authority by the State to enforce most regulations pertaining to hazardous materials in the City.

FEDERAL

Federal Aviation Administration

Any temporary or permanent structure, including all appurtenances, that exceeds an overall height of 200 feet above ground level or exceeds any obstruction standard contained in 14 Code of Federal Regulations (CFR) Part 77 should be marked and/or lighted. Structures that may present obstructions affecting navigable air space are required to have markings and lighting as provided under FAA's Advisory Circular 70/7460-1L Change 2 (Obstruction Marking and Lighting). FAA has determined that the Project would not be a hazard to air navigation provided that the hospital building is marked or lighted in accordance with Chapters 4 (Light Guideline), 8 (Dual Lighting with Red/Medium-

Intensity Flashing White Light Systems), and 12 (Marking and Lighting Equipment and Information) of the advisory circular (Sanders 2020).

The design and operation of hospital heliports are regulated under FAA's Advisory Circular 150/5390-2C (Heliport Design). This advisory circular includes details on the design of touchdown and liftoff areas, final approach and takeoff areas, markings, lighting, and safety considerations.

The reader is referred to Section 3.1, "Aesthetics," and Section 3.14, "Transportation," for further discussion of FAA lighting standards.

Hazardous Materials Management

EPA has primary responsibility for enforcing and implementing federal laws and regulations pertaining to hazardous materials. Applicable regulations are contained mainly in Titles 29, 40, and 49 of the CFR. Hazardous materials, as defined in the CFR, are listed in 49 CFR 172.101. Management of hazardous materials is governed by the following laws:

- ▶ **Resource Conservation and Recovery Act of 1976:** The Resource Conservation and Recovery Act of 1976 (RCRA) (42 U.S. Code [U.S.C.] 6901 et seq.) established a federal regulatory program for the generation, transport, and disposal of hazardous substances. Under RCRA, EPA regulates the generation, transportation, treatment, storage, and disposal of hazardous substances. 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.
- ▶ **Comprehensive Environmental Response, Compensation, and Liability Act of 1980:** Also called the Superfund Act, the Comprehensive Environmental Response, Compensation, and Liability Act (42 U.S.C. 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. EPA is responsible for compiling the National Priorities List 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.
- ▶ **Superfund Amendments and Reauthorization Act of 1986:** Also called SARA Title III or the Emergency Planning and Community Right-to-Know Act of 1986, the Superfund Amendments and Reauthorization Act (Public Law 99-499; U.S.C. Title 42, Chapter 116) imposes hazardous materials planning requirements to help protect local communities in the event of accidental release.
- ▶ **Clean Air Act:** Regulations under the Clean Air Act (42 U.S.C. 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 regulated substances to develop a risk management plan that includes hazard assessments and response programs to prevent accidental releases of listed chemicals.
- ▶ **Spill Prevention, Control, and Countermeasure Rule:** The Spill Prevention, Control, and Countermeasure (SPCC) rule includes requirements for oil spill prevention, preparedness, and response to prevent oil discharges to navigable waters and adjoining shorelines. The rule requires specific facilities to prepare, amend, and implement SPCC Plans. The SPCC rule is part of the Oil Pollution Prevention regulation, which also includes the Facility Response Plan rule.

Transport of Hazardous Materials

The U.S. Department of Transportation (DOT) regulates transport of hazardous materials between states and is responsible for protecting the public from dangers associated with such transport. The basic statute regulating transport of hazardous materials in the United States, addressed in 49 USC 5101 et seq. (formerly the Hazardous Materials Transportation Act, 49 USC 1801 et seq.), regulates intrastate and interstate transport by rail car, aircraft, motor vehicle, and vessel and includes requirements related to the appropriate packaging and labeling of the hazardous material for transit. There are registration requirements for individuals that offer and accept hazardous wastes, and hazardous materials must be properly classed, described, packaged, marked, and labeled. Hazardous

materials transport regulations are enforced by the Federal Highway Administration, the U.S. Coast Guard, the Federal Railroad Administration, and FAA.

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.

Radiation Control Law

Pursuant to the federal Atomic Energy Act requiring states to assume responsibility for the use, transport, and disposal of low level radioactive material and for the protection of the public from radiation hazards, the Radiological Health Branch (RHB) of the California Department of Public Health (CDPH) administers the Radiation Control Law, which governs the use, transportation, and disposal of radioactive material and radiation producing equipment. Radioactive material regulations require registration of sources of ionizing radiation, licensing of radioactive material, and protection against radiation exposures. RHB also regulates the transport of radioactive materials and disposal of radioactive wastes. The regulations specify appropriate use and disposal methods for radioactive substances, as well as worker safety precautions and health monitoring programs. The Radiation Control Law applies to electronic product radiation generated by medical equipment such as diagnostic x-ray or ultrasound imaging devices, microwave or ultrasound diathermy devices, microwave blood warmers or sterilizers, laser coagulators, ultrasound phacoemulsifiers, and x-ray or electron accelerators.

Biosafety Standards

A hazardous biologic material is any potentially harmful biologic material (including infectious agents, oncogenic viruses, and recombinant DNA) or any material contaminated with a potentially harmful biologic material. This includes medical waste generated at hospitals and other medical facilities. The National Institutes of Health and the Centers for Disease Control and Prevention operate under the U.S. Department of Health and Human Services and establish standards for working with biohazardous materials.

STATE

The Hazardous Waste Control Act

The Hazardous Waste Control Act (HSC Section 25100 et seq.) is the seminal hazardous waste control law in California. It establishes standards for regulating the generation, handling, processing, storage, transportation, and disposal of hazardous wastes. The hazardous waste control program is administered by California Department of Toxic Substances Control (DTSC) and local Certified Unified Program Agencies (CUPAs). Within CalEPA, DTSC is primarily responsible for regulating the generation, transport, and disposal of hazardous substances under the authority of the Hazardous Waste Control Act; enforcement is delegated to local jurisdictions. Regulations implementing the Hazardous Waste Control Act 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 the 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.

Unified Program

CalEPA 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 CUPA, which is responsible for consolidating the administration of the six program elements within its jurisdiction. Sacramento County EMD is the CUPA for Sacramento County and its incorporated cities, including Elk Grove.

Emergency Response to Hazardous Materials Incidents

California has developed an emergency response plan to coordinate emergency services provided by federal, State, and local governments and private agencies. Response to hazardous material incidents is one part of this plan. The plan is managed by the California Emergency Management Agency, which coordinates the responses of other agencies, including CalEPA, the California Highway Patrol, the California Department of Fish and Wildlife, and regional water quality control boards (RWQCBs).

California Government 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 law). The Cortese List is a planning document used by State and local agencies to comply with CEQA requirements in providing information about the location of hazardous materials release sites. The list, or a site's presence on the list, has bearing on the local permitting process. DTSC is responsible for a portion of the information contained in the Cortese List. Other State and local government agencies in California, such as the State Water Resources Control Board (SWRCB), also must provide additional release information.

Government Code Section 65962.5 requires CalEPA to develop an updated Cortese List at least annually. However, because this statute was enacted more than 20 years ago, some of the provisions refer to agency activities that are no longer being implemented, and in some cases, the information to be included in the Cortese List does not exist. Further, although Government Code Section 65962.5 makes reference to the preparation of a "list," many changes have occurred related to web-based information access since 1992, and this information is now largely available on the internet sites of the responsible organizations. A centralized list is no longer compiled.

California Hazardous Materials Release Response Plans and Inventory Law

The California Hazardous Materials Release Response Plans and Inventory Law requires preparation of hazardous materials business plans and disclosure of hazardous materials inventories. Such plans must include an inventory of hazardous materials handled, facility floor plans showing where hazardous materials are stored, and an emergency response plan, and they must establish emergency response procedures that include employee training (HSC, Division 20, Chapter 6.95, Article 1). The business plan program is administered by the California Emergency Management Agency.

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.

Porter-Cologne Water Quality Control Act

Through the Porter-Cologne Water Quality Control Act and the National Pollutant Discharge Elimination System (NPDES) program, RWQCBs have the authority to require proper management of hazardous materials during project construction. For a detailed description of the Porter-Cologne Water Quality Control Act, the NPDES program, and the role of the Central Valley RWQCB, see Section 3.9, "Hydrology and Water Quality."

SWRCB adopted the Statewide NPDES General Permit in August 1999. The State requires that projects disturbing more than 1 acre of land during construction file a notice of intent with the RWQCB to be covered under this permit. Construction activities subject to the general permit include clearing, grading, stockpiling, and excavation. Dischargers are required to eliminate or reduce nonstormwater discharges to storm sewer systems and other waters. A stormwater pollution prevention plan must be developed and implemented for each site covered by the permit. The plan must identify best management practices (BMPs) designed to prevent construction pollutants from contacting stormwater and keep products of erosion from moving off-site into receiving waters throughout the construction and life of the project; the BMPs must address source control and, if necessary, pollutant control.

California Occupational Safety and Health Administration Worker Safety Requirements

The California Occupational Safety and Health Administration (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.

Medical Waste Management Act

The Medical Waste Management Act (HSC Sections 117600–118360) regulates the generation, handling, storage, treatment, and disposal of medical waste. It requires that all hospitals develop and implement a medical waste management plan. The purpose of the plan is to successfully guide the proper handling of medical waste throughout the facility, including storage, transport, and disposal. The law imposes cradle-to-grave tracking and a calibration and monitoring system for on-site treatment. Facilities that treat medical waste must obtain permits to do so and are subject to annual audits.

California Department of Public Health Services Licensing

The Centralized Applications Branch of CDPH provides standardization and consistency of State licensing and federal certification through the application process. Health care facilities and providers submit an application, an analyst validates that all required forms and supporting documents are received, and fees are paid; then the Central Applications Branch makes a determination to approve or deny the application based on the information contained in the application and its compliance with State and federal requirements. Among these requirements, the applicant is required to prepare facility-specific emergency evacuation and shelter in place procedures.

Within CDPH, RHB administers federal and State radiation safety laws that govern the storage, use, and transportation of radioactive materials and the disposal of radioactive waste, including the Radiation Control Law, Radiologic Technology Act, and Nuclear Medicine Technology Certification, through the implementing regulations contained in CCR Title 17. To obtain a California radioactive material license, an applicant must complete a detailed application that requires a description of plans for decontamination and decommissioning, including identification of transfer or disposal procedures taken before decommissioning and any necessary surveys. To maintain a radioactive materials license, an institution must meet training and radiation safety requirements and be subject to routine inspections.

California Fire Code

The California Fire Code (CFC) is Chapter 9 of CCR Title 24. It is the primary means for authorizing and enforcing procedures and mechanisms to ensure the safe handling and storage of any substance that may pose a threat to public health and safety. The CFC regulates the use, handling, and storage requirements for hazardous materials at fixed facilities. The CFC and the California Building Code use a hazard classification system to determine what protective measures are required to protect life and provide fire safety. These measures may include applying construction standards, requiring separation between structures and property lines, and using specialized equipment.

To ensure that these safety measures are met, the CFC employs a permit system based on hazard classification. The CFC is updated every 3 years.

California State Aeronautics Act

At the State level, the California Department of Transportation's Division of Aeronautics administers FAA regulations (Stats. 1951, Ch. 764; Public Utilities Code Section 21001 et seq.). The division issues permits for hospital heliports and public-use airports. In addition, the Division of Aeronautics administers noise regulation and land use planning laws, which regulate the operational activities and provides for the integration of aviation planning on a regional basis. CNU would submit a permit application to Caltrans' Division of Aeronautics to comply with FAA regulations, although the proposed helistop could qualify as an Emergency Medical Services Landing Site which would be exempt from State permitting requirements.

LOCAL

Sacramento County Environmental Management Department

Sacramento County EMD is responsible for promoting a safe and healthy environment in Sacramento County and enforcing hazardous waste laws and regulations at a local level. As the local CUPA, Sacramento County EMD oversees the proper use, storage, and cleanup of hazardous materials; monitoring wells; removal of leaky underground storage tanks; and permits for the collection, transport, use, or disposal of refuse. Sacramento County EMD's Hazardous Materials Business Plan, which is administered throughout Sacramento County and its incorporated cities, is an element of the County's CUPA program. Businesses are required to complete a Hazardous Materials Business Plan for safe storage and use of chemicals above reportable quantities (55 gallons for liquids, 500 pounds for solids and 200 cubic feet for compressed gases).

To protect public health and the environment from potential exposure to infectious disease-causing agents, Sacramento County EMD also permits and inspects businesses generating medical waste. The Medical Waste Program ensures health and safety protection for members of the public and health care facility personnel by minimizing or eliminating exposure to biohazardous wastes containing pathogenic organisms and sharps. This is accomplished through the implementation and enforcement of medical waste regulations as they apply to the handling, storage, treatment, and disposal of biohazardous waste in Sacramento County. Sacramento County EMD is responsible for implementing the Medical Waste Management Act.

Sacramento County Evacuation Plan

The Sacramento County Evacuation Plan is developed as an annex to the Sacramento County 2008 All-Hazards Emergency Operations Plan. The purpose of this evacuation plan is to document the agreed-upon strategy for the county's response to emergencies that involve the evacuation of persons from an affected area to a safe area. This involves coordination and support for the safe and effective evacuation of the general population and for those who need additional support to evacuate. Focus areas in this evacuation plan include public alert and warning, transportation, and care and shelter.

Primary evacuation routes are established for each of the seven Sacramento County sheriff districts. These include major interstates, highways, and prime arterials in Sacramento County. Local jurisdictions will work with the county, and especially the Operations Section, Law Enforcement Branch, and the Evacuation Movement Unit, to identify and update evacuation routes and evacuation transfer points. The primary evacuation routes usually will be major interstates and other highways, and major roadways within and out of the county, unless otherwise determined by the Sacramento County Department of Transportation. During an evacuation, Sacramento County Department of Transportation traffic engineers would be able to quickly calculate traffic flow capacity and decide which of the available traffic routes should be used to move people in the correct directions. In many cases, the traffic engineers will need to reevaluate and recalculate best traffic routes based on situational data. I-5, which is located immediately west of the Project site, is identified as a key evacuation route.

Sacramento County Local Hazard Mitigation Plan

The City participates in the multijurisdictional Sacramento County Local Hazard Mitigation Plan (LHMP), last updated in 2017. The purpose of the plan is to guide hazard mitigation planning to better protect the people and property of the County from the effects of hazard events, such as flood, drought, earthquake, and severe weather. This plan also ensures that Sacramento County and participating jurisdictions, including the City, continue to be eligible for federal disaster assistance, including the Federal Emergency Management Agency's Hazard Mitigation Grant Program, Pre-Disaster Mitigation Program, and Flood Mitigation Assistance Program. The LHMP provides policies and programs for participating jurisdictions to implement that reduce the risk of hazards and protect public health, safety, and welfare.

City of Elk Grove Emergency Operations Plan

The City's Emergency Operations Plan (EOP) provides a strategy for the City to coordinate and conduct emergency response. The EOP establishes an Emergency Management Organization and assigns functions and tasks consistent with California's Standardized Emergency Management System and the National Incident Management System. The intent of the EOP is to provide direction on how to respond to an emergency from the initial onset, through an extended response, and into the recovery process. The EOP integrates and coordinates the planning efforts of multiple jurisdictions. This plan was reviewed and approved by representatives from each City department, local special districts with emergency services responsibilities in the City, and the Sacramento County Office of Emergency Services. The content is based on guidance approved and provided by the State of California, Federal Emergency Management Agency, and federal Department of Homeland Security.

Franklin Field Comprehensive Land Use Plan

The Sacramento Area Council of Governments Board of Directors serves as the Airport Land Use Commission for airports in Sacramento County, including Franklin Field. One of the Airport Land Use Commission's primary functions is to develop and adopt a plan that identifies zones for safety, noise contours, and height restrictions, along with associated compatible land uses, for each public use airport. The Franklin Field Comprehensive Land Use Plan was prepared in 1988 and last amended in 1992. The Project site is not within the safety zones mapped for Franklin Field (SACOG n.d.).

City of Elk Grove General Plan

The following City of Elk Grove General Plan policies are applicable to this analysis (City of Elk Grove 2019):

- ▶ **Policy EM-1-1:** Seek to maintain acceptable levels of risk of injury, death, and property damage resulting from reasonably foreseeable safety hazards.
- ▶ **Policy ER-1-1:** In considering the potential impact of hazardous facilities on the public and/or adjacent or nearby properties, the City will consider the hazards posed by reasonably foreseeable events. Evaluation of such hazards will address the potential for events at facilities to create hazardous physical effects at off-site locations that could result in death, significant injury, or significant property damage. The potential hazardous physical effects of an event need not be considered if the occurrence of an event is not reasonably foreseeable as defined in Policy ER-1-2. Hazardous physical effects shall be determined in accordance with Policy ER-1-3.
- ▶ **Policy ER-1-2:** For the purpose of implementing Policy ER-1-1, the City considers an event to be "reasonably foreseeable" when the probability of the event occurring is as indicated in Table 8-1.

Table 8-1 Acceptable Probability of Reasonably Foreseeable Risks to Individuals by Land Use

Land Use	Risk of Death over 265 Days of Exposure
Agriculture, Light Industrial and Industrial Uses involving continuous access and the presence of limited number of people but easy evacuation, e.g., open space, warehouses, manufacturing plants	Between 100 in one million and 10 in one million (10^{-4} to 10^{-5})
Commercial Uses involving continuous access but easy evacuation, e.g., commercial uses, offices	Between 10 in one million and 1 in one million (10^{-5} to 10^{-6})

Land Use	Risk of Death over 265 Days of Exposure
Residential All other land uses without restriction including institutional uses, residential areas, etc.	1 in one million and less (10^{-6})

- **Policy ER-1-3:** For the purpose of implementing Policy ER-1-1, use the Threshold of Exposure standards shown in Table 8-2 to determine the potential “hazardous physical effect” from either:
- Placing a use near an existing hazardous facility which could expose the new use to hazardous physical effects, or
 - Siting a hazardous facility that could expose other nearby uses to hazardous physical effects.

Reasonably foreseeable level of risk standards may be considered by the City when supported by substantial evidence.

Table 8-2 Policy Threshold of Exposure Criteria for Agricultural, Residential, and Nonresidential Land Uses

Land Use	Maximum Policy Threshold of Expose			
	Overpressure	Airborne Toxic Substances	Radiant Heat	Shrapnel
Agriculture	3.4 psig	Dose = ERPG-2(b) ppm for 60 min Exposure time = 60 min For example: chlorine ERPG-2 = 3 ppm Dose = 3 ppm x 60 min = 180 ppm-min Target concentration = dose/exposure time Target concentration = (180 ppm-min) / 60 min Target concentration = 3 ppm chlorine	Radiant dose = 200 kJ/m ² Exposure time = 30 sec Target radiant energy = radiant dose/exposure time Target radiant energy = (200 kJ/m ²) / 30 sec Target radiant energy = 6.67 kW/m ²	All uses will be located such that the possibility of injury to an unprotected person due to shrapnel released by a reasonably foreseeable event(d) is less than 1/10-6 (1/1,000,000)
Residential	1.0 psig			
Office/ Commercial	1.0 psig			
Light Industrial	1.25 psig	Dose = ERPG-2 ppm for 60 min Exposure time = 30 min For example: chlorine ERPG-2 = 3 ppm Dose = 3 ppm x 60 min = 180 ppm-min Target concentration = dose/exposure time Target concentration = (180 ppm-min) / 30 min Target concentration = 6 ppm chlorine	Radiant dose = 200 kJ/m ² Exposure time = 15 sec Target radiant energy = radiant dose/exposure time Target radiant energy = (200 kJ/m ²) / 15 sec Target radiant energy = 13.34 kW/m ²	
Industrial	3.4 psig	Dose = ERPG-2 ppm for 60 min Exposure time = 15 min For example: chlorine ERPG-2 = 3 ppm Dose = 3 ppm x 60 min = 180 ppm-min Target concentration = dose/exposure time Target concentration = (180 ppm-min) / 15 min Target concentration = 12 ppm chlorine		

- **Policy ER-1-4:** Work to identify and eliminate hazardous waste releases from both private companies and public agencies.
- **Policy ER-1-5:** Storage of hazardous materials and waste will be strictly regulated, consistent with State and federal law.
- **Policy ER-1-7:** To the extent feasible, uses requiring substantial transport of hazardous materials should be located such that traffic is directed away from the City’s residential and commercial areas.

Elk Grove Municipal Code Section 23.60.030 (Hazardous Materials)

The City has developed the following standards to ensure that the use, handling, storage, and transport of hazardous materials comply with all applicable State laws (Section 65850.2 of the Government Code and HSC Section 25505 et seq.) and that appropriate information is reported to the Fire Department as the regulatory authority:

- A. Reporting Requirements. All businesses required by State law (HSC Section 6.95) to prepare hazardous materials release response plans and hazardous materials inventory statements shall, upon request, submit copies of these plans, including any revisions, to the Fire Department.
- B. Underground Storage. Underground storage of hazardous materials shall comply with all applicable requirements of state law (HSC Section 6.7 and Articles 679 and 680 of the California Fire Code, or as subsequently amended). Businesses that use underground storage tanks shall comply with the following procedures:
 - 1. Notify the Fire Department of any unauthorized release of hazardous materials prescribed by City, county, state and federal regulations;
 - 2. Notify the Fire Department and the Sacramento County Health Department of any proposed abandoning, closing or ceasing operation of an underground storage tank and actions to be taken to dispose of any hazardous materials; and
 - 3. Submit copies of the closure plan to the Fire Department.

3.8.2 Environmental Setting

The Project site was developed for commercial use beginning in the late 1990s. In addition to the established school of medicine, existing uses on the Project site include office buildings, a brewery, an animal hospital, eating establishments, and other commercial and retail uses.

Based on review of historical photographs, on-site structures were constructed between approximately 1999 and 2009. Because of the relatively recent development of the Project area, there is a low potential for presence of hazardous materials in the built environment (e.g., lead in paints and asbestos insulation) or undocumented contamination from legacy infrastructure (e.g., older underground storage tanks) or past use (e.g., aerially deposited lead along highways associated with use of leaded gasoline).

DOCUMENTED SITES OF CONTAMINATION

The Project site is not on any of the lists of hazardous waste and substances site maintained by CalEPA pursuant to Government Code Section 65962.5. It is not currently on the Cortese List of hazardous waste and substance sites (DTSC 2020) or SWRCB's list of open, active leaking underground storage tank sites (SWRCB 2020). The Project site also is not on or adjacent to a solid waste disposal site with waste constituents above hazardous waste levels outside of the waste management unit (SWRCB n.d.) or a site that is the location of an active Cease and Desist or Cleanup and Abatement Order identified by the RWQCB (CalEPA 2020).

The Project site is not included on, or within 1 mile of, a property included on the Superfund's National Priority List (EPA 2020). There are no sites of known contamination on or near the Project site or off-site improvements identified by either SWRCB or DTSC in their respective databases.

USE OF HAZARDOUS MATERIALS AT THE EXISTING CNU MEDICAL AND PHARMACY COLLEGES

The existing school of medicine and school of pharmacy are not registered with EPA under RCRA (i.e., neither generate a minimum of 100 kilograms of hazardous waste in a month). No laboratories associated with these existing uses regularly use potentially hazardous materials.

TRANSPORT OF HAZARDOUS MATERIALS

Hazardous materials, hazardous wastes, and petroleum products are a subset of the goods routinely shipped along the transportation corridors in the Project area. In California, unless specifically exempted, it is unlawful for any person

to transport hazardous wastes unless the person holds a valid registration issued by DTSC. DTSC maintains a list of active registered hazardous waste transporters throughout California, and CDPH regulates the haulers of hazardous waste.

Hazardous materials are transported on area roadways, including I-5 and Elk Grove Boulevard, continually. In addition, I-5 is the only transportation route approved for the transportation of explosives, poisonous inhalation hazards, and radioactive materials in the City. Smaller quantities of hazardous materials, such as medical supplies, pool chemicals, cleansing agents, paint, and household chemicals, may be transported on all roadways.

SCHOOLS

Children are particularly susceptible to long-term effects from emissions of hazardous materials. Therefore, locations where children spend extended periods, such as schools, are sensitive to hazardous air emissions and accidental release associated with the handling of extremely hazardous materials, substances, or wastes. This risk is considered substantial where the potential release is within 0.25 mile of the school. No existing or proposed schools are within 0.25 mile of the Project site. The nearest school is Elliott Ranch Elementary School, located approximately 0.60 mile southeast of the site.

AIRPORTS AND AIRSTRIPS

There are no active public airports or private airstrips within 2 miles of the Project site. Although there is a record of a private airport (Flying B Ranch Airport) nearly 5 miles southeast of the Project site, it no longer appears to be in operation. The closest public airport is Franklin Field, located at 12480 Bruceville Road, approximately 7 miles southeast of the Project site. Franklin Field is a public use airport owned and operated by Sacramento County. It has two paved runways, one 204 feet long and the other 100 feet long. The facility does not have an air traffic control tower or personnel, and it serves the general aviation community exclusively. Approximately 36,000 operations take place each year at Franklin Field, much of which are flight training activities.

WILDLAND FIRE HAZARDS

Although all of California is subject to some degree of wildfire hazard, specific features make certain areas more hazardous. The California Department of Forestry and Fire Protection (CAL FIRE) is required by law to map areas of significant fire hazards based on fuels, terrain, weather, and other relevant factors (Public Resources Code Sections 4201–4204 and Government Code Sections 51175–51189). Factors that increase an area's susceptibility to fire hazards include slope, vegetation type and condition, and atmospheric conditions. When development spreads into less densely populated, often hilly areas, it increases the number of people living in areas that are prone to wildfire.

The Project site is within a local responsibility area (i.e., an area under the jurisdiction of a local entity) that is mapped by CAL FIRE as a non-very high fire hazard severity zone (CAL FIRE 2008). The Cosumnes Community Services District (CCSD) Fire Department is responsible for providing fire protection services to the Project site.

3.8.3 Environmental Impacts and Mitigation Measures

METHODOLOGY

The following evaluation is based on a review of documents and publicly available information about hazardous and potentially hazardous conditions in the Project area to determine the potential for Project implementation to result in an increased health or safety hazard to people or the environment. These resources include City and county planning documents and SWRCB and DTSC hazardous materials database information. Physical surveys of the Project site were not conducted.

To the extent that they are in use, it is assumed that the existing school of medicine stores radioactive and medical wastes in compliance with current regulations.

THRESHOLDS OF SIGNIFICANCE

An impact related to hazards or hazardous materials would be significant if implementation of the Project would:

- ▶ create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials;
- ▶ create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment;
- ▶ emit hazardous emissions or involve the handling of hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school;
- ▶ be located on a site 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, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, result in a safety hazard or excessive noise 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, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires.

ISSUES NOT DISCUSSED FURTHER

Emission or Handling of Hazardous Materials, Substances, or Wastes within 0.25 Mile of an Existing or Proposed School

There are no existing or proposed schools within 0.25 mile of the Project site. The Sacramento Municipal Utility District's (SMUD's) existing substation near Franklin Boulevard and Elk Grove Boulevard where off-site upgrades would be required is also more than 0.25 mile from existing and proposed school locations. Upgrades to SMUD's existing 12-kilovolt distribution lines along Elk Grove Boulevard may occur within 0.25 mile of Stone Lake Elementary School (9673 Lakepoint Drive). However, the potential for hazardous materials to be handled during construction of these upgrades would be limited, and all work would be conducted by SMUD in accordance with established regulations. There would be no impact on existing or proposed schools associated with the handling or emission of hazardous materials during construction or operation of the Project. Therefore, this impact is not discussed further.

Hazards Related to Proximity to Existing Sites of Known Contamination

Neither SWRCB nor DTSC identified sites of known contamination on or near the Project site or the locations of the off-site improvements. The Project site is not included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5. Therefore, there is no potential to create a significant hazard to the public or the environment, and this impact is not discussed further.

Safety Hazard or Excessive Noise Related to Proximity to an Airport

The Project site and locations of off-site improvements are not located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport. There would be no impact associated with exposing future employees to potential safety hazards or excessive noise generated by established aviation uses in the area. The proposed heliport would operate in accordance with applicable FAA regulations specific to hospital heliports. For additional discussion of the potential noise generated by helicopter operations associated

with operation of the Project, refer to Section 3.11, "Noise and Vibration." This impact is not discussed further in this section.

Loss, Injury, or Death from Wildland Fire

The Project site is within a Local Response Area where fire protection is provided by the nearby CCSD. In the event of a nearby grass fire or a fire within Stone Lakes National Wildlife Refuge, CCSD would respond (see Section 3.13, "Public Services," for further discussion of the CCSD Fire Department facilities and response times). CAL FIRE has designated the area as a non-very high fire hazard severity zone, which is defined as an area not prone to intense, damaging wildfires. New construction is subject to the CFC, which includes safety measures to minimize the threat of fire. Title 24 of the CCR sets forth the minimum development standards for emergency access, fuel modification, setback, signage, and water supply, which help prevent damage to structures or people by reducing wildfire hazards. Construction and operation of the Project and implementation of the off-site improvements would not increase the potential for wildland fire on or near the Project site, and there would be no impact associated with exposing people or structure to wildland fire. Therefore, this impact is not discussed further.

ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Impact 3.8-1: Create a Hazard through the Routine Transport, Use, or Disposal of Hazardous Materials, Including Reasonably Foreseeable Upset or Accidents during Construction

Project construction would involve the use of materials that may create a hazard if released into the environment. Use, transport, and disposal of materials in compliance with established regulations would effectively address hazards associated with the use of these materials. This impact would be **less than significant**.

Common hazardous materials used in construction include fuels, solvents, caulking, tar, concrete curing compounds, asphalt products, paints, asbestos-containing building materials, architectural coatings, light bulbs, mercury switches, and batteries. Construction-related activities, such as pumping, pouring, emptying, injecting, spilling, and dumping, may also release hazardous materials into the environment. The severity of potential effects varies with the activity conducted and with the concentration and type of hazardous material present. Generally, incidents involving construction-related hazardous materials are small fuel or oil spills that would have a negligible impact on public health. All hazardous materials would be stored, handled, and disposed of according to the manufacturers' recommendations, and spills would be cleaned up in accordance with applicable regulations.

Further, the Project would be required to prepare a spill prevention and treatment plan for rapidly, effectively, and safely cleaning up and disposing of any spills or releases that may occur during construction. As required under State and federal law, notification and evacuation procedures for site workers and local residents in the event of a hazardous materials release during on-site construction would be included as part of the plan. In addition, SWRCB Construction General Permit (2009-0009 DWQ) requires spill prevention and containment plans to avoid spills and releases of hazardous materials and wastes into the environment. Inspections would be conducted to verify consistent implementation of general construction permit conditions and the BMPs intended to avoid and minimize the potential for spills and releases and to ensure a response to them, including their immediate cleanup. BMPs include, for example, the designation of special storage areas and labeling, containment berms, coverage from rain, and concrete washout areas. Compliance with the aforementioned regulations would minimize the potential risk of a spill or accidental release of hazardous materials during construction.

As stated previously, the Project site is not identified as a hazardous materials site on any list maintained by the California Environmental Protection Agency pursuant to Government Code Section 65962.5. Because of the relatively recent ground disturbance and development of the current uses on the site, it is unlikely that undocumented hazards, such as spills of potentially hazardous materials that have not been reported, are present. Nevertheless, the disturbance of undocumented hazardous wastes during grading or excavation activities may result in hazards to the environment and human health. Potential hazards to human health include ignition of flammable liquids or vapors, inhalation of toxic vapors in confined spaces, such as trenches, and skin contact with contaminated soil or water. If

hazardous materials are discovered through the construction process, existing regulations provide prescriptive requirements for ceasing work, notifying appropriate government agencies, and providing remediation if necessary. Federal and State laws require that soils and groundwater having concentrations of contaminants such as lead, gasoline, or industrial solvents that are higher than certain acceptable levels are handled and disposed of as hazardous waste during excavation, transportation, and disposal. Title 22 of the CCR, Sections 66261.20–66261.24, contains technical descriptions of characteristics that would cause soil to be classified as a hazardous waste. Additionally, although many hazardous construction materials remaining after Project construction can likely be reused on other projects, those materials that cannot be (or are not) reused would require disposal. Hazardous waste generated during construction may consist of welding materials, fuel and lubricant containers, paint and solvent containers, and cement products containing strong basic or acidic chemicals.

Trucks transporting hazardous materials use many of the same freeways, arterials, and local streets as other traffic, which creates a risk of accidents and associated release of hazardous materials for other drivers and for people along these routes. Although the transport of hazardous materials may result in accidental spills, leaks, toxic releases, fire, or explosion, the DOT Office of Hazardous Materials Safety prescribes regulations for the safe transportation of hazardous materials, as described in Title 49 of the CFR, that specify packaging and labeling requirements for hazardous materials. The standard accident and hazardous materials recovery training and procedures are enforced by the State and followed by private State-licensed, -certified, and -bonded transportation companies and contractors.

Construction activities associated with the off-site improvements would involve the routine storage, transport, and handling of hazardous materials. These improvements would be subject to the same requirements as those described above for on-site development. SMUD would conduct the electrical upgrades in a manner consistent with federal and State regulations. Mineral oil, used to insulate transformers, would be transported to the substation site in the sealed transformer equipment. Any hazardous waste generated during construction (e.g., diesel fuel, oil, solvents) would be disposed of or recycled off-site in accordance with all applicable laws pertaining to the handling and disposal of hazardous waste.

The use, storage, and transportation of hazardous materials are subject to local, State, and federal regulations, the intent of which is to minimize risks to human health and the environment. General Plan Policies EM-1-1, ER-1-1, ER-1-4, and ER-1-5 support these regulations, and risks to human health and the environment would be minimized through implementation of General Plan policies and applicable regulations. This impact would be **less than significant**.

Mitigation Measures

No mitigation is required in addition to implementation of General Plan policies and applicable regulations

Impact 3.8-2: Create a Hazard through the Routine Transport, Use, or Disposal of Hazardous Materials, Including Reasonably Foreseeable Upset or Accidents during Operation

Operation of the Project would require the routine use of hazardous materials. Federal, State, and local regulations provide protection to the public and the environment from hazardous materials. This impact would be **less than significant**.

Operation of the hospital and associated medical facilities would require the routine use of hazardous materials. These materials generally consist of, but are not limited to, acids, bases, flammable liquids, organic and inorganic reagents, stains and dyes, compressed gases, pharmaceuticals, and radioactive materials. Many of the hospital's diagnostic laboratory procedures would involve the use of small quantities of chemicals. The pathology laboratory and morgue may use aqueous solutions containing formaldehyde as a preservative. Potential health effects associated with exposure to formaldehyde include skin, eye, and respiratory irritation. Formaldehyde is also regulated as a carcinogen, and its use and disposal are strictly controlled. The proposed central plant building would store approximately 90,000 gallons of diesel fuel for four backup generators to be used in emergencies. As described above, Sacramento County EMD's Medical Waste Program ensures health and safety protection for members of the

public and health care facility personnel by minimizing or eliminating exposure to biohazardous wastes containing pathogenic organisms and sharps.

The operation of businesses that use, create, or dispose of hazardous materials is regulated and monitored by federal, State, and local regulations that provide protection to the public and the environment from hazardous materials. CalEPA oversees the regulation and management of hazardous materials on a Statewide level through DTSC. Use of hazardous materials requires permits and monitoring through the local CUPA to avoid hazardous waste release. RCRA, Title 22 of the CCR, and the Hazardous Waste Control Act regulate the generation, transport, treatment, storage, and disposal of hazardous waste. These laws impose regulatory systems for handling hazardous waste in a manner that protects human health and the environment, including requirements for the classification of materials, packaging, and hazard communication.

CNU would prepare a business plan pursuant to the Hazardous Materials Release Response and Inventory Law. The facility would prepare a risk management plan consistent with the California Accidental Release Prevention Program. Plans for materials storage would be consistent with CFC regulations related to hazardous materials management and would be subject to review by Sacramento County EMD. Materials would be handled in accordance with Cal/OSHA regulations. In addition, the storage and transport of hazardous materials would be regulated by General Plan Policies EM-1-1, ER-1-1, ER-1-2, ER-1-5, and ER-1-7. The hospital would also be listed in EPA's database of facilities that generate, store, or transport hazardous waste pursuant to RCRA. Sacramento County EMD would monitor the proper use, storage, and transport of potentially hazardous materials. Materials storage would follow appropriate regulations for labeling and secondary containment. Wastes generated may include ignitable wastes, corrosive wastes, lead, mercury, solvents, benzenebutanoic acid, cyclophosphamide, daunomycin, malphalan, and glucopyranose. The facility would perform waste determinations using material safety datasheets. Hazardous wastes would be collected in designated accumulation areas. As described in Section 3.6, "Geology and Soils," the 2019 CBC also includes special seismic requirements for hospitals under the authority of OSHPD to ensure that hospital buildings do not fail during earthquakes and that they avoid the accidental release of hazardous materials.

The transport and disposal of medical wastes at the CNU Medical Center would be regulated under the California Medical Waste Management Program. This program includes requirements for facilities that generate large quantities of medical waste, waste haulers, containment and storage of medical waste, and enforcement. These requirements include the need to establish separate refuse collection areas and labeling requirements. Radioactive materials at the medical center would be managed under a Radioactive Material License issued by RHB of CDPH. CNU would likely obtain a Medical Waste Permit as a large-quantity medical waste generator with on-site treatment as part of the Regulated Medical Waste Management Program overseen by Sacramento County EMD. The hospital would also be subject to California licensing requirements under the Radiation Control Law and Bio Safety Standards. In addition, the City would enforce its General Plan and Municipal Code through Project conditions of approval.

The existing SMUD substation is required to comply with a Hazardous Materials Business Plan that identifies the type and nature of the hazardous materials used on-site and provides an operation-specific emergency response plan. The new 12-/69-kilovolt transformer would contain insulating oil (typically mineral oil), and a secondary containment system would be constructed to retain any oil leaks on-site. Operation of the improvement would also be subject to SMUD's SPCC Plan for the site, which identifies specifications for containment measures in the event of an accidental release.

Compliance with these regulations would reduce the potential for accidental release of hazardous materials during future operation and would minimize both the frequency and the magnitude if such a release occurs. With enforcement of existing hazardous materials regulations and the application of relevant City policies and code requirements as conditions of approval, the CNU Medical Center would be operated to minimize potential impacts from the release of hazardous materials. The impact would be **less than significant**.

Mitigation Measures

No mitigation is required in addition to implementation of General Plan policies, City Municipal Code requirements, and other applicable regulations.

Impact 3.8-3: Impair Implementation of, or Physically Interfere with, an Adopted Emergency Response Plan or Emergency Evacuation Plan

The Project would not impair the implementation of emergency response or evacuation plans, and it would not permanently alter the capacity of key transportation routes. Temporary road closures during construction, if required, would not be expected to substantially impair evacuation and response. Access to I-5 would not be affected. This impact would be **less than significant**.

Elk Grove participates in the multijurisdictional Sacramento County LHMP. The purpose of the plan is to guide hazard mitigation planning to better protect the people and property of the county from the effects of hazard events. The Sacramento LHMP includes policies and programs for participating jurisdictions to implement that reduce the risk of hazards and protect public health, safety, and welfare. The City's EOP provides a strategy for the City to coordinate and conduct emergency response. The intent of the EOP is to provide direction on how to respond to an emergency from the initial onset, through an extended response, and into the recovery process.

The Sacramento County Evacuation Plan identifies key evacuation routes as major interstates, highways, and major roadways. The plan indicates that specific evacuation routes would be established for individual situations based on the geographical location and magnitude of the emergency, as well as the time of day and day of the week. During an evacuation, County Department of Transportation staff would calculate traffic flow capacity and decide which of the available traffic routes should be used to move people in the correct directions.

In the event of an emergency that would require citizens to evacuate, including those citizens who live in the City, Sacramento County would implement its EOP, evacuation plan, and mass care and shelter plan. The emergency evacuation plan identifies I-5 as a key evacuation route but is adapted to specific situations and updated in response to changes in growth patterns and development.

Construction activities may result in temporary lane closures along Elk Grove Boulevard, West Taron Drive, and Riparian Drive associated with off-site improvements; increased truck traffic; and other roadway effects that may impede emergency vehicles, temporarily increasing response times and impeding existing services. Construction activities do not, however, have the potential to substantially hinder emergency response activities or physically interfere with established evacuation routes. Section 12 of the City's Standard Construction Specifications (Construction Area Traffic Control) identifies specific actions that must be implemented for traffic control to ensure safety for motorists and workers. These requirements must be stated in the general notes on Project improvement plans, which is confirmed by City staff during plan review.

As an emergency healthcare facility, the Project would be designed to permit access by emergency service providers during operation. Access to the CNU Medical Center would comply with the City's and CCSD Fire Department's design standards pertaining to emergency access, and the Project would provide a dedicated emergency left-turn pocket on Elk Grove Boulevard for emergency vehicle access. In addition, the hospital would be designed for shelter-in-place that may continue to operate with back-up generators even under 200-year flood conditions. (building finished first floors would be elevated above the 200-year flood elevation). The proximity of the Project site to I-5 would facilitate patient evacuation, if required. Further, the additional population at the CNU Project site would be incorporated into future updates of the Sacramento County Evacuation Plan.

The potential for construction activities or development to impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan would be **less than significant**.

Mitigation Measures

No mitigation is required in addition to compliance with the City's and CCSD Fire Department's design standards.

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3.9 HYDROLOGY AND WATER QUALITY

This section identifies the regulatory context and policies related to hydrology and water quality, describes the existing hydrologic conditions at the CNU Medical Center Project site, and evaluates potential hydrology and receiving water quality impacts of the Project. Potential effects on the capacity of City of Elk Grove water supply, sewer/wastewater, and drainage/stormwater facilities are addressed in Section 3.15, "Utilities and Service Systems."

Comments were received from residents in response to the NOP. Commenters noted that the Draft EIR should identify address water quality impacts to groundwater and stormwater, including impacts to the Stone Lakes Wildlife Refuge. Commenters requested details on flooding impacts and Project impacts associated with placement in the 200-year floodplain. Comments also requested an evaluation of water supply impacts related to compliance with Sacramento County Water Agency Groundwater Management Plan, and the Sustainable Groundwater Management Act. These issues are considered below.

3.9.1 Regulatory Setting

FEDERAL

Clean Water Act

The U.S. Environmental Protection Agency (EPA) is the lead federal agency responsible for water quality management. The Clean Water Act (CWA) is the primary federal law that governs and authorizes water quality control activities by EPA, as well as the states. Various elements of the CWA address water quality. They are discussed below.

CWA Water Quality Criteria/Standards

Pursuant to federal law, EPA has published water quality regulations under Title 40 CFR. Section 303 of the CWA requires states to adopt water quality standards for all surface waters of the United States. As defined by the act, water quality standards consist of designated beneficial uses of the water body in question and criteria that protect the designated uses. Section 304(a) requires EPA to publish advisory water quality criteria that accurately reflect the latest scientific knowledge on the kind and extent of all effects on health and welfare that may be expected from the presence of pollutants in water. Where multiple uses exist, water quality standards must protect the most sensitive use. As described in the discussion of state regulations below, the State Water Resources Control Board (State Water Board) and its nine regional water quality control boards (RWQCBs) have designated authority in California to identify beneficial uses and adopt applicable water quality objectives (WQOs).

CWA Section 303(d) Impaired Waters List

Under Section 303(d) of the CWA, states are required to develop lists of water bodies that do not attain WQOs after implementation of required levels of treatment by point source dischargers (municipalities and industries). Section 303(d) requires that the state develop a total maximum daily load (TMDL) for each of the listed pollutants. The TMDL is the amount of the pollutant that the water body can receive and still comply with WQOs. The TMDL is also a plan to reduce loading of a specific pollutant from various sources to achieve compliance with WQOs. In California, implementation of TMDLs is achieved through water quality control plans, known as Basin Plans, of the RWQCBs. See "State" section, below.

National Pollutant Discharge Elimination System

The National Pollutant Discharge Elimination System (NPDES) permit program was established in the CWA to regulate municipal and industrial discharges to surface waters of the United States. NPDES permit regulations have been established for broad categories of discharges, including point source waste discharges and nonpoint source stormwater runoff. Each NPDES permit identifies limits on allowable concentrations and mass emissions of pollutants contained in the discharge. Sections 401 and 402 of the CWA contain general requirements regarding NPDES permits.

“Nonpoint source” pollution originates over a wide area rather than from a definable point. Nonpoint source pollution often enters receiving water in the form of surface runoff and is not conveyed by way of pipelines or discrete conveyances. Two types of nonpoint source discharges are controlled by the NPDES program: discharges caused by general construction activities and the general quality of stormwater in municipal stormwater systems. The goal of the NPDES nonpoint source regulations is to improve the quality of stormwater discharged to receiving waters to the maximum extent practicable. The RWQCBs in California are responsible for implementing the NPDES permit system (see the “State” section, below).

National Flood Insurance Act

The Federal Emergency Management Agency (FEMA) is tasked with responding to, planning for, recovering from, and mitigating against disasters. The Federal Insurance and Mitigation Administration within FEMA is responsible for administering the National Flood Insurance Program (NFIP) and administering programs that aid with mitigating future damages from natural hazards.

As part of implementation of the National Flood Insurance Act (42 U.S.C. 4001 et seq.), FEMA prepares Flood Insurance Rate Maps (FIRMs) that delineate the regulatory floodplain to assist local governments with the land use planning and floodplain management decisions needed to meet the requirements of the NFIP. Floodplains are divided into flood hazard areas, which are areas designated according to their potential for flooding, as delineated on FIRMs. Special Flood Hazard Areas are the areas identified as having a 1-percent chance of flooding in each year (otherwise known as the 100-year flood). In general, the NFIP mandates that development is not to proceed within the regulatory 100-year floodplain if the development is expected to increase flood elevation by 1 foot or more.

STATE

Porter-Cologne Water Quality Control Act

California’s primary statute governing water quality and water pollution issues with respect to both surface waters and groundwater is the Porter-Cologne Water Quality Control Act of 1970 (Porter-Cologne Act) (Water Code Division 7, Water Quality). The Porter-Cologne Act grants the State Water Board and each of the nine RWQCBs power to protect water quality, and it is the primary vehicle for implementation of California’s responsibilities under the CWA. The applicable RWQCB for the Project is the Central Valley RWQCB. The State Water Board and the Central Valley RWQCB have the authority and responsibility to adopt plans and policies, regulate discharges to surface water and groundwater, regulate waste disposal sites, and require cleanup of discharges of hazardous materials and other pollutants. The Porter-Cologne Act also establishes reporting requirements for unintended discharges of any hazardous substances, sewage, or oil or petroleum products.

Under the Porter-Cologne Act, each RWQCB must formulate and adopt a water quality control plan (known as a “Basin Plan”) for its region. The Basin Plan for the Central Valley Region includes a comprehensive list of water bodies within the region and detailed language about the components of applicable WQOs. The Basin Plan recognizes natural water quality, existing and potential beneficial uses, and water quality problems associated with human activities throughout the Sacramento and San Joaquin River Basins. Through the Basin Plan, the Central Valley RWQCB executes its regulatory authority to enforce the implementation of TMDLs and to ensure compliance with surface WQOs. The Basin Plan includes both narrative, and numerical WQOs designed to provide protection for all designated and potential beneficial uses in all its principal streams and tributaries. Applicable beneficial uses include municipal and domestic water supply; irrigation; noncontact and contact water recreation; groundwater recharge; fresh water replenishment; hydroelectric power generation; and preservation and enhancement of wildlife, fish, and other aquatic resources.

The Central Valley RWQCB also administers the adoption of waste discharge requirements, manages groundwater quality, and adopts projects within its boundaries under the NPDES General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities (General Permit).

NPDES Construction General Permit for Stormwater Discharges Associated with Construction Activity

The State Water Board has adopted the Statewide NPDES General Permit for Stormwater Discharges Associated with Construction Activity (Construction General Permit Order 2009-0009-DWQ). The State requires that projects disturbing more than 1 acre of land during construction file a Notice of Intent with the applicable RWQCB to be covered under this permit. Construction activities subject to the General Permit include clearing, grading, stockpiling, and excavation. Additionally, the Construction General NPDES Permit covers incidental removal of water from excavations during construction. Dischargers are required to eliminate or reduce non-stormwater discharges to storm sewer systems and other waters. A storm water pollution prevention plan (SWPPP) must be developed and implemented for each site covered by the permit. The SWPPP must include best management practices (BMPs) designed to prevent construction pollutants from contacting stormwater and keep products of erosion from moving off-site into receiving waters throughout the construction and life of the project; the BMPs must address source control and, if necessary, pollutant control.

NPDES Stormwater Permit for Discharges from Small Municipal Separate Storm Sewer Systems

The Municipal Stormwater Permitting Program regulates stormwater discharges from municipal separate storm sewer systems (MS4s). Stormwater is runoff from rain or snowmelt that runs off surfaces, such as rooftops, paved streets, highways, or parking lots, and it can carry with it pollutants, such as oil, pesticides, herbicides, sediment, trash, bacteria, and metals. The runoff can then drain directly into a local stream, lake, or bay. Often, the runoff drains into storm drains, which eventually drain untreated stormwater into a local water body.

The City is an MS4 co-permittee with the cities of Citrus Heights, Folsom, Galt, Rancho Cordova, and Sacramento and the County of Sacramento. NPDES permit terms are 5 years. The current regionwide permit (Order No. R5-2016-0040), adopted by the Central Valley RWQCB in June 2016, allows each permittee to discharge urban runoff from MS4s in its respective municipal jurisdiction, and it requires Phase I MS4 permittees to enroll under the regionwide permit as their current individual permits expire. Regional MS4 permit activities are managed jointly by the Sacramento Stormwater Quality Partnership, which consists of the seven jurisdictions covered by the permit.

Under the permit, each permittee is also responsible for ensuring that stormwater quality management plans are developed and implemented that meet the discharge requirements of the permit. Under the 2016 permit, measures should be included in the stormwater quality management plan that demonstrate how new development would incorporate low-impact development (LID) design in projects. The new permit also includes requirements for addressing TMDLs. The City Department of Public Works is responsible for ensuring that its specific MS4 permit (Order No. R5-2016-0040-005) requirements are implemented. Compliance with the MS4 permit is regulated through Chapter 15.12 of the City Municipal Code.

California Water Code

The California Water Code is enforced by the California Department of Water Resources (DWR). The mission of DWR is "to manage the water resources of California in cooperation with other agencies, to benefit the State's people, and to protect, restore, and enhance the natural and human environments." DWR is responsible for promoting California's general welfare by ensuring beneficial water use and development Statewide.

Groundwater Management

Groundwater management is outlined in the California Water Code, Division 6, Part 2.75, Chapters 1–5, Sections 10750–10755.4. The Groundwater Management Act was first introduced in 1992 as Assembly Bill (AB) 3030, and has since been modified by Senate Bill (SB) 1938 in 2002, AB 359 in 2011, and the Sustainable Groundwater Management Act (SGMA) (SB 1168, SB 1319, and AB 1739) in 2014. The intent of the acts is to encourage local agencies to work cooperatively to manage groundwater resources within their jurisdictions and to provide a methodology for developing a groundwater management plan.

The SGMA became law on January 1, 2015, and applies to all groundwater basins in the State (Water Code Section 10720.3). By enacting the SGMA, the legislature intended to provide local agencies with the authority and the technical and financial assistance necessary to sustainably manage groundwater within their jurisdiction (Water Code Section 10720.1).

Pursuant to the SGMA, any local agency that has water supply, water management, or land use responsibilities within a groundwater basin may elect to be a “groundwater sustainability agency” for that basin (Water Code Section 10723). The Sacramento Central Groundwater Authority (SCGA) has notified DWR that it has elected to become a groundwater sustainability agency pursuant to Water Code Section 10723.8 and that it intends to undertake sustainable groundwater management in an area roughly coincident with the Sacramento Valley Groundwater Basin, South American Subbasin.

Central Valley Flood Protection Act

The Central Valley Flood Protection Act of 2008 (Government Code Sections 65007, 65302.9, 65860.1, 65865.5, 65962, and 66474.5; Health and Safety Code Section 50465; and Water Code Division 5) establishes the 200-year flood event as the minimum level of protection for urban and urbanizing areas. As part of the State’s FloodSAFE program, those urban and urbanizing areas protected by flood control project levees must receive protection from the 200-year flood event level by 2025. DWR and the Central Valley Flood Protection Board (CVFPB) collaborated with local governments and planning agencies to prepare the 2012 *Central Valley Flood Protection Plan* (CVFPP) (DWR 2012), which CVFPB adopted on June 29, 2012. The objective of the 2012 CVFPP is to create a systemwide approach to flood management and protection improvements for the Central Valley and San Joaquin Valley. The Central Valley Flood Protection Act calls for updates to the CVFPP every 5 years. The first update of the CVFPP was adopted in August 2017, and the next update is scheduled for 2022. As required by the Central Valley Flood Protection Act, the City has mapped inundation areas for a 200-year flood.

State Plan of Flood Control

Section 9110(f) of the California Water Code defines the State Plan of Flood Control as follows:

“State Plan of Flood Control” means the state and federal flood control works, lands, programs, plans, policies, conditions, and mode of maintenance and operations of the Sacramento River Flood Control Project described in Section 8350, and of flood control projects in the Sacramento River and San Joaquin River watersheds authorized pursuant to Article 2 (commencing with Section 12648) of Chapter 2 of Part 6 of Division 6 for which the board or the department has provided the assurances of nonfederal cooperation to the United States, and those facilities identified in Section 8361.

The State Plan of Flood Control encompasses a wide network of facilities that range from major structures, such as levees, drainage pumping plants, drop structures, dams and reservoirs, and major channel improvements, to minor components, such as stream gauges, pipes, and bridges.

LOCAL

Sacramento County Storm Drainage Utility Zone 11A

The Project site is within the boundaries of Zone 11A of the Sacramento County Storm Drainage Utility. The City participates in the regional trunk drainage development fee program, which is specific to Zone 11A. Under a development impact fee program administered by Sacramento County, development in Zone 11A pays a Beach Stone Lake volume mitigation fee held in a trust for a future project. The Sacramento County Department of Water Resources pays flood insurance premiums for many homes in this floodplain from interest earned on funds held in the account.

Sacramento Central Groundwater Authority

SCGA manages groundwater in the Central Basin portion of the South American Subbasin. SCGA was formed in 2006 through a joint powers agreement signed by the Cities of Elk Grove, Folsom, Rancho Cordova, and Sacramento and Sacramento County. Among its many purposes, SCGA is responsible for managing the use of groundwater in the Central Basin to ensure long-term sustainable yield and for facilitating a conjunctive use program. The framework for maintaining groundwater resources in the Central Basin is the Sacramento County Water Agency (SCWA) Groundwater Management Plan, which includes specific goals, objectives, and an action plan to manage the basin. The plan also prescribes a well protection program to protect existing private domestic well and agricultural well

owners from declining groundwater levels resulting from increased groundwater pumping attributable to new development in the basin (SCWA 2016).

The SGMA also authorizes a groundwater management agency in a basin compliant with the California Statewide Groundwater Elevation Monitoring program to prepare an "Alternative" to a groundwater sustainability plan. SCGA submitted an Alternative Submittal document to DWR, but the document was not approved because, among other deficiencies, DWR was unable to verify that groundwater yield thresholds established by SCWA would prevent adverse effects on groundwater (DWR 2019). SCGA is now preparing a Groundwater Sustainability Plan for submittal to DWR by January 31, 2022.

Water Forum Agreement

The Water Forum is made up of a diverse group of businesses, agricultural leaders, environmentalists, citizen groups, water managers, and local governments from Sacramento, Placer, and El Dorado Counties. These stakeholders came together in 2000 to form an agreement for water management with the goals of providing a reliable and safe water supply for the region's economic health through 2030 and preserving the fishery, wildlife, recreation, and aesthetic values of the lower American River. The Water Forum Agreement was formalized through a Memorandum of Understanding whereby all signatories agreed to carry out the actions specified for them. SCGA relied on the negotiated volume of groundwater production referred to in the Water Forum Agreement as the basis for the groundwater yield thresholds described in the Alternative Submittal discussed above.

City of Elk Grove General Plan

The *City of Elk Grove General Plan* (City of Elk Grove 2019a) contains the following policies related to hydrology and water quality:

- ▶ **Policy NR-3-1:** Ensure that the quality of water resources (e.g., groundwater, surface water) is protected to the extent possible.
- ▶ **Policy NR-3-2:** Integrate sustainable stormwater management techniques in site design to reduce stormwater and control erosion.
- ▶ **Policy NR-3-3:** Implement the City's NPDES permit through the review and approval of development project and other activities regulated by the permit.
- ▶ **Policy NR-3-5:** Continue to coordinate with public and private water users, including users of private wells, to maintain and implement a comprehensive groundwater management plan.
- ▶ **Policy NR-3-6:** Support and coordinate with the efforts of the Sacramento Central Groundwater Authority in the development, adoption and ongoing implementation of the Groundwater Sustainability Plan for the South American Subbasin.
- ▶ **Policy ER-2-2:** Require that all new projects not result in new or increased flooding impacts on adjoining parcels or on upstream and downstream areas.
- ▶ **Policy ER-2-3:** Locate, and encourage other agencies to locate, new essential government service facility and essential health care facilities outside of 100-year and 200-year flood hazard zones, except in cases where such locations would compromise facility functioning. (*Proposed to be amended as part of the Project. See Impact 3.9-5.*)
- ▶ **Policy ER-2-4:** Relocate or harden existing essential government service facilities and essential health care facilities that are currently located inside of 100-year and 200-year flood hazard zones.
- ▶ **Policy ER-2-6:** Development shall not be permitted on land subject to flooding during a 100-year event, based on the most recent floodplain mapping prepared by FEMA or updated mapping acceptable to the City of Elk Grove. Potential development in areas subject to flooding may be clustered onto portions of a site which are not subject to flooding, consistent with other policies of this General Plan.
- ▶ **Policy ER-2-8:** The City will not enter into a development agreement, approve a building permit or entitlement, or approve a tentative or parcel map for a project located within an urban level of flood protection area, identified

in Figure 8-2 [of the General Plan], unless it meets one or more established flood protection findings. Findings shall be based on substantial evidence, and substantial evidence necessary to determine findings shall be consistent with criteria developed by DWR.

The four potential findings for a development project within the 200-year floodplain, as shown on Figure 8-2 [of the General Plan], are: 1) the project has an urban level of flood protection from flood management facilities that is not reflected in the most recent map of the 200-year floodplain; 2) conditions imposed on the project will provide for an urban level of flood protection; 3) adequate progress has been made toward construction of a flood protection system to provide an urban level of flood protection for the project, as indicated by the Central Valley Flood Protection Board; or 4) the project is a site improvement that would not result in the development of any structure, and would not increase risk of damage to neighboring development or alter the conveyance area of a watercourse in the case of a flood.

- ▶ **Policy ER-2-9:** Ensure common understanding and consistent application of urban level of flood protection criteria and conditions.
- ▶ **Policy ER-2-10:** Work with regional, county, and State agencies to develop mechanisms to finance the design and construction of flood management and drainage facilities to achieve an urban level of flood protection in affected areas.
- ▶ **Policy ER-2-17:** Require all new urban development projects to incorporate runoff control measures to minimize peak flows of runoff and/or assist in financing or otherwise implementing comprehensive drainage plans.
- ▶ **Policy ER-2-18:** Drainage facilities should be properly maintained to ensure their proper operation during storms.
- ▶ **Policy ER-6-8:** Continue to participate in the Sacramento Stormwater Quality Partnership to educate and inform the public about urban runoff pollution, work with industries and businesses to encourage pollution prevention, require construction activities to reduce erosion and pollution, and require developing projects to include pollution controls that will continue to operate after construction is complete.
- ▶ **Policy LU-5-12:** Integrate sustainable stormwater management techniques in site design to reduce stormwater runoff and control erosion.

City of Elk Grove Storm Drainage Master Plan

The City's comprehensive Storm Drain Master Plan identifies drainage concepts for upgrading the existing storm drainage and flood control collection system. It identifies and analyzes existing drainage deficiencies throughout the City, provides a range of drainage concepts for the construction of future facilities required to serve the City at buildout of the existing General Plan, and establishes criteria for selecting and prioritizing projects. The Storm Drain Master Plan may also be used for the development of a capital drainage financing program (City of Elk Grove 2011).

City of Elk Grove Municipal Code

Municipal Code Chapter 15.12: Stormwater Management and Discharge Control

Municipal Code Chapter 15.12 provides authority to the City for inspection and enforcement related to control of illegal and industrial discharges to the City storm drainage system and local receiving waters. It also addresses the requirement for BMPs and regulations to reduce pollutants in the City's stormwater.

Municipal Code Chapter 16.44: Land Grading and Erosion Control

Municipal Code Chapter 16.44 establishes administrative procedures, standards for review and implementation, and enforcement procedures for controlling erosion, sedimentation, other pollutant runoff, and the disruption of existing drainage and related environmental damage to ensure compliance with the City's NPDES permit. The chapter requires, before grading activities begin, that a detailed set of plans be developed that include measures to minimize erosion, sediment, and dust created by development activities.

Municipal Code Chapter 16.50: Flood Damage Prevention

Municipal Code Chapter 16.50 regulates development in flood-prone areas through specific siting and design requirements consistent with FEMA regulations.

Flood Combining District

As required by the CVFPP flood management requirements, the City has incorporated related measures into Title 23 of its Municipal Code. Section 23.42.040 establishes a flood (F) combining district comprising all known land covered by rivers, creeks, and streams and land subject to flooding within the City. For certain regulations and standards, the district is divided into three components: F 100, corresponding to the 100-year floodplain; F 200, corresponding to the 200-year floodplain; and F 100/200, corresponding to the area overlapped by both the 100-year and 200-year floodplain. Municipal Code Section 23.42.040.E includes the following requirements:

No development or physical changes requiring a development permit required by this title shall be allowed within the two hundred (200) year floodplain unless it has first met one (1) or more of these findings; these findings shall be made by the designated approving authority, as specified by EGMC Chapter 23.16:

1. The project has an urban level of flood protection from flood management facilities that is not reflected in the most recent map of the two hundred (200) year floodplain;
2. Conditions imposed on the project will provide for an urban level of flood protection;
3. Adequate progress has been made toward construction of a flood protection system to provide an urban level of flood protection for the project, as indicated by the Central Valley Flood Protection Board for State projects, or by the Floodplain Administrator for local projects; or
4. The project is a site improvement that would not result in the development of a new habitable structure, and would not increase risk of damage to neighboring development or alter the conveyance area of a watercourse in the case of a flood. Improvements that qualify for this exemption include, but are not limited to, the replacement or repair of a damaged or destroyed habitable structure with substantially the same building footprint area; interior repairs or remodels to existing structures; new nonhabitable structures or repairs or remodels to nonhabitable structures including but not limited to landscape features, detached garages, and pools and spas.

3.9.2 Environmental Setting

HYDROLOGY AND DRAINAGE

Regional Hydrology

The Project site is located at the western border of the City, in the southern end of the Sacramento Valley, approximately 30 miles northeast of the confluence of the San Joaquin and Sacramento Rivers. The Sacramento and San Joaquin Valleys make up the Great Valley geomorphic province of California, bounded by the Sierra Nevada to the east and the Coast Ranges to the west. The two rivers join in the Sacramento–San Joaquin Delta (the Delta), a massive complex of wetlands, marshes, and channels, and enter the Pacific Ocean at the San Francisco Bay.

The Sacramento River is the largest river and watershed system in California. Its watershed covers about 27,000 square miles and carries about 31 percent of the State's total surface water runoff. Its watershed covers 27,000 square miles and carries 31 percent of the State's total surface water runoff. Primary tributaries include the Pit, Feather, and American Rivers (SRWP 2010). The mouth of the Sacramento River is at Suisun Bay near Antioch, where it combines with the San Joaquin River. Following winter rains and Sierra snowmelt, the Sacramento River and its tributaries would historically rise and inundate their broad floodplains. This dynamic system deposited rich alluvial soil, changing the river's course and creating oxbow lakes and backwater, clearing debris and streambeds, and supporting miles of wetlands and riparian forest (USFWS 2007).

Development began in the lower portions of the Sacramento River watershed in the mid-1800s to take advantage of the proximity of two large rivers and fertile soils. Reclamation districts began to form in the early 1900s to construct canal and levee systems as a means for controlling or preventing natural flood events in the low-lying areas adjacent to the river. However, the river channel and levees could not contain the floodwaters from larger storm events. In 1917, after the massive floods of 1907 and 1909, the State of California developed the Sacramento River Flood Control Project. This project is a system of weirs (lowered and armored sections of levees design to be overtopped by high flows) that release floodwaters into a bypass system when flows exceed the downstream capacity of the river channel.

Local Hydrology

The Project site is located in the historic Beach-Stone Lakes Basin, approximately 1.8 miles east of the Sacramento River. The historic Beach Lake once covered approximately 1,000 acres. North and South Stone Lakes were also extensive. During winter storms, the flooded basin could stretch for more than 10 miles, from lower Morrison Creek in the north to the Mokelumne River in the south (USFWS 2007). With the construction of the Sacramento River levee system, construction of a railroad bisecting the basin, and finally construction of I-5, the basin was nearly drained. The 6,000-acre Stone Lakes National Wildlife Refuge was established in 1994 to preserve the remnants of floodplain habitat in the Beach-Stone Lakes Basin. North Stone Lake, which is similar in size to its historic extent, was drained, cleared, and farmed before the 1940s. South Stone Lake was originally about three times its current size, extending further to the west from the railroad levee that now forms its western boundary (USFWS 2007). Figure 3.9-1 shows the local hydrologic features near the Project site, including the Sacramento River, Morrison Creek, Shed A Channel (Ehrhardt Channel), Shed B Channel (Franklin Creek), and the Stone Lakes.

Stormwater Drainage

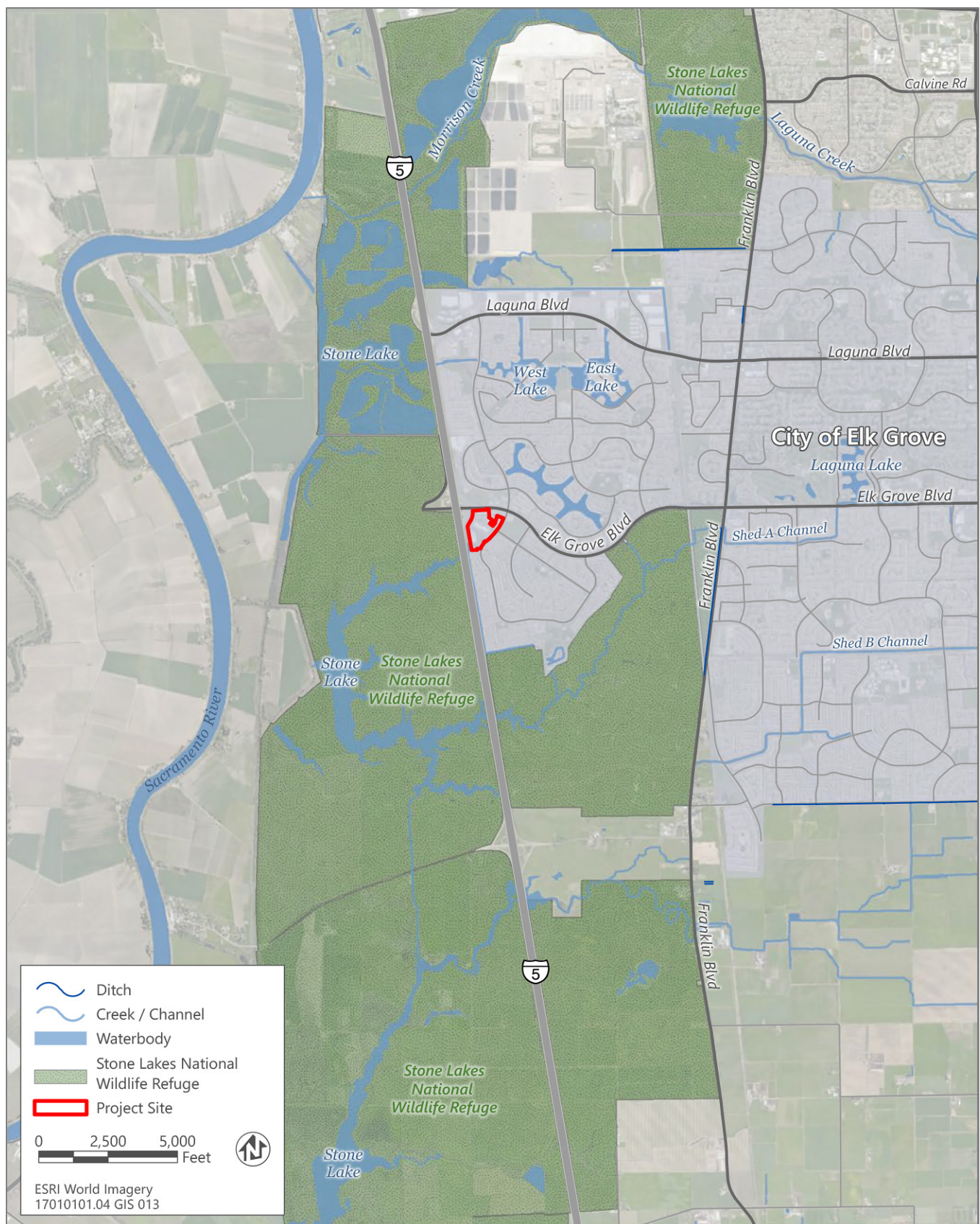
Urban runoff is created by stormwater draining from impervious surfaces in developed areas. As stormwater flows from individual sites, it is traditionally collected in curb and gutter drainage systems and directed to larger storm drains that eventually drain to surface waters. Urban runoff within the City is conveyed through a storm drainage and flood control collection system that includes nearly 400 miles of underground piping and 60 miles of natural and constructed channels (City of Elk Grove 2018). The City owns and operates these facilities and channels, including pump stations, levees, detention basins, and other flood control features.

The Project site is located within Laguna Stonelake urban watershed as defined by the *City of Elk Grove Stormwater Drainage Master Plan* (City of Elk Grove 2011). The watershed covers approximately 430 acres generally bounded by I-5 to the west, Elk Grove Boulevard to the north, and the adjacent "Shed A" drainage area to the south and east. Stormwater runoff is carried by an underground pipe system to City Detention Basin L-4 at the south end of the watershed. From there, runoff is pumped to an outfall channel that conveys runoff to the Shed A channel and ultimately to the Beach-Stone Lakes area west of I-5. Detention Basin L-4 provides flood control storage and stormwater treatment. The hydrologic analysis of the Laguna Stonelake drainage system completed for the 2011 Stormwater Drainage Master Plan found that the existing detention basin and pump system can accommodate stormwater runoff from 2-year, 10-year, and 100-year storms. No major new drainage facilities are anticipated to serve new development.

The Preliminary Drainage Assessment prepared for the Project found that the existing estimated impervious coverage at the Project site is 75.8 percent (Wood Rodgers 2020). Stormwater from the site is captured by the City's stormwater conveyance system and drains to Stone Lakes as described above.

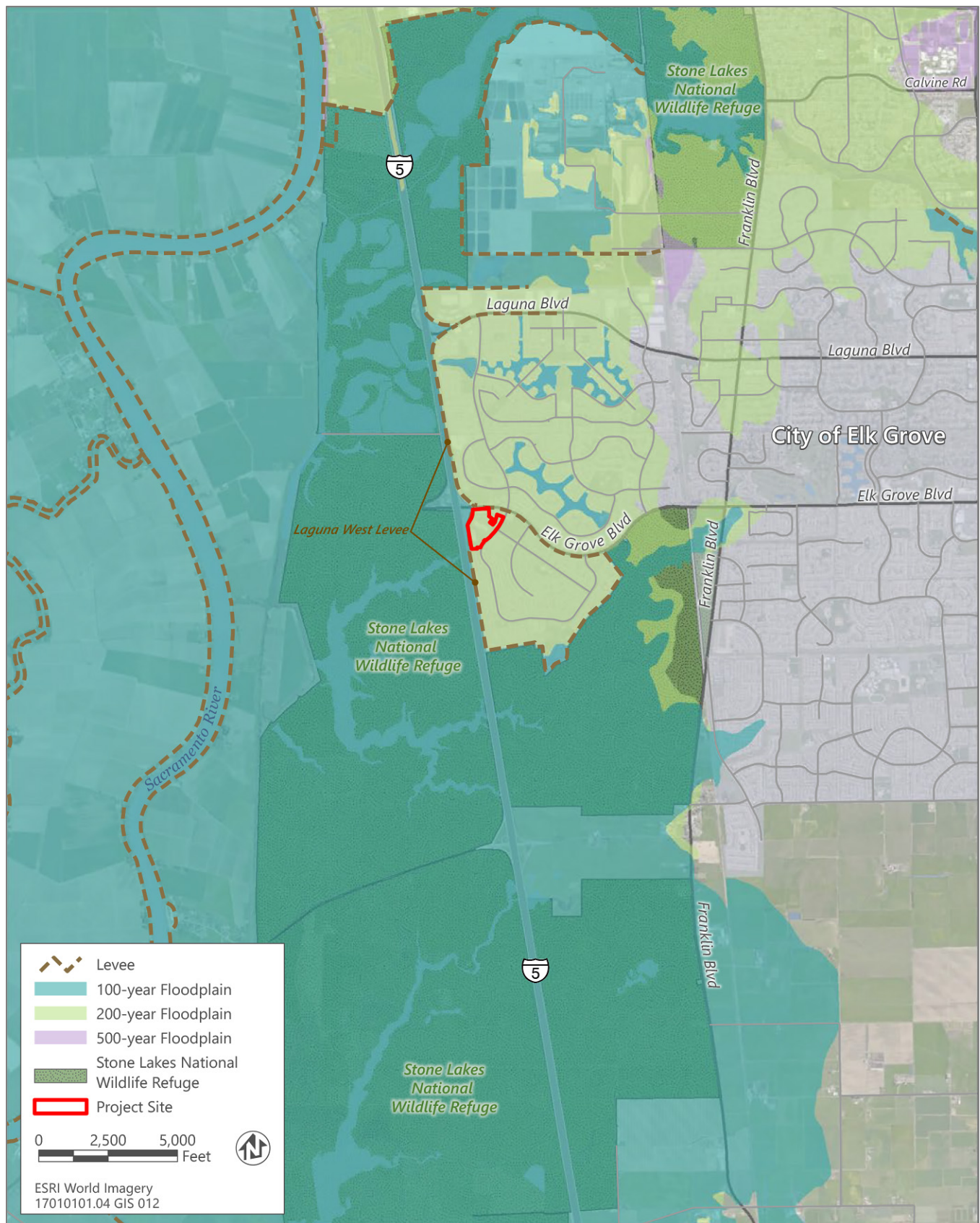
Flood Conditions

The Project site is located outside of the 100-year flood zone as delineated by FEMA FIRM 06067C0315J in an area of reduced flood risk due to protection from levees. It is located within the 200-year floodplain, requiring that the City ensure that an urban level of flood protection be maintained at the site (as determined by DWR). Figure 3.9-2 shows the 100-year floodplain as determined by FEMA and the 200-year floodplain as determined by DWR and the City (City of Elk Grove 2018).



Source: Adapted by Ascent Environmental in 2020

Figure 3.9-1 Surface Water



Source: Adapted by Ascent Environmental in 2020

Figure 3.9-2 Floodplain

A 200-year flood event caused by levee breaks along the Sacramento River could result in flooding in western residential neighborhoods in the City, including portions of Laguna West, the residential neighborhood where the Project site is located. Floodwater depth in the event of a levee failure would range from 0 to 10 feet at the Project site, as shown in Figure 3.9-3 (City of Elk Grove 2019b). Flood risk conditions can change over time through natural processes or project improvements on the local or regional scale. Therefore, the 200-year flood map is considered the base case for establishing potential flood risk and will be updated as new technical studies become available and changes occur in flood protection infrastructure.

Levees

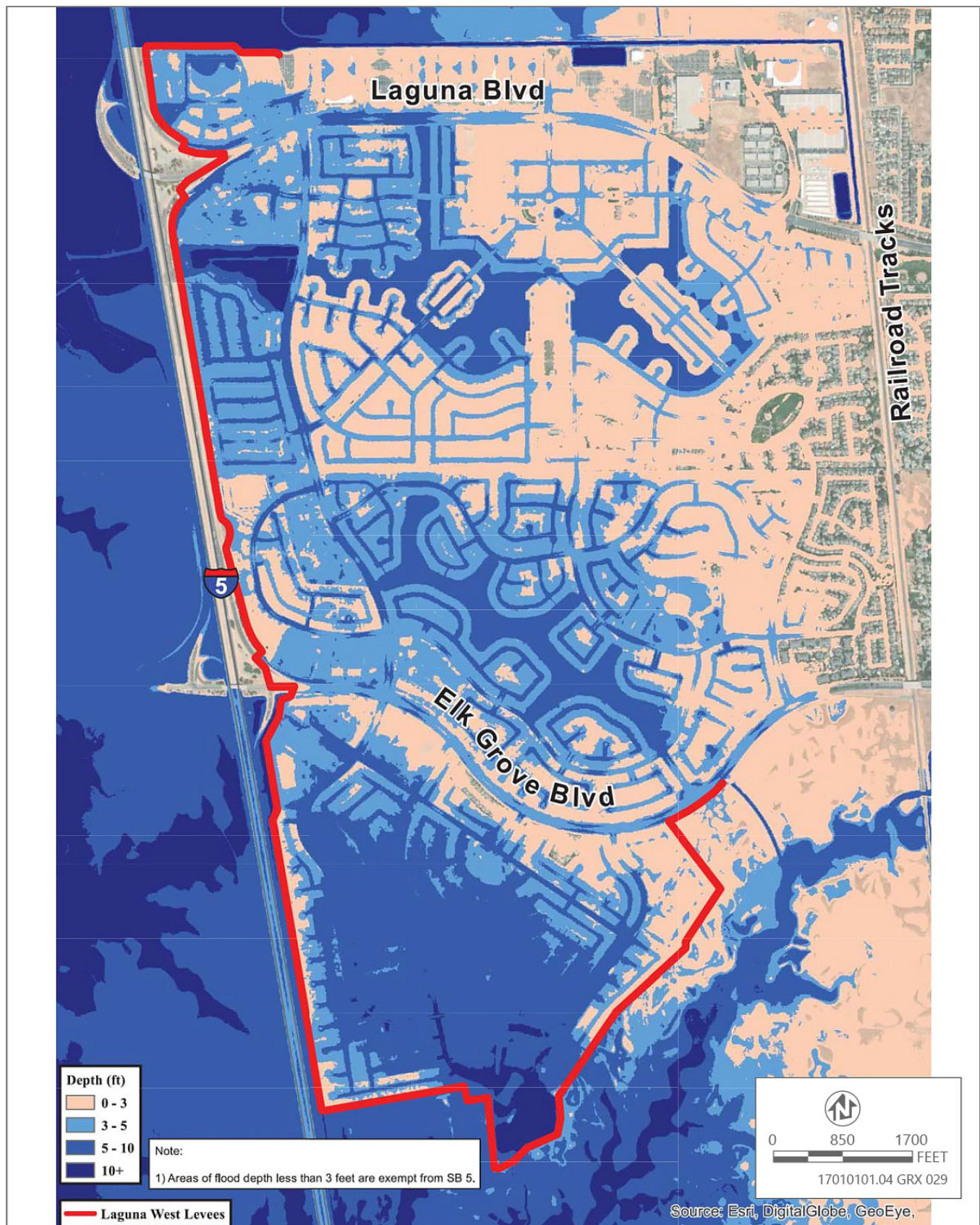
The levee system in the City was constructed initially by hand labor and later by dredging to hold back river floods and tidal influences in order to obtain additional lands for grazing and crop growing (City of Elk Grove 2018). Continued maintenance is necessary to hold these levees against the river floods that threaten surrounding areas. Because levees are vulnerable to peat oxidation, as well as sand, silt, and peat erosion, new material is continually added to maintain them. Subsiding farmlands adjacent to levees may increase water pressure against the levees, adding to the potential for levee failure. In addition, many levees are not maintained to any specified standard, which can increase the likelihood of failure and inundation (City of Elk Grove 2018). The State is responsible for construction, operation, and maintenance of levees that were constructed through a federally authorized flood project in the State. These levees are considered part of the State Plan of Flood Control and are referred to as "project levees." There are no project levees in the City limits, although several project levees along the Sacramento River provide flood protection for the City. Nonproject levees are levees that were generally constructed before project levees and without federal or State assistance; they are not part of the State Plan of Flood Control. Nonproject levees are located along the eastern side of I-5 and along Morrison Creek, Laguna Creek, and the Cosumnes River. They provide flood protection to the community.

The Laguna West levee system is the nonproject levee system on the western border of the City that provides 100-year flood protection for the Project site (Figure 3.9-2). This levee system was accredited by FEMA as meeting 100-year standards in a process spanning the late 1990's to early 2000's and currently meets NFIP requirements (City of Elk Grove 2019b). Since the Laguna West levee system was accredited, USACE rescinded the levee certification package for one of the Sacramento River levees responsible for maintaining the FEMA approved Base Flood Elevation (BFE). The City initiated a geotechnical analysis of the levee system in 2019 to determine whether improvements are needed to maintain the 100-year flood protection rating in the future. To provide a 200-year Urban Level of Flood Protection, approximately 4.5 miles of the Laguna West levee system would need to be raised by 3.5 feet (City of Elk Grove 2019b).

Dams

"Dam inundation" refers to flooding that occurs when dams fail. Dam failure can occur from overtopping of a dam during extreme storm events, water seepage through earthen embankments causing internal soil erosion, or damage caused by seismic activities. National statistics show that overtopping due to inadequate spillway design, debris blockage of spillways, or settlement of the dam's crest accounts for approximately 34 percent of all U.S. dam failures (ASDSO 2020).

The Project site is within the inundation area of a failure at Folsom Dam. Folsom Dam, constructed between 1948 and 1956, is a series of earthen dams that flank a central concrete dam. Large storms in 1986 and 1997 forced dam operators to discharge high water flows into the lower American River to avoid overtopping of the dam. However, these high river flows stress river levees that protect the Sacramento area. An auxiliary spillway was constructed adjacent to Folsom Dam's main concrete dam in 2017. The gates of the new spillway structure sit 50 feet lower than the main spillway, which allows the dam manager to better react to large floods by safely releasing water earlier in a storm event (Reclamation 2020). Currently, Folsom Dam is undergoing a 5-year effort to raise the height of the dam by 3.5 feet to increase flood protection for downstream residents. The work involves packing rock, gravel, dirt, and pavement on top of the earthen portions of the Folsom Dam and dike system. The central concrete dam is already taller than the adjacent earthen dams and will not be raised. The Project will increase the dam capacity by 4 percent (Bizjak 2020).



Source: Image produced and provided by MBK Engineers in 2019

Figure 3.9-3 City of Elk Grove Laguna West Area 200-Year Floodplain

Climate Change

Climate change forecasts indicate that more intense rainfall events, generating more frequent or extensive runoff and flooding, will occur in the future (City of Elk Grove 2019c). Extreme weather events, such as high-intensity storms, could breach levees along the Sacramento and American Rivers, especially where levees have not yet been upgraded or do not meet the minimum FEMA requirements. Furthermore, as peak flow patterns increase as a result of more rapid snowmelt, the levees currently protecting the Sacramento region from flooding events come under greater stress from long-term increases in peak, high-volume runoff. The increased pressure and flow of the Sacramento and American Rivers will exacerbate the Sacramento region's existing vulnerability to severe flooding (Ascent Environmental 2017). For these reasons, areas within floodplains will be more vulnerable to heightened flooding threats (City of Elk Grove 2019c).

Groundwater Hydrology

The Central Valley of California contains the largest basin-fill aquifer system in the State. From north to south, the aquifer system is divided into the Sacramento Valley, Sacramento–San Joaquin Delta, and San Joaquin Valley subregions. The City of Elk Grove is situated within the Sacramento Valley Groundwater Basin, South American Subbasin. Within the larger South American Subbasin, there are three groundwater basins—North, Central, and South—in Sacramento County. The Project site is located within the Central Basin, which includes the City of Elk Grove and areas of Sacramento County and the City of Sacramento (City of Elk Grove 2018). Groundwater in the Central Basin generally occurs in a shallow aquifer zone (Modesto Formation) or in an underlying deeper aquifer zone (Mehrtens Formation). Groundwater in the shallow aquifer is generally located between 20 and 100 feet below the ground surface (bgs) depending on where and when the measurement is taken and extends to approximately 200–300 feet bgs (SCWA 2006). Water quality in this zone is considered to be good with the exception of high arsenic detections in a few locations. The deep aquifer is separated from the shallow aquifer by a discontinuous clay layer that partially isolates the two water sources. There is some potential for movement of groundwater between the two aquifers, usually the result of heavy groundwater pumping. The base of the potable water portion of the deep aquifer averages approximately 1,400 feet bgs. Water in this aquifer typically has higher concentrations of total dissolved solids, iron, and manganese (SCWA 2006).

Older municipal wells and all domestic wells have been constructed in the shallow aquifer zone to avoid treatment. However, the policies and practices of SCWA in the Central Basin have led to the construction of larger municipal wells that target the Mehrten Formation where higher production rates can be achieved and less impact on private domestic wells would occur. This policy has in turn led to California Department of Health Services (now the California Department of Health Care Services) requiring treatment of all municipal wells to meet primary and secondary drinking water quality standards (SCWA 2006).

Intensive use of groundwater over the past 60 years has resulted in a general lowering of groundwater elevations centered near Elk Grove. This localized lowering of the groundwater table is called a cone of depression. The Elk Grove cone of depression was first identified in the *Central Sacramento County Groundwater Management Plan* (SCWA 2006). The 2018 SGMA annual report found a substantial reduction in the size and extent of the cone of depression, which is attributed to active management of the basin and reductions in groundwater extraction (SGMA 2019).

Local Groundwater

The geotechnical exploration completed for the Project site (ENGEO 2019) encountered groundwater in several soil borings at approximate depths of 18.5 and 29 feet below existing grade. The exploration crew was unable to directly measure groundwater water depths due to caving of the holes. In one location adjacent to a landscaped area, perched groundwater (a shallow isolated areas of groundwater fed by surface precipitation) was found at a depth of 3½ feet below existing grade. Previous borings at the site conducted in 2005 and 2008 had maximum depths of 16.5 feet and did not encounter groundwater. A review of nearby wells and publicly available groundwater data found groundwater in the area at depths of 10–20 feet bgs in fall and 0–10 feet bgs in spring (ENGEO 2019).

Groundwater Management

The Project site is located in the Laguna Vineyard water system south service area. This area is supplied by a mix of surface water, groundwater, and recycled water (SCWA 2016). In 2015, the total volume of water supplied within this service area was 21,618 acre-feet. The Laguna Vineyard system depends on mostly groundwater during dry years when available surface water supplies are reduced. Groundwater is supplied by a system of groundwater wells and treatment plants. The Water Forum Agreement establishes a limit of 273,000 acre-feet per year of total groundwater pumping from the Central South American Subbasin; however, it does not assign or allocate a specific groundwater pumping amount for SCWA. Groundwater pumping has consistently remained below the Water Forum Agreement's limit (SCWA 2019). It is expected that the Groundwater Sustainability Plan currently being developed for the South American Subbasin will establish safe and sustainable yields. On the whole, groundwater pumping by SCWA in the larger South American Subbasin has steadily decreased from a high of approximately 34,600 acre-feet per year in 2011, to 24,600 acre-feet per year in 2015 (SCWA 2016), and to 15,653 acre-feet per year in 2017 (SCWA 2019).

The SCWA 2015 *Urban Water Management Plan* (SCWA 2016) provides projections of "reasonably available" groundwater volume, based on groundwater supply capacity, with safe yield not quantified. For 2020 and 2025, the reasonably available groundwater volume is projected to be 47,000 acre-feet per year, increasing to 52,000 acre-feet per year in 2030, and 62,000 acre-feet per year in 2035 and 2040.

WATER QUALITY

Surface Water Quality

The Project site is in an urban watershed isolated by levees that drains to South Stone Lake, the Sacramento River, and the Delta. Water quality in the portions of the Sacramento River and the northern Delta waterways has been affected by historical gold mining activities along tributaries, agricultural runoff, and discharges of industrial and urban waste. In recent decades, treatment of wastewater and management of urban stormwater have improved greatly (SRWP 2010). Industrial dischargers and municipalities now provide at least secondary treatment of wastewater, and many cities have implemented urban stormwater programs to reduce the effects of urban runoff on adjacent waterways (SRWP 2010).

In 1990, the Central Valley RWQCB identified the Delta as impaired by mercury because levels of mercury in fish posed a risk of human and wildlife consumers. Mercury in the Delta comes from historic mining activities; naturally occurring mercury in soils; and atmospheric deposition from the burning of coal, natural gas, and petroleum (EPA 2015). Methylmercury is the most hazardous form of mercury in the environment and can cause neurological symptoms and developmental concerns for children exposed in utero. It also can cause reduced reproductive success in wildlife. Because mercury is absorbed from food sources and accumulates in the tissues of organisms as they age (referred to as bioaccumulation), mercury concentrations increase in higher levels of the food chain.

Around the time when it identified the issue with mercury, the Central Valley RWQCB also found that north Delta waterways were contaminated with high levels of organophosphate agricultural pesticides (particularly diazinon and chlorpyrifos). To address this issue, limitations were placed on the concentration of these pesticides allowed in discharges. Over the past 25 years, this has resulted in changes in agricultural practices so that levels of organophosphate pesticides meet WQOs in most samples (Central Valley RWQCB 2014).

Delta waters contain high levels of organic carbon and nutrients. The nutrients stimulate algal growth, which causes taste and odor concerns for use of the water in domestic supply. The nutrients also cause excessive growth of water weeds (such as water hyacinth) that interfere with recreational use of Delta waters for boating and swimming. The growth of these weeds can also plug screens on irrigation canals and drip irrigation systems when Delta waters are used for agricultural purposes (Lee and Jones-Lee 2004).

Water quality in North and South Stone Lakes is affected by drainage that originates in urban and agricultural areas and empties into the lakes and surrounding wetlands (USFWS 2007). Baseline water quality data collected between 1997 and 2000 found high levels of selenium in both North and South Stone Lakes. Temperature, pH, dissolved oxygen, and conductivity were within normal levels; however, approximately half of the samples had elevated levels

of copper and one-quarter of the samples had high levels of lead. Nearly all sites had concentrations of pesticide diazinon above recommended chronic criteria (USFWS 2007). The Stone Lakes National Wildlife Refuge developed a water quality monitoring plan in 2019; however, data are not yet available.

Groundwater Quality

Groundwater quality can be affected by many things, but the chief controls on the characteristics of groundwater quality are the source and chemical composition of recharge water, properties of the host sediment, and history of discharge or leakage of pollutants. The groundwater quality in the South American Subbasin is generally good, although iron and manganese are common, and there are some occurrences of arsenic and nitrate (SCWA 2016). Groundwater in the upper aquifer system is of higher quality than that found in the lower aquifer system, although there are some occurrences of arsenic (which is known to occur naturally in aquifer sediments) and nitrate. Water from the upper aquifer generally does not require treatment other than disinfection for public drinking water systems unless high arsenic or nitrate values are encountered. Groundwater in the lower aquifer system contains higher concentrations of iron, manganese, and total dissolved solids, and water pumped from the lower aquifer often requires treatment for iron and manganese. Most of SCWA's Zone 40 wells have iron and manganese treatment facilities. Principal groundwater contaminant plumes within the South American Subbasin emanate from source areas, including Mather Field, Aerojet, Boeing, the former Army Depot, and various landfills. The presence of these contaminant plumes has affected some existing municipal wells (SCWA 2016). Significant remediation efforts/programs by federal, State, and local government agencies are in progress to clean up the contaminated groundwater and confine the contaminant plumes from further spreading. Remediation involves extracting and treating contaminated groundwater. Currently, remediated groundwater is discharged into natural water bodies and flows out of the South American Subbasin, as noted above. There are ongoing discussions and negotiations between purveyors and parties responsible for the cleanup to keep the remediated groundwater in the South American Subbasin and put it to beneficial use (SCWA 2016).

3.9.3 Impacts and Mitigation Measures

METHODOLOGY

Evaluation of potential hydrologic and water quality impacts is based on a review of existing documents and studies that address water resources in the vicinity of the Project. This includes Project site plans (Appendix B) and the CNU Medical Center Project Drainage Study (Appendix H). Information obtained from these sources was reviewed and summarized to describe existing conditions and to identify potential environmental effects, based on the standards of significance presented in this section. In determining the level of significance, the analysis assumes that the Project would comply with relevant federal, State, and local laws, ordinances, and regulations.

THRESHOLDS OF SIGNIFICANCE

An impact on hydrology or water quality would be significant if implementation of the Project would:

- ▶ violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface water or groundwater quality;
- ▶ substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the Project may impede sustainable groundwater management of the basin;
- ▶ 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-site;
 - 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; or
- impede or redirect flood flows
- ▶ in flood hazard, tsunami, or seiche zones, risk release of pollutants related to Project inundation; or
- ▶ conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

ISSUES NOT DISCUSSED FURTHER

Although the Project site is within a 200-year floodplain, it is not located within any tsunami or seiche zones. Potential flood and contamination hazards associated with these events are not further addressed in this EIR.

ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Impact 3.9-1: Violate Any Water Quality Standards or Waste Discharge Requirements or Substantially Degrade Surface Water or Groundwater Quality during Construction Activities

Project site construction activities and off-site improvements would consist of ground-disturbing and excavation activities that would expose soils to wind and water erosion and potentially transport pollutants to surface water bodies, particularly during storm events. In addition, accidental spills of construction-related fuels, oils, hydraulic fluid, and other hazardous substances may contaminate stormwater flows, resulting in the potential degradation of surface water quality downstream of the disturbance area. Excavation activities may encounter groundwater and require dewatering activities that may directly affect groundwater quality. This may affect the water quality of Stone Lakes and the Sacramento River and groundwater beneath the construction sites. The potential for erosion and transport of sediment and pollutants would be addressed through compliance with City Municipal Code Chapter 16.44, which requires all projects to implement erosion control measures to minimize erosion, sediment, dust, and other pollutant runoff created by improvement activities. Additionally, any project that disturbs more than 1 acres of soil would be required to obtain coverage under the Construction General NPDES permit, including completion of a SWPPP. With compliance with these existing regulations, the potential for construction activities related to both on-site and off-site improvements to violate water quality standards or degrade surface water or groundwater would be a **less-than-significant** impact.

Development of the Project site would require multiple phases and seasons of construction activities that involve vegetation removal, grading, excavation, temporary stockpiling of soils, infrastructure installation, and building construction. Off-site improvements for the Project that include construction of an emergency left-turn pocket on Elk Grove Boulevard, SMUD distribution and substation site improvements, and wastewater conveyance facilities would involve similar construction activities. Implementation of the Project would decrease the total area of impervious coverage from 75.8 percent (under existing conditions) to 70.2 percent through conversion of exiting pavement to pervious or landscaped areas, which may decrease the rate of stormwater runoff. However, construction may expose soils to wind and water erosion and potentially allow transport of pollutants to surface water bodies, particularly during storm events. As discussed in the "Environmental Setting" section, high groundwater may exist in portions of the Project site during construction, and dewatering may be required for construction of foundations and basements. Groundwater pumped from excavation sites would contain high levels of sediment that may adversely affect water quality allowed to reach surface waters. Furthermore, accidental spills of construction-related fuels, oils, hydraulic fluid, and other hazardous substances may contaminate stormwater flows, resulting in the potential degradation of surface water quality downstream of the disturbance area. Construction activities have the potential to adversely affect the water quality of Stone Lakes and the Delta and that of groundwater beneath the construction sites.

Ground Disturbance

During construction, water quality would be protected through compliance with the discrete permits and stormwater management requirements consistent with all federal, State, and local laws applicable at the time. Improvement plans provided to the City prior to authorization for each construction phase would be required to conform to provisions of Municipal Code Chapter 16.44 (Land Grading and Erosion Control) and Chapter 15.12 (Drainage Control) that are in effect at the time of submittal. Because development phases of the Project would disturb more than 1 acre of soil, each construction phase would be subject to the Statewide Construction General NPDES Permit from the Central Valley RWQCB.

Compliance with these requirements would include the preparation of a SWPPP. A SWPPP has two major objectives: (1) to help identify the sources of sediment and other pollutants that affect the quality of stormwater discharges and (2) to describe and ensure the implementation of BMPs to reduce or eliminate sediment and other pollutants in stormwater and nonstormwater discharges. The SWPPP would be prepared by a qualified SWPPP practitioner and/or a qualified SWPPP developer and would identify water quality controls consistent with the Central Valley RWQCB requirements and would ensure that runoff quality meets WQOs and maintains the beneficial uses of the plan area streams. The SWPPP would describe the site controls, erosion and sediment controls, means of waste disposal, implementation of approved local plans, control of postconstruction sediment and erosion control measures, and management controls unrelated to stormwater. The BMPs identified in the SWPPP would be implemented during all site development activities. The SWPPP would have the following required elements:

- ▶ Temporary BMPs would be identified to prevent the transport of earthen materials and other construction waste materials from disturbed land areas, stockpiles, and staging areas during periods of precipitation or runoff. BMPs may include using filter fences, fiber rolls, erosion control blankets, mulch (such as wood chips), temporary drainage swales, settling basins, and other erosion-control methods.
- ▶ Temporary BMPs would be identified to prevent the tracking of earthen materials and other waste materials from the Project site to off-site locations. BMPs may include using stabilized points of entry/exit for construction vehicles/equipment and designated vehicle/equipment rinse stations, and sweeping.
- ▶ Temporary BMPs would be identified to prevent wind erosion of earthen materials and other waste materials from the Project site. BMPs may include routine application of water to disturbed land areas and covering of stockpiles with plastic or fabric sheeting.
- ▶ A spill prevention and containment plan would be prepared and implemented to protect surface and groundwater resources. Project contractors would be responsible for storing on-site materials and implementing temporary BMPs capable of capturing and containing pollutants from fueling operations, fuel storage areas, and other areas used for the storage of hydrocarbon-based materials. This would include maintaining materials on-site (such as oil-absorbent booms and sheets) for the cleanup of accidental spills, using drip pans beneath construction equipment, training site workers in spill response measures, immediately cleaning up spilled materials in accordance with directives from the Central Valley RWQCB, and properly disposing of waste materials at an approved off-site location that is licensed to receive such wastes.
- ▶ Temporary BMPs would be identified to capture and contain pollutants generated by concrete construction, including using lined containment for rinse water to collect runoff from washing of concrete delivery trucks and equipment.
- ▶ Protective fencing would be used to prevent damage to trees and other vegetation that would remain after construction, including tree protection fencing and individual tree protection, such as wood slats strapped along the circumference of trees.
- ▶ Temporary BMPs would be identified for the containment and removal of drilling spoils generated from construction of bridge foundations and abutments.
- ▶ Daily inspection and maintenance of temporary BMPs would be required. The prime contractor would be required to maintain a daily log of temporary construction BMP inspections and keep the log on-site during Project construction for review by the Central Valley RWQCB.

- ▶ Tree removal activities, including the dropping of trees, would be confined to the construction limit boundaries.
- ▶ Construction boundary fencing would be required to limit disturbance and prevent access to areas not under active construction.
- ▶ Postconstruction BMPs and the BMP maintenance schedule would be identified. Postconstruction BMPs must address water quality, channel protection, overbank flood protection, and extreme flood protection.
- ▶ Disturbed areas would be revegetated with approved native seed mixes.
- ▶ Daily visual monitoring of stormwater and non-stormwater discharges would be required. Additional effluent monitoring for pH and turbidity may be required for some sites.

The SWPPP described above would be submitted to the City and the Central Valley RWQCB in conjunction with submission of the improvement and grading plans and NPDES permit coverage. City staff would review the SWPPP against the requirements of the Municipal Code. During construction, City staff would conduct regular inspections of the site to verify that effective stormwater BMPs are implemented and maintained.

Dewatering

Dewatering (removal of groundwater from an excavation) may be required for construction of foundations and basements at the Project site. Construction of basements at the Project site would require excavation to 20 feet below the surface, and the off-site electrical and wastewater improvements may involve trenching to 12-foot depths. The estimated volume of dewatering waste produced and the design of infiltration basins, filtration systems, and other BMPs would be developed prior to the final design phase of the Project. The potential effects of dewatering discharge would be reduced through compliance with existing Central Valley RWQCB regulation. The Construction General NPDES Permit covers incidental removal of water from excavations during construction; however, if groundwater must be continually removed from a construction site, the Project would need additional coverage under the Central Valley RWQCB NPDES permit for Limited Threat Discharges to Surface Water (Order No. R5-2016-0076, NPDES No. CAG995002). This permit encourages disposal of wastewater on land where possible and requires applicants to evaluate land disposal as a first alternative. The Limited Threat Discharges Permit contains a comprehensive set of effluent limitations that must be met by all discharges to surface water through the implementation of site-specific BMPs. These include:

- ▶ limitations on the amount of heavy metals, fertilizers, pesticides, hydrocarbons, volatile organic compounds, and industrial contaminants;
- ▶ protections against negative physiological responses in human, plant, animal, or aquatic life;
- ▶ limitations on temperature, salinity, and pH;
- ▶ protections for color, taste, and odor;
- ▶ restrictions on oil and grease content;
- ▶ protection of dissolved oxygen levels,
- ▶ limitations on suspended sediments and other suspended and settleable materials; and
- ▶ restrictions on turbidity so that the discharge shall not exceed:
 - more than 1 Nephelometric Turbidity Unit (NTU) where natural turbidity is between 1 and 5 NTUs,
 - more than 20 percent where natural turbidity is between 50 and 100 NTUs, and
 - more than 10 percent where natural turbidity is greater than 100 NTUs.

If daily inspections or monitoring shows there is a reasonable potential for the Project's dewatering discharge to exceed these limits or any other WQOs, the discharge must be immediately stopped. As required by both the NPDES California Construction General and General Dewatering Permits, filtration devices and systems would be provided to remove pollutants and suspended sediments generated during dewatering activities. A dewatering plan approved by

the Central Valley RWQCB would be prepared as a component of the SWPPP, and all dewatering waste discharged to surface water would meet the applicable WQOs (refer to beneficial uses and WQOs described above). All dewatering associated with the proposed Project would be required to comply with these conditions and protect the water quality of Stone Lakes and the Sacramento River.

Summary

Construction activities for Project implementation would result in ground disturbance and dewatering for deep excavation. With proper implementation, the water quality protections built into NPDES and City permitting would reduce the potential for construction activities and construction dewatering to adversely affect water quality. Therefore, the potential for implementation of the Project to violate water quality standards or degrade surface water or groundwater quality would be **less than significant**.

Mitigation Measures

No mitigation is needed in addition to requirements associated with NPDES permitting and other stormwater management requirements consistent with the City Municipal Code.

Impact 3.9-2: Violate Any Water Quality Standards or Substantially Degrade Surface Water or Groundwater Quality from Polluted Stormwater Runoff

Development can increase the rate of runoff and eliminate storage and infiltration that would naturally occur along drainage paths. Runoff from developed areas can carry pollutants and sediment, which can be potentially harmful to downstream receiving waters. Implementation of the Project would decrease the total area of impervious coverage from 75.8 percent (under existing conditions) to 70.2 percent through conversion of exiting pavement to pervious or landscaped areas. Additionally, the Project would implement LID measures to prevent the contamination of stormwater and infiltrate the majority of stormwater on-site. All pollution control measure would be designed in accordance with the Sacramento Region Stormwater Quality Design Manual and enforced through the City permitting process. Therefore, the potential for on-site improvements to generate contaminated stormwater runoff or adversely affect surface water and groundwater would be **less than significant**.

The amount of stormwater runoff generated from an area is affected by development through conversion of vegetated or other pervious surfaces to impervious surfaces and by the development of drainage systems that connect these impervious surfaces to streams or other water bodies. In this way, development can increase the rate of runoff and eliminate storage and infiltration that would naturally occur along drainage paths. As water runs off the land surface, it collects and carries materials and sediment, which can be potentially harmful to downstream receiving waters. Although the runoff from rooftops and similar imperious surfaces would be relatively free of contaminants, the runoff generated by the road and parking lot areas of the Project would contain sediment, crushed road abrasives, nutrients, organic compounds, trash and debris, oxygen-demanding substances, oil and grease, fluids from accidents and spills, landscape care products, and metals. These contaminants may affect the quality of surface waters if stormwater runoff is not captured and infiltrated. Additionally, runoff from impervious surfaces can become concentrated, causing erosion and increased sediment transport.

The estimated existing imperviousness of the entire site is 75.8 percent and the estimated imperviousness for the entire site at buildout would be 70.2 percent (Wood Rodgers 2020).

The Project site is within the boundary of the Phase 1 MS4 permit for the City and other co-permittees. In compliance with this MS4 permit, General Plan Policies NR-3-2, NR-3-3, and LU-5-12, and Municipal Code Chapter 15.12, the City must require projects within the permit boundary to implement LID practices and BMPs to control stormwater runoff and protect water quality. LID uses site design and stormwater management to maintain the site's predevelopment runoff rates and volumes. The goal of LID is to mimic a site's predevelopment hydrology by using design techniques that infiltrate, filter, store, evaporate, and detain runoff close to the source of rainfall. LID practices and standards are described in the 2018 Sacramento Region Stormwater Quality Design Manual.

The first priority for LID development is to control potential sources of pollution and prevent the contamination of rainwater runoff. This is referred to as source control and is accomplished through proper site design. The Stormwater Quality Design Manual requires the following source control measures for all projects:

- ▶ using efficient irrigation that does not generate runoff or overspray;
- ▶ protecting fueling areas to isolate spills and prevent contamination of runoff;
- ▶ incorporating natural depressions, rain gardens, or swales into the design to maximize natural water storage and infiltration;
- ▶ designing loading and unloading areas to minimize the chance of leaks and to keep any spilled or leaked materials out of the storm drain system;
- ▶ designing outdoor work areas, outdoor storage areas, and waste management and recycling storage areas to prevent rain, runoff, and other site water from washing pollutants into the storm drainage system;
- ▶ locating and designing vehicle wash areas so that wash water does not enter the storm drain system; and
- ▶ permanently marking storm drain inlets with "no dumping" messages.

The Project shall incorporate the source control measures listed above. In addition, Project raingardens (Appendices B and H) would be sized to capture the 95th percentile of regional or local rainfall events (or all but the top 5 percent of storm events). With the incorporation of these LID measures, stormwater quality would be protected and the majority of the runoff generated by the Project would be captured and infiltrated on-site. Stormwater runoff that exceeds the capacity of on-site infiltration systems would be directed to public storm drainage facilities and the existing water quality mechanical filtration vaults (Appendices B and H). Overall, the drainage study prepared for the Project found that, at buildout, the Project would reduce runoff flow in downstream storm drain facilities during the 100-year storm event by 7 cubic feet per second (Wood Rodgers 2020).

The drainage system for each phase of development would be reviewed through the City permitting process. Before grading and building permit approvals, a drainage report would be prepared and submitted for City review. All treatment BMPs (such as raingardens or vegetated swales) would be inspected and maintained in accordance with a maintenance plan that would be prepared with the final drainage plan. Maintenance activities included in the plan would meet the standards of the Sacramento Region Stormwater Quality Design Manual.

Implementation of the Project would result in a 5-percent decrease in the total area of impervious coverage. Additionally, the LID measures discussed above would prevent the contamination of stormwater and infiltrate the majority of stormwater on-site. All pollution control measure would be designed in accordance with the Sacramento Region Stormwater Quality Design Manual and enforced through the City permitting process. Therefore, the potential for contaminated stormwater runoff to adversely affect surface water and groundwater would be **less than significant**.

Mitigation Measures

No mitigation is required beyond LID measures required through the MS4 permit and described in the 2018 Sacramento Region Stormwater Quality Design Manual and Municipal Code Chapter 15.12. LID measures are provided in Table 5 of Appendix H.

Impact 3.9-3: Substantially Decrease Groundwater Supplies or Interfere Substantially with Groundwater Recharge Such That the Project May Impede Sustainable Groundwater Management

Implementation of the Project would reduce the total extent of impervious area at the site and would allow for increased recharge of shallow groundwater systems. Although implementing the Project would increase water demand relative to existing conditions, this change represents a small percentage of the service volume for the Laguna Vineyard service area and would not substantially decrease groundwater supplies or impede sustainable groundwater management. This impact would be **less than significant**.

Impervious surfaces can intercept rainwater and inhibit infiltration that would recharge local groundwater systems. Over time, this can lead to declines in aquifer levels. This effect is especially pronounced in urban areas where stormwater runoff from large and continuous impervious areas is collected and routed away from the site through the storm drain system. As discussed in Impact 3.9-2, the Project would reduce the total area of impervious coverage at the site, and stormwater systems would be designed to infiltrate all precipitation from the 95th percentile storm on-site. These changes would improve recharge of local shallow groundwater systems.

Groundwater supply can also be affected by water demand if the water supplier relies on groundwater sources. As described in Section 3.9.2, "Environmental Setting," the Project site is served by SCGA through the Laguna Vineyard water system. SCWA, as a member of the SCGA, actively participates in implementation of a Groundwater Management Plan that was developed to maintain a safe and sustainable groundwater resource within the Central Basin. Subbasin operations from 2005 through 2018 have not exceeded yield limits established in the Water Forum Agreement (SCGA 2019). Although SCGA must conduct further study to confirm that the Water Forum Agreement yield limit is sufficient to protect groundwater resources from overdraft (DWR 2019), the limit and the work of Water Forum members over the past two decades has prevented significant overdraft of the groundwater basin.

At buildout, the total annual water demand for the Project would be 325.7 acre-feet per year. Although the projected demand is a substantial increase from the existing demand (estimated at approximately 24.6 acre-feet per year), this increase represents less than a 1.6-percent increase in the 2015 service volume of the Laguna Vineyard south service area. The Laguna Vineyard water system relies primarily on groundwater, and it is possible that this increase in demand would be met through increased groundwater pumping, particularly in dry years. However, although DWR considers the South American subbasin to be a high-priority basin, it is not critically overdrafted or adjudicated (SCWA 2019). Additionally, SCWA has determined that the Project aligns with the planned growth considered in the 2015 *Urban Water Master Plan* and that it can provide service to the Project while honoring the Water Forum Agreement and Groundwater Management Plan (SCWA 2019). Additionally, water demand within SCWA's service area is declining even as new service connections are added due to water efficiency requirements (Grinstead, pers. comm. 2020). Furthermore, in response to the DWR's decision and the forthcoming Groundwater Sustainability Plan, SCWA anticipates the potential purchase of additional surface water rights rather than an increase in groundwater pumping to meet dry-year demand in its service area (Grinstead, pers. comm., 2020).

As described above, implementation of the Project would result in a decrease in impervious surface area at the site and would allow for increased recharge of shallow groundwater systems. Although implementing the Project would increase water demand at the site relative to existing conditions, the change represents a small percentage of the service volume for the area and would not substantially decrease groundwater supplies or impede sustainable groundwater management. This impact would be **less than significant**.

Mitigation Measures

No mitigation is required.

Impact 3.9-4: Increase Localized Flooding Risk Because of Changes in Site Drainage

Implementation of the Project would result in a 5-percent decrease in the total area of impervious coverage. Additionally, the Project would incorporate LID measures to capture precipitation from the 95th percentile storm event on-site. Stormwater runoff that exceeds that capacity of on-site stormwater systems would be directed to existing City stormwater infrastructure. LID measures would reduce peak stormwater flows below existing flow conditions. This impact would be **less than significant**.

The volume and rate of stormwater runoff generated from an area is affected by development through conversion of vegetated or other pervious surfaces to impervious surfaces and by the development of drainage systems that connect these impervious surfaces to streams or other water bodies. In this way, development can increase the rate of runoff and eliminate storage and infiltration that would naturally occur along drainage paths. As discussed in Impact 3.9-2, implementation of the Project would result in a 5-percent decrease in the total area of impervious coverage. Additionally, the Project would incorporate LID measures, which are included in the stormwater quality management plan under the MS4 permit, to capture precipitation from the 95th percentile storm event on-site. Stormwater runoff that exceeds that capacity of on-site stormwater systems would be directed to existing City stormwater infrastructure. As shown in Table 5 in Appendix H, Project LID features would reduce peak stormwater flows below existing flow conditions at all off-site drainage connection points (1- to 14-cubic-feet-per-second reductions from existing flow conditions). For the same reasons discussed above in Impact 3.9-2, implementation of the Project would have a **less-than-significant** impact relative to drainage and localized flooding.

Mitigation Measures

No mitigation is required beyond LID measures required through the MS4 permit and described in the 2018 Sacramento Region Stormwater Quality Design Manual. LID measures are provided in Table 5 of Appendix H.

Impact 3.9-5: Impede or Redirect Flood Flows

Implementation of the Project would result in modification of General Plan Policy ER-2-3 and Municipal Code Section 23.42.040.D to allow construction of essential health care facilities in the 200-year floodplain consistent with State law. The Project would alter the built environment within the 200-year floodplain but would comply with General Plan Policy ER-2-2, prohibiting construction that would result in new or increased flooding impacts on adjacent areas, and General Plan Policy ER-2-8, which requires that each project demonstrate flood protection compliance. The proposed alteration of the Project site is expected to result in negligible changes in surface elevation (0.01 foot to 0.10 foot) and would not result in substantial expansion of the 200-year floodplain. Additionally, any future essential health care facilities located in the 200-year floodplain as a result of the proposed amendment to General Plan Policy ER-2-3 would be required to meet the protective standards of General Plan Policies ER-2-2 and ER-2-8. This impact would be **less than significant**.

As described in Chapter 2, "Project Description," the Project proposes to amend General Plan Policy ER-2-3 and Municipal Code Section 23.42.040.D to allow construction of essential health care facilities in the 200-year floodplain Citywide (consistent with State law). These changes would not alter General Plan Policy ER-2-2, which prohibits construction that would result in new or increased flooding impacts on adjoining or on upstream or downstream areas, or General Plan Policy ER-2-8, which requires that each project demonstrate flood protection compliance.

The Project buildings would elevate first-floor habitable space outside of the 200-year floodplain to allow the Project to function during a flooding event. The CNU Medical Center Project Drainage Study (Wood Rodgers 2020) conducted modeling to determine whether the Project would alter the 200-year flood surface water elevations under three scenarios as compared to floodplain conditions identified in a previous analysis for the City by MBK Engineers (MBK). The results of the modeling show that the maximum water surface elevation increased by 0.01 foot under the three scenarios (Appendix H). Since the modeling results are reported to the nearest 0.1 foot in the MBK report, and the new values still round to the same values reported in MBK's report, these potential changes in floodplain elevation are determined negligible. Based on the elevation of Project building habitable space from the 200-year

floodplain and results of the 200-year floodplain surface water elevation analysis, this Project would be consistent with the 200-year floodplain provisions of General Plan Policy ER-2-8 and Municipal Code Section 23.42.040.E. Additionally, any future essential health care facilities located in the 200-year floodplain as a result of the proposed amendment to General Plan Policy ER-2-3 would be required to meet the protective standards of General Plan Policies ER-2-2 and ER-2-8 as described above. Thus, the potential for the development of the Project or the proposed General Plan policy and Municipal Code changes to result in impeded or redirected flood flows would be **less than significant**.

Mitigation Measures

No mitigation is required.

Impact 3.9-6: Release of Pollutants Due to Inundation by Floodwaters

The Project site is located within the 200-year floodplain, and proposed on-site improvements would include the development of new industrial facilities (such as the maintenance yard and central plant), which would house fuels, lubricants, and industrial chemicals not typical of the existing commercial uses at the site. The potential for 200-year floodwaters to be contaminated by pollutants released from the Project site would be potentially significant. Implementation of Mitigation Measure 3.9-6 would ensure that Project fuel and chemical storage is provided above the 200-year floodplain or in dry floodproofed locations and would reduce the risk of water quality impacts to a **less-than-significant** level.

The Project site is located within the 200-year floodplain and would be subject to inundation by up to 10 feet of water in the event of a levee or dam failure (City of Elk Grove 2019b). The majority of the new structures proposed for the site would be similar to existing on-site uses, which would include office and administrative buildings, parking structures, and retail shops. Of the structures proposed for the site, new potential sources of pollution during flood events would include the central plant site, which would house fuels, lubricants, and industrial chemicals. The central plant, emergency generators, chiller, boiler, and maintenance yard would be located 12 feet above the current grade on the second floor, and would be elevated out of the 200-year flood surface water elevation. However, storage of diesel fuel for the emergency generators would be underground and within the 200-year floodplain. The release of diesel fuel and other related chemicals during a flood may affect water quality. Implementation of Mitigation Measure 3.9-6 would ensure that Project fuel and chemical storage is provided above the 200-year floodplain or in dry floodproofed locations and would avoid the water quality impacts of floodwaters. Thus, this impact would be reduced to a **less-than-significant** level.

Mitigation Measures

Mitigation Measure 3.9-6: Elevate Generator, Fuel, and Chemical Storage above the 200-Year Floodplain

Generator fuel tanks shall be protected by dry floodproofing consistent with American Society of Civil Engineers (ASCE) standard ASCE 24, *Flood Resistant Design and Construction*. Other chemical storage shall be elevated outside of the 200-year floodplain. All Project building fuel and chemical storage (excluding generator fuel) shall be shown in building plans prior to issuance of building permits. The City Development Services Department will verify compliance with this mitigation measure.

Significance after Mitigation

Less than significant.

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3.10 LAND USE AND PLANNING

This land use analysis evaluates the consistency of the Project with applicable land use plans and policies. The physical environmental effects associated with the Project, many of which pertain to issues of land use compatibility (e.g., noise, aesthetics, air quality), are evaluated in other sections of Chapter 3 of this Draft EIR.

Comments received in response to the NOP state that the Draft EIR should address consistency with existing general plans, policies, and codes, including *Elk Grove General Plan* policies regarding development allowed in flood hazard zones, and policies regarding employment centers. Commenters also noted that the Draft EIR should address Elk Grove Municipal Code 23.42.040, regarding construction in flood hazard zones; the Project's compatibility with the nearby Lakeside Master Planned Community; and its compatibility with the nearby Stone Lakes National Wildlife Refuge (NWR). The reader is referred to Section 3.9, "Hydrology and Water Quality," for an analysis of impacts associated with alteration of the 200-year floodplain.

3.10.1 Regulatory Setting

FEDERAL

No federal plans, policies, regulations, or laws related to land use are applicable to the Project site.

STATE

California Building Code

The California Building Code (CBC) (CCR Title 24) is based on the International Building Code, but it reflects California conditions and has more detailed or more stringent regulations than the International Building Code. The California Office of Statewide Health Planning and Development Facilities Development Division is responsible for building code enforcement for hospitals. Specific minimum seismic safety and structural design requirements are set forth in Chapter 16 of the CBC. The CBC identifies seismic factors that must be considered in structural design. Chapter 18 of the CBC regulates the excavation of foundations and retaining walls, while Chapter 18A regulates construction on unstable soils, such as expansive soils and areas subject to liquefaction. The reader is referred to Section 3.6, "Geology and Soils," for a further description of CBC standards that apply to hospitals.

LOCAL

2020 Sacramento Area Council of Governments Metropolitan Transportation Plan/Sustainable Communities Strategy

The Sacramento Area Council of Governments (SACOG) is designated by the federal government as the Metropolitan Planning Organization for the Sacramento region, which requires SACOG to maintain a regional transportation plan that must be updated every 4 years in coordination with each local government. Placer and El Dorado Counties are different in this arrangement in that each county has its own State designation as a Regional Transportation Planning Agency responsible for developing its own transportation plan. SACOG is the Regional Transportation Planning Agency for Sacramento, Sutter, Yolo, and Yuba Counties. SACOG works in coordination with the Placer County Transportation Planning Agency and the El Dorado County Transportation Commission to ensure consistency between these two county-specific plans and the broader regionwide plan.

The Metropolitan Transportation Plan/Sustainable Communities Strategy (MTP/SCS) is required to be a 20-year multimodal transportation plan that is financially feasible, achieves health standards for clean air, and addresses Statewide climate goals. The MTP/SCS land use forecast identifies the general location of different types of land uses, residential densities, employment intensities, and natural resource areas.

The Project area is located within the Established Community type identified in the 2020 MTP/SCS. The 2020 MTP/SCS forecasts about 6,290 new housing units and 8,500 new employees in the Established Community Type in the City.

Elk Grove General Plan

The City's current General Plan was adopted in 2019 and consisted of a comprehensive update of the previous General Plan. The General Plan goals, policies, and standards are based on the General Plan Vision Statement and supporting principles.

The City's Vision Statement describes the values and aspirations for Elk Grove in the future:

The City of Elk Grove is...

A great place to make a home, a great place to work, and a great place to play. Our community is diverse, healthy, safe, and family-oriented, with thriving schools and plentiful parks, shops, and places to work. Agriculture, rural homes, and urban life flourish together. Our natural resources, including water and open spaces, are protected and offer a variety of recreational opportunities. Community members travel easily by automobile, by bicycle, on foot, or using transit. The City is proactive in making daily life healthy and sustainable—considering the needs of future generations while protecting what is valued today.

Well-maintained infrastructure and the right mix of services and amenities draw new and dynamic businesses and development to Elk Grove. Development is guided to ensure responsible growth and opportunities for a diversity of individuals who call Elk Grove home.

The nine supporting principles support the Vision Statement:

- ▶ Regional Goals & Influence – Our Regional Neighbors Know Us & Our Contributions
- ▶ Infill Development & Outward Expansion – Development Fills in the Gaps & Expansion Occurs with Purpose
- ▶ Economic Vitality – Our Economy is Diverse & Balanced & Enhances Quality of Life
- ▶ Community Identity – City Core, Heritage & Well-Known Neighborhoods
- ▶ Rural Areas – Protecting Our Farming Heritage & Rural Life
- ▶ Open Space & Resource Management – Outdoor Recreation Is Right Outside Our Door
- ▶ Multimodal & Active Transportation – Moving Around Anywhere, Any Way
- ▶ Sustainable & Healthy Community – Clean, Green Practices & Healthy Living
- ▶ Coordinated Services, Technology, & Infrastructure –Services for the Needs of All Residents

The Project site is located in an infill area as denoted by Figure 4-1, Potential Activity and Infill Areas in Elk Grove, in the General Plan (City of Elk Grove 2019). It is not located in any community plan or Land Use Policy Area, Special Planning Area, or Specific Plan Area (City of Elk Grove 2019).

The following General Plan land use–related policies are applicable to the Project:

- ▶ **Policy LU-1-2:** Foster development patterns that will achieve a complete community in Elk Grove, particularly with respect to increasing jobs and economic development and increasing the City's jobs-to-employed resident ratio while recognizing the importance of housing and a resident workforce.
- ▶ **Policy LU-1-9:** Encourage employee-intensive commercial and industrial uses to locate within walking distance of fixed transit stops. Encourage regional public transit providers to provide or increase coordinated services to areas with high concentrations of residents, workers, or visitors.

- ▶ **Policy LU-2-1:** Promote a greater concentration of high-density residential, office commercial or mixed-use sites and the population along identified transit corridors and existing commercial corridors, in activity centers, and at other appropriate locations.
- ▶ **Policy LU-2-4:** Require new infill development projects to be compatible with the character of surrounding areas and neighborhoods, support increased transit use, promote pedestrian and bicycle mobility, and increase housing diversity.
- ▶ **Policy ED-2-1:** Continue to improve Elk Grove's jobs/housing ratio by expanding local employment opportunities, with an emphasis on attracting jobs in sectors and industries that are well matched for the skills of the local workforce.
- ▶ **Policy ED-2-2:** Maximize the use of nonresidential land for employment-generating and revenue-generating uses.

City of Elk Grove Zoning Code

Title 23 of the Municipal Code carries out the policies of the Elk Grove General Plan by classifying and regulating the uses of land and structures within the City, consistent with the General Plan. Title 23 is adopted to protect and to promote the public health, safety, comfort, convenience, prosperity, and general welfare of residents and businesses in the City. More specifically, the purposes of this Title are to:

- A. Provide standards and guidelines for the orderly growth and development of the City that will assist in protecting the characteristics and community identity of Elk Grove;
- B. Create a comprehensive and stable pattern of land uses upon which to plan transportation, water supply, sewerage and other public facilities and utilities;
- C. Conserve and protect the City's natural features such as creeks, oak trees, and historic and environmental resources;
- D. Minimize automobile congestion by promoting pedestrian-oriented development, safe and effective traffic circulation, and adequate off-street parking facilities; and
- E. Ensure compatibility between residential and nonresidential development and land uses.

3.10.2 Environmental Setting

PROJECT SITE

The site is developed with buildings, a parking lot, and landscaping except for an approximately 0.5-acre vacant lot on the southwest corner of West Taron Court and West Taron Drive and an approximately 0.75-acre vacant lot (132-2480-007) along West Taron Drive north of Riparian Court. A total of nine structures encompassing approximately 243,837 sq. ft. of building space currently occupy the Project site (Figure 2-1). The 109,300-sq. ft. two-story School of Medicine building at 9700 West Taron Drive and the 76,000-square-foot office building at 9650 West Taron Drive are located on the portion of the site that currently has a General Plan land use designation of Light Industrial (LI) and is zoned Industrial-Office Park (MP). The remaining buildings (2501–2619 West Taron Drive) on the site are designated Community Commercial (CC) in an area zoned General Commercial (GC).

Current uses on the Project site include the existing CNU Medical College and Pharmacy College, an office building (ALLDATA), a brewery, an animal hospital, several eating establishments, and other commercial and retail uses. Directly adjacent to the site are a gas station, restaurants, single family residences, and a church. Roadway access to the Project site is provided from West Taron Drive and Riparian Drive, and West Taron Court provides access to the interior of the site.

A description of the visual character of the Project site and the surrounding area is provided in Section 3.1, "Aesthetics."

SURROUNDING LAND USES

Properties south and west of the Project site are designated as Low Density Residential in the General Plan, are zoned for Low Density Residential (RD-7), and are developed as such. The vacant property at the northeast corner of West Taron Drive and Riparian Drive is designated Medium Density Residential (MDR) and zoned Medium Density Residential (RD-15) and CC along Elk Grove Boulevard. There is Chevron gas station on the southeast corner of West Taron Drive and Elk Grove Boulevard. I-5 borders the western side of the Project site.

The NWR is located within 500 feet of the Project site west of I-5. It is visited by the public for birdwatching, canoeing and kayaking, educational activities, guided tours, and hunting. It consists of extensive open views of grasslands and wetland features and distant views of riparian habitat conditions along the Sacramento River. Facilities used by NWR visitors near the Project site (approximately 1.20 miles to the west) include the Lewis Trail Viewing Platform and floating dock for canoe and kayak use. The approved refuge for Stone Lakes NWR—the area within which the U.S. Fish and Wildlife Service (USFWS) is authorized to acquire, protect, and manage land—encompasses 17,640 acres. Currently within the approved boundary, USFWS owns or manages 6,550 acres, which are composed of lands obtained through cooperative agreements, fee title ownership, and conservation easements.

The properties north of the Project site, along Harbour Point Drive, are zoned GC and High Density Residential (HDR-25) and are developed with a hotel, commercial uses, and apartments. The area north of Maritime Drive is zoned Low Density Residential (RD-5) and is developed with single-family residences. Residences along Maritime Drive are oriented with backyards along Maritime Drive.

3.10.3 Impacts and Mitigation Measures

METHODOLOGY

Evaluation of potential land use impacts is based on a review of the planning documents pertaining to the Project area, including the City General Plan and the City Municipal Code Title 23 (Zoning). The analysis discusses whether the Project would be consistent with applicable land use plans and policies that were adopted for the purpose of avoiding or mitigating an environmental effect. Land use policies pertain to the type, location, and physical form of new development. For this analysis, policies “adopted for the purpose of avoiding or mitigating an environmental effect” are considered those that, if implemented and adhered to, would avoid or mitigate physical impacts on the environment. For each potential impact, the analysis compares the impact to the standards of significance listed below and determines the impact’s level of significance under CEQA. The reader is referred to the other sections of this EIR for evaluations of Project consistency with City and State policies and regulations related to environmental issue areas beyond land use.

THRESHOLDS OF SIGNIFICANCE

A land use impact would be significant if implementation of the Project would:

- ▶ physically divide an established community or
- ▶ cause a significant environmental impact because of a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.

ISSUES NOT DISCUSSED FURTHER

As identified in Chapter 2, “Project Description,” the Project would include off-site improvements: an emergency left-turn pocket on Elk Grove Boulevard, Sacramento Municipal Utility District (SMUD) distribution and substation site improvements, and wastewater conveyance facilities. These off-site improvements would occur within existing roadways and/or easements and would not create a new physical feature or land use that would conflict with City land use policies or physically divide an established community in the City.

ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Impact 3.10-1: Physically Divide an Established Community

The Project would be contained within an existing developed site bounded by local roadways and I-5. No Project features would create a new physical division of the residential areas east and south of the site. The Project would have **no impact**.

The Project site is located at the western edge of the City and is physically bounded by West Taron Drive, Elk Grove Boulevard, and I-5. Residential communities are located immediately south and east of the site. The Project site is developed with commercial and office uses. As shown in Figures 2-2 and 2-5, implementing the Project would not result in a change in footprint or an expansion of these types of uses beyond the existing site boundaries and therefore would not create a new physical division of adjacent surrounding residential areas.

As shown in Figure 2-16, the Project would provide a Class I multipurpose trail along the eastern border of the Project site adjacent to West Taron Drive with connections to West Taron Drive; secure bicycle parking areas in at least four locations throughout the Project site; and pedestrian walkways throughout the site connecting the site to adjacent neighborhoods and recreational facilities and Class II bike lanes on Elk Grove Boulevard, West Taron Drive, and Riparian Drive. These improvements would improve existing bicycle and pedestrian connectivity in the area.

Because there would be no effect on the cohesiveness of the existing community, the Project would have **no impact**.

Mitigation Measures

No mitigation is required.

Impact 3.10-2: Cause a Significant Environmental Impact Because of a Conflict with any Land Use Plan, Policy, or Regulation Adopted for the Purpose of Avoiding or Mitigating an Environmental Effect

Implementation of the Project would include General Plan amendments, rezoning, and text changes to Municipal Code Section 23.42.040.D. These changes to the General Plan and Municipal Code would not alter or conflict with General Plan land use policy provisions. With implementation of Mitigation Measure 3.10-1, the Project would be consistent with General Plan policies and would comply with City Municipal Code requirements that address environmental effects from development. The Project would also be consistent with the SACOG 2020 MTP/SCS. This impact would be **less than significant** with mitigation incorporated.

As described in Chapter 2, "Project Description," implementation of the Project would involve General Plan amendments and rezoning to change the allowed land uses to reflect the proposed medical center uses. The Project also involves amending General Plan Policy ER-2-3 and Municipal Code Section 23.42.040.D to allow construction of an essential health care facility in the 200-year floodplain. These changes to the General Plan and Municipal Code would not alter or conflict with General Plan land use policy provisions because they would not alter General Plan Policy ER-2-2, which prohibits construction that would result in new or increased flooding impacts on adjoining or on upstream or downstream areas, or General Plan Policy ER-2-8, which requires that each project demonstrate flood protection compliance. The Project would provide expanded employment opportunities near existing transit stops at the Elk Grove Boulevard/West Taron Drive/Harbour Drive intersection and improvements to pedestrian and bicycle facilities consistent with General Plan Policies LU-1-2, LU-1-9, LU-2-1, LU-2-4, ED-2-1, and ED-2-2.

The Project would also be consistent with the following General Plan policies and Municipal Code requirements, which provide environmental mitigation with the application of mitigation measures identified in other sections of this EIR:

- ▶ High-quality, attractive, functional, and efficient development and signage are required (General Plan Policies LU-5-1, LU-5-2, and LU-5-4; Standard LU-5-4a; Policies LU-5-5, LU-5-6, LU-5-7, LU-5-8, and LU-5-9; Standard LU-5-9[a]; Zoning Code Chapters 23.29, 23.54, and 23.62; Section 23.16.027; Design Guidelines 1, 2, 3, 17, 20, 21, 22, 23,

25, 26, 29, 63, and 65 of Chapter 5A; and Design Guidelines 1, 2, 3, 4, 5, 6, 7, 8, 10, 14, and 27 of Chapter 5B). The reader is referred to Impact 3.1-2 in Section 3.1, "Aesthetics," for a detailed analysis.

- ▶ New development are to be integrated with surrounding areas (General Plan Policy LU-5-4; Standard LU-5-4a; Zoning Code Chapters 23.29 and 23.54; Design Guidelines 3 and 6 of Chapter 5A; and Design Guidelines 6, 7, and 8 of Chapter 5B). The reader is referred to Impact 3.1-2 in Section 3.1, "Aesthetics," for a detailed analysis.
- ▶ Utilities are to be concealed (General Plan Policy LU-5-3, Standard LU-5-3a, and Design Guideline 36 of Chapter 5A). The reader is referred to Impact 3.1-2 in Section 3.1, "Aesthetics," for a detailed analysis.
- ▶ Lighting must follow the requirements of Zoning Code Chapter 25.56. The reader is referred to Impact 3.1-3 in Section 3.1, "Aesthetics," for a detailed analysis.
- ▶ Mitigation Measure 3.1-3 would avoid daytime glare through the use of nonreflective materials consistent with City Design Guideline 11 of Chapter 5B. The reader is referred to Impact 3.1-2 in Section 3.1, "Aesthetics," for a detailed analysis.
- ▶ Mitigation Measures 3.2-2a and 3.2-2b would address construction air pollutant emissions consistent with General Plan Policy NR-4-8. The reader is referred to Impact 3.2-2 in Section 3.2, "Air Quality," for a detailed analysis.
- ▶ A Project air quality management plan and Mitigation Measures 3.2-3a and 3.2-3b would be implemented consistent with General Plan Policy NR-4-1 for reductions in operation-related air pollutant emissions. The reader is referred to Impact 3.2-3 in Section 3.2, "Air Quality," for a detailed analysis.
- ▶ Implementation of Mitigation Measure 3.3-4 would provide protection of locally important trees in compliance with City Municipal Code Chapter 19.12: Tree Preservation and Protection. The reader is referred to Impact 3.3-4 in Section 3.3, "Biological Resources," for a detailed analysis.
- ▶ Mitigation Measures 3.4-1a and 3.4-1b would address archaeological resource protection consistent with General Plan Policy HR-2-1. The reader is referred to Impact 3.4-2 in Section 3.4, "Cultural and Tribal Cultural Resources," for a detailed analysis.
- ▶ Mitigation Measure 3.5-1a would ensure that the Project demonstrates Leadership in Energy and Environmental Design Gold certification consistent with the State Energy Action Plan; General Plan Policies NR-6-1, NR-6-6, and NR-6-7; and the City Climate Action Plan (CAP). The reader is referred to Impact 3.5-1 and 3.5-2 in Section 3.5, "Energy," for a detailed analysis.
- ▶ The Project would be consistent with *California's 2017 Climate Change Scoping Plan*, the State's framework to meet the 2030 greenhouse gas (GHG) reduction target. The General Plan also includes Policy NR-6-7, which encourages the use of on-site solar. The Project would be consistent with General Plan Policy NR-6-7 through the installation of on-site solar photovoltaics, which would generate approximately 5,443 megawatt-hours of electricity per year, as described in Mitigation Measure 3.7-1a. The City's 2019 CAP includes strategies to address GHG emissions organized into three categories: Innovative and Efficient Built Environment, Resource Conservation, and Transportation Alternative and Congestion Management. The Project would be consistent with Reduction Measures BE-7 by installing on-site solar, BE-8 by purchasing remaining electricity consumption from SMUD's Greenergy program, and BE-9 by planting a net increase in trees at the Project site. The Project would also be consistent with TACM-3 through the development of a Transportation Demand Management Plan (Mitigation Measure 3.14-1) and with TACM-9 by installing electric vehicle chargers (Mitigation Measure 3.7-1a). The Project would also comply with no net increase in GHG emissions consistent with the requirements of Assembly Bill 900 through implementation of Mitigation Measure 3.7-1a and 3.7-1b. The reader is referred to Impact 3.7-1 and 3.7-2 in Section 3.7, "Greenhouse Gas Emissions and Climate Change," for a detailed analysis.
- ▶ Project hazardous materials would be handled in accordance with California Occupational Safety and Health Administration regulations and consistent with General Plan Policies EM-1-1, ER-1-1, ER-1-2, ER-1-5, and ER-1-7. The hospital would also be listed in the U.S. Environmental Protection Agency's database of facilities that generate, store, or transport hazardous waste pursuant to the Resource Conservation and Recovery Act. The

Sacramento County Environmental Management Department would monitor the proper use, storage, and transport of potentially hazardous materials. Materials storage would follow appropriate regulations for labeling and secondary containment. The reader is referred to Impact 3.8-2 in Section 3.8, "Hazards and Hazardous Materials," for a detailed analysis.

- ▶ Project water quality control measures are consistent with General Plan Policies NR-3-2, NR-3-3, and LU-5-12 and Municipal Code Chapter 15.12. The reader is referred to Impact 3.9-2 in Section 3.9, "Hydrology and Water Quality," for a detailed analysis.
- ▶ The elevation of habitable space in Project buildings above the 200-year floodplain and results of the 200-year floodplain surface water elevation analysis would be consistent with the 200-year floodplain provisions of General Plan Policy ER-2-8 and the applicable findings of Municipal Code Section 23.42.040.E. The reader is referred to Impact 3.9-4 in Section 3.9, "Hydrology and Water Quality," for a detailed analysis.
- ▶ Implementation of Mitigation Measures 3.11-2a, 3.11-2b, and 3.11-2c would ensure that Project operational noise would not exceed City General Plan and Municipal Code noise standards. The reader is referred to Impact 3.11-2 in Section 3.11, "Noise and Vibration," for a detailed analysis.
- ▶ Implementation of Mitigation Measure 3.14-1 would ensure that vehicle travel generated by the Project is reduced consistent with General Plan Policy MOB-1-1 and with the requirements of Assembly Bill 900. The reader is referred to Impact 3.14-1 in Section 3.14, "Transportation," and Appendix C and K for a detailed analysis.

Additionally, although the Project was not yet proposed when the previous MTP/SCS was written, the MTP/SCS assumed construction of a new hospital and an increase in medical employment overall in the City because of the size of the City and the population growth expected. SACOG's recently adopted 2020 MTP/SCS also includes the Project area in the Established Community type. The 2020 MTP/SCS forecasts about 6,290 new housing units and 8,500 new employees in the Established Community Type in the City. In comparison to the 2020 MTP/SCS, the Project would account for approximately 2 percent of total new housing units and approximately 47 percent of total new employees in the Established Community Type in Elk Grove by 2040. Hospitals and medical centers are generally considered public and office uses in SACOG's forecast; therefore, the Project is consistent with the land use assumptions for the Established Community Type in the 2016 MTP/SCS. SACOG has determined that the Project is consistent with the land use, density, intensity, and related policies of the MTP/SCS (Appendix C).

Thus, through implementation of Mitigation Measure 3.10-1, the Project would be consistent with City General Plan policies and regulations that address environmental effects, as well as the SACOG 2020 MTP/SCS. With mitigation incorporated, this impact would be **less than significant**.

Mitigation Measures

Mitigation Measure 3.10-1: Implement Mitigation Measures 3.1-3, 3.2-2a, 3.2-2b, 3.2-3a, 3.2-3b, 3.3-4, 3.4-1a, 3.4-1b, 3.5-1, 3.7-1a, 3.7-1b, 3.11-2a, 3.11-2b, 3.11-2c, and 3.14-1.

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3.11 NOISE AND VIBRATION

This section includes a summary of applicable regulations related to noise and vibration, a description of ambient-noise conditions, and an analysis of potential short-term construction and long-term operational-source noise impacts associated with the Project. Mitigation measures are recommended as necessary to reduce significant noise impacts. Additional data are provided in Appendix I, "Noise Measurement Data and Noise Modeling Calculations." The analysis of helicopter noise is based on a helicopter noise report included as Appendix J.

Noise-related comments submitted in response to the NOP expressed concern about fire drills, construction noise and vibration, parking facility noise, rooftop sport court noise, stationary noise sources (e.g., mechanical yard), emergency vehicle noise (e.g., ambulance sirens), helicopter noise, traffic-generated noise, and the Project's compliance with local noise standards.

3.11.1 Regulatory Setting

FEDERAL

U.S. Environmental Protection Agency Office of Noise Abatement and Control

The U.S. Environmental Protection Agency (EPA) Office of Noise Abatement and Control was originally established to coordinate federal noise control activities. In 1981, EPA administrators determined that subjective issues such as noise would be better addressed at more local levels of government. Consequently, in 1982, responsibilities for regulating noise control policies were transferred to state and local governments. However, documents and research completed by the EPA Office of Noise Abatement and Control continue to provide value in the analysis of noise effects.

Federal Transit Administration

To address the human response to ground vibration, the Federal Transit Administration (FTA) has set forth guidelines for maximum-acceptable vibration criteria for different types of land uses. These guidelines are presented in Table 3.11-1.

Table 3.11-1 Ground-Borne Vibration Impact Criteria for General Assessment

Land Use Category	GBV Impact Levels (VdB re 1 microinch/second)		
	Frequent Events ¹	Occasional Events ²	Infrequent Events ³
<i>Category 1:</i> Buildings where vibration would interfere with interior operations	65 ⁴	65 ⁴	65 ⁴
<i>Category 2:</i> Residences and buildings where people normally sleep	72	75	80
<i>Category 3:</i> Institutional land uses with primarily daytime uses	75	78	83

Notes: GBV = ground-borne vibration; VdB = vibration decibels referenced to 1 microinch per second and based on the root mean square velocity amplitude.

¹ "Frequent events" is defined as more than 70 vibration events of the same source per day.

² "Occasional events" is defined as between 30 and 70 vibration events of the same source per day.

³ "Infrequent events" is defined as fewer than 30 vibration events of the same source per day.

⁴ This criterion is based on levels that are acceptable for most moderately sensitive equipment, such as optical microscopes. Vibration-sensitive manufacturing or research would require detailed evaluation to define acceptable vibration levels.

Source: FTA 2018

STATE

California Building Code Sound Transmission Standards

Noise within habitable units that is attributable to external sources is regulated by the California Building Standards codified in the California Code of Regulations, Title 24, Part 2, Section 1207. These standards are enforceable at the time of construction or during occupancy and apply to habitable units with common interior walls, partitions, and ceilings or those adjacent to public areas, such as halls, corridors, stairways, and service areas. Under these standards, the interior noise levels attributable to exterior sources shall not exceed 45 decibels (dB) in any habitable room. The noise metrics used to measure these levels can be day-night average sound level (L_{dn}) or Community Noise Equivalent Level (CNEL), consistent with the local general plan. An acoustical analysis documenting compliance with the interior sound level standards shall be prepared for structures containing habitable rooms. Under PRC Section 25402.1(g), all cities and counties in the State are required to enforce the adopted California Building Code, including these standards for noise in interior environments.

California General Plan Guidelines

The State of California General Plan Guidelines 2017, published by the California Governor's Office of Planning and Research, provides guidance for the compatibility of projects within areas of specific noise exposure (OPR 2017). Acceptable and unacceptable community noise exposure limits for various land use categories have been determined to help guide new land use decisions in California communities. In many local jurisdictions, these guidelines are used to derive local noise standards and guidance. Citing EPA materials and the State Sound Transmissions Control Standards, the State's general plan guidelines recommend an interior and exterior CNEL of 45 and 60 dB for residential units, respectively (OPR 2017:378).

California Department of Transportation

In 2013, the California Department of Transportation (Caltrans) published the Transportation and Construction Vibration Manual (Caltrans 2013a). The manual provides general guidance on vibration issues associated with construction and operation of projects in relation to human perception and structural damage. Table 3.11-2 presents recommendations for levels of vibration that could result in damage to structures exposed to continuous vibration.

Table 3.11-2 Caltrans Recommendations Regarding Levels of Vibration Exposure

PPV (in/sec)	Effect on Buildings
0.4–0.6	Architectural damage and possible minor structural damage
0.2	Risk of architectural damage to normal dwelling houses
0.1	Virtually no risk of architectural damage to normal buildings
0.08	Recommended upper limit of vibration to which ruins and ancient monuments should be subjected
0.006–0.019	Vibration unlikely to cause damage of any type

Notes: PPV = peak particle velocity; in/sec = inches per second.

Source: Caltrans 2013a

LOCAL

City of Elk Grove General Plan

Chapter 8 of the *City of Elk Grove General Plan* (City of Elk Grove 2019) includes noise policies that are applicable to the Project:

- **Policy N-1-1:** New development of the uses listed in Table 8-3 [presented as Table 3.11-3 of this EIR] shall conform with the noise levels contained in the table. All indoor and outdoor areas shall be located, constructed, and/or shielded from noise sources in order to achieve compliance with the City's noise standards.

- ▶ **Policy N-1-2:** Where noise mitigation measures are required to achieve the standards of Tables 8-3 and 8-4 [presented as Tables 3.11-3 and 3.11-4, respectively, in this EIR], the emphasis of such measures shall be placed upon site planning and project design. The use of noise barriers shall be considered a means of achieving the noise standards only after all other practical design-related noise mitigation measures, including the use of distance from noise sources, have been integrated into the project.
- ▶ **Policy N-1-4:** Protect noise-sensitive land uses, identified in Table 8-3 [presented as Table 3.11-3 in this EIR], from noise impacts.
- ▶ **Policy N-2-1:** Noise created by new proposed non-transportation noise sources shall be mitigated so as not to exceed the noise level standards of Table 8-4 [presented as Table 3.11-4 in this EIR], as measured immediately within the property line of lands designated for noise-sensitive uses.
- ▶ **Policy N-2-2:** The following criteria shall be used as CEQA significance thresholds for transportation and stationary noise sources:
 - Where existing ambient noise levels are less than 60 dB L_{dn} at the outdoor activity areas of noise-sensitive uses, a +5 dB L_{dn} increase in noise levels shall be considered significant; and
 - Where existing ambient noise levels range between 60 and 65 dB L_{dn} at the outdoor activity areas of noise-sensitive uses, a +3 dB L_{dn} increase in noise levels shall be considered significant; and
 - Where existing ambient noise levels are greater than 65 dB L_{dn} at the outdoor activity areas of noise-sensitive uses, a +1.5 dB L_{dn} increase in noise levels shall be considered significant. Public roadway improvements to alleviate traffic congestion and safety hazards shall utilize FHWA [Federal Highway Administration] noise standards to allow a reasonable dollar threshold per dwelling to be used in the evaluation and abatement of impacts.
 - The standards outlined in Table 8-4 [presented as Table 3.11-4 in this EIR] shall not apply to public projects to alleviate traffic congestion and safety hazards.
- ▶ **Policy N-2-4:** Where sound walls or noise barriers are constructed, strongly encourage and consider requiring a combination of berms and walls to reduce the apparent height of the wall and produce a more aesthetically appealing streetscape.

Table 3.11-3 Maximum Allowable Noise Exposure, Transportation Noise Sources

Land Use	Outdoor Activity Areas ^{a,b} L_{dn}	Interior Spaces	
		L_{dn}	L_{eq}^c
Residential	60 ^{d,g}	45	-
Residential subject to noise from railroad tracks, aircraft overflights, or similar noise sources which produce clearly identifiable, discrete noise events (the passing of a single train, as opposed to relatively steady noise sources as roadways)	60 ^{d,g}	40 ^f	-
Transient Lodging	60 ^{e,g}	45	-
Hospitals, Nursing Homes	60 ^{d,g}	45	-
Theaters, Auditoriums, Music Halls	-	-	35
Churches, Meeting Halls	60 ^{d,g}	-	40
Office Buildings	-	-	45
Schools, Libraries, Museums	-	-	45

^a Where the location of outdoor activity areas is unknown, the exterior noise level standards shall be applied to the property line of the receiving land use. Where it is not practical to mitigate exterior noise levels at patios or balconies of apartment complexes, a common area such as a pool or recreation area may be designated as the outdoor activity area.

^b Transportation projects subject to California Department of Transportation review or approval shall comply with the Federal Highway Administration noise standards for evaluation and abatement of noise impacts.

- ^c As determined for a typical worst-case hour during periods of use.
- ^d Where it is not possible to reduce noise in outdoor activity areas to 60 dB L_{dn} or less using a practical application of the best available noise reduction measures, an exterior noise level of up to 65 dB L_{dn} may be allowed provided that available exterior noise level reduction measures have been implemented and interior noise levels are in compliance with this table.
- ^e In the case of hotel/motel facilities or other transient lodging, outdoor activity areas such as pool areas may not be included in the project design. In these cases, only the interior noise level criterion will apply.
- ^f The intent of this noise standard is to provide increased protection against sleep disturbance for residences located near railroad tracks.
- ^g In cases where the existing ambient noise level exceeds 60 dB, the maximum allowable project-related permanent increase in ambient noise levels shall be 3 dB L_{dn} .

Source: City of Elk Grove 2019:8-57

Table 3.11-4 Noise Level Performance Standards for New Projects Affected by or Including Non-Transportation Noise Sources*

Performance Standards for Stationary Sources	Noise Level Descriptor	Daytime (7 a.m. to 10 p.m.)	Nighttime (10 p.m. to 7 a.m.)
Performance Standards for Typical Stationary Noise Sources ^a	Hourly L_{eq} , dB	55 ^{c,d}	45 ^{c,d}
Performance Standards for Stationary Noise Sources Which Are Tonal, Impulsive, Repetitive, or Consist Primarily of Speech or Music ^b	Hourly L_{eq} , dB	50 ^{c,d}	40 ^{c,d}

* Applies to noise-sensitive land uses only.

- ^a These standards will apply generally to noise sources that are not tonal, impulsive, or repetitive in nature. Typical noise sources in this category would include HVAC systems, cooling towers, fans, and blowers.
- ^b These standards apply to noises which are tonal in nature, impulsive, repetitive, or which consist primarily of speech or music (e.g., humming sounds, outdoor speaker systems). Typical noise sources in this category include pile drivers, drive-through speaker boxes, punch presses, steam valves, and transformer stations. HVAC/pool equipment are exempt from these standards.
- ^c These noise levels do not apply to residential units established in conjunction with industrial or commercial uses (e.g., caretaker dwelling). HVAC/pool equipment are exempt from these standards.
- ^d The City may impose noise level standards which are more or less restrictive based upon determination of existing low or high ambient noise levels.

Source: City of Elk Grove 2019:8-58

City of Elk Grove Municipal Code

Section 6.32.080 of the Elk Grove Municipal Code contains exterior noise standards for sensitive receptors, outlined in Table 6.32-1 (presented as Table 3.11-5 in this EIR). The metric of these standards is L_{eq} because they are identical to the noise level performance standards included in the General Plan presented in Table 3.11-4.

Table 3.11-5 Exterior Noise Standards for Sensitive Receptors

	7:00 am to 10:00 pm	10:00 pm to 7:00 am
Stationary noise sources, generally	55 dB	45 dB
Stationary noise sources which are tonal, impulsive, repetitive, or consist primarily of speech or music	50 dB	40 dB

Source: Section 6.32.080 of the Elk Grove Municipal Code

Section 6.32.100 of the Elk Grove Municipal Code (City of Elk Grove 2020) provides the following exemptions to all noise regulations specified within Chapter 6.68 of the Code that are applicable to the Project:

- ▶ school band, school athletic, and school entertainment events;
- ▶ outdoor gatherings, public dances, shows, and sporting and entertainment events, provided said events are conducted pursuant to a license or permit by the City;

- ▶ activities conducted in parks, on public playgrounds, and on school grounds, provided such parks, playgrounds and school grounds are owned and operated by a public entity or private school;
- ▶ any mechanical device, apparatus, or equipment related to or connected with emergency activities or emergency work;
- ▶ noise sources associated with construction, repair, remodeling, demolition, paving, or grading of any real property, provided said activities only occur between the hours of 7:00 a.m. and 7:00 p.m. when located in close proximity to residential uses. Noise associated with these activities not located in close proximity to residential uses may occur between the hours of 6:00 a.m. and 8:00 p.m. 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 7:00 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; and
- ▶ maintenance of residential real property. Noise sources associated with the minor maintenance and operation of residential real property, including but not limited to pool equipment and heating and air conditioning units. Additionally, yard maintenance equipment and other power tools may be allowed provided the activities take place between the hours of 7:00 a.m. and 10:00 p.m.

City of Elk Grove Construction Specifications Manual

The Elk Grove Construction Specifications Manual (City of Elk Grove 2018) includes the following standards that are applicable to the Project:

- ▶ **Section 7-8.01: Allowable Times and Hours of Work.** Unless otherwise noted in the Special Provisions or approved by the City, no work shall be done between the hours of 6 p.m. and 7 a.m., or on Saturdays, Sundays, or legal holidays.
- ▶ **Section 7-8.02: Off-Period Work.** A written request to work between 6 p.m. and 7 a.m. or on Saturdays, Sundays, or legal holidays, or to close a lane of traffic during peak hours must be submitted at least two (2) Working Days in advance of the intended work. The City will evaluate the Contractor's request to determine if there is a benefit to the City, a nuisance or a hazard to the public, the project, or the area surrounding the site, and if the Contractor should pay any City overtime costs related to the off-period work. The City may place conditions on any approval of off-period work based on this analysis.
- ▶ **Section 7-8.03: Emergency Repairs.** Work done at night, on Saturdays, Sundays, or legal holidays will be exempt for emergency repairs that pose a danger to the public or jeopardizes the integrity of the work.
- ▶ **Section 10-6: Noise Control.** The Contractor shall comply with all local noise control and noise level rules, regulations, and ordinances that apply to the Work. The Special Provisions may contain specific or additional requirements. Internal combustion engines used for any purpose on the Work must be equipped with a muffler recommended by the manufacturer.

3.11.2 Environmental Setting

ACOUSTIC FUNDAMENTALS

Prior to discussing the noise setting for the Project, background information about sound, noise, vibration, and common noise descriptors is needed to provide context and a better understanding of the technical terms referenced throughout this section.

Sound, Noise, and Acoustics

Sound can be described as the mechanical energy of a vibrating object transmitted by pressure waves through a liquid or gaseous medium (e.g., air) to a human ear. "Noise" is defined as loud, unexpected, annoying, or unwanted sound.

In the science of acoustics, the fundamental model consists of a sound (or noise) source, a receiver, and the propagation path between the two. The loudness of the noise source and obstructions or atmospheric factors affecting the propagation path to the receiver determine the sound level and characteristics of the noise perceived by the receiver. The field of acoustics deals primarily with the propagation and control of sound.

Frequency

Continuous sound can be described by frequency (pitch) and amplitude (loudness). A low-frequency sound is perceived as low in pitch. Frequency is expressed in terms of cycles per second, or hertz (Hz) (e.g., a frequency of 250 cycles per second is referred to as 250 Hz). The audible frequency range for humans is generally between 20 Hz and 20,000 Hz.

Sound Pressure Levels and Decibels

The amplitude of pressure waves generated by a sound source determines the loudness of that source. Sound pressure amplitude is measured in micro-Pascals (mPa). One mPa is approximately one hundred billionth (0.0000000001) of normal atmospheric pressure. Sound pressure amplitudes for different kinds of noise environments can range from less than 100 to 100,000,000 mPa. Because of this large range of values, sound is rarely expressed in terms of mPa. Instead, a logarithmic scale is used to describe sound pressure level (SPL) in terms of decibels.

Addition of Decibels

Because decibels are logarithmic units, SPLs cannot be added or subtracted through ordinary arithmetic. Under the decibel scale, a doubling of sound energy corresponds to a 3-dB increase. In other words, when two identical sources are each producing sound of the same loudness at the same time, the resulting sound level at a given distance would be 3 dB higher than if only one of the sound sources was producing sound under the same conditions. For example, if one idling truck generates an SPL of 70 dB, two trucks idling simultaneously would not produce 140 dB; rather, they would combine to produce 73 dB. Under the decibel scale, three sources of equal loudness together produce a sound level approximately 5 dB louder than one source.

A-Weighted Decibels

The decibel scale alone does not adequately characterize how humans perceive noise. The dominant frequencies of a sound have a substantial effect on the human response to that sound. Although the intensity (energy per unit area) of the sound is a purely physical quantity, the loudness or human response is determined by the characteristics of the human ear.

Human hearing is limited in the range of audible frequencies, as well as in the way it perceives the SPL in that range. In general, people are most sensitive to the frequency range of 1,000–8,000 Hz and perceive sounds within this range better than sounds of the same amplitude with frequencies outside of this range. To approximate the response of the human ear, sound levels of individual frequency bands are weighted, depending on the human sensitivity to those frequencies. Then an "A-weighted" sound level (expressed in units of A-weighted decibels) can be computed based on this information.

The A-weighting approximates the frequency response of the average young ear when listening to most ordinary sounds. When people make judgments of the relative loudness or annoyance of a sound, their judgment correlates well with the A-scale sound levels of those sounds. Thus, noise levels are typically reported in terms of A-weighted decibels. All sound levels discussed in this section are expressed in A-weighted decibels. Table 3.11-6 describes typical A-weighted noise levels for various noise sources.

Table 3.11-6 Typical A-Weighted Noise Levels

Common Outdoor Activities	Noise Level (dB)	Common Indoor Activities
	— 110 —	Rock band
Jet fly-over at 1,000 feet	— 100 —	
Gas lawn mower at 3 feet	— 90 —	
Diesel truck at 50 feet at 50 miles per hour	— 80 —	Food blender at 3 feet, garbage disposal at 3 feet
Noisy urban area, daytime; gas lawn mower at 100 feet	— 70 —	Vacuum cleaner at 10 feet, normal speech at 3 feet
Commercial area, heavy traffic at 300 feet	— 60 —	
Quiet urban daytime	— 50 —	Large business office, dishwasher next room
Quiet urban nighttime	— 40 —	Theater, large conference room (background)
Quiet suburban nighttime	— 30 —	Library, bedroom at night
Quiet rural nighttime	— 20 —	
	— 10 —	Broadcast/recording studio
Lowest threshold of human hearing	— 0 —	Lowest threshold of human hearing

Source: Caltrans 2013b:Table 2-5

Human Response to Changes in Noise Levels

As described above, the doubling of sound energy results in a 3-dB increase in the sound level. However, given a sound level change measured with precise instrumentation, the subjective human perception of a doubling of loudness will usually be different from what is measured.

Under controlled conditions in an acoustical laboratory, the trained, healthy human ear can discern 1-dB changes in sound levels when exposed to steady, single-frequency (“pure-tone”) signals in the midfrequency (1,000–8,000 Hz) range. In general, the healthy human ear is most sensitive to sounds between 1,000 and 5,000 Hz and perceives both higher and lower frequency sounds of the same magnitude with less intensity (Caltrans 2013b:2-18). In typical noisy environments, changes in noise of 1–2 dB are generally not perceptible. However, it is widely accepted that people can begin to detect sound level increases of 3 dB in typical noisy environments. Further, a 5-dB increase is generally perceived as a distinctly noticeable increase, and a 10-dB increase is generally perceived as a doubling of loudness (Caltrans 2013b:2-10). Therefore, a doubling of sound energy (e.g., doubling the volume of traffic on a highway) that would result in a 3-dB increase in sound would generally be perceived as barely detectable.

Ground Vibration

Vibration is the periodic oscillation of a medium or object with respect to a given reference point. Ground-borne vibration is vibration of and through the ground. Ground-borne vibration can range from levels that are imperceptible by humans to levels that can create substantial damage to buildings and structures. Sources of ground-borne vibration include natural phenomena (e.g., earthquakes, volcanic eruptions, sea waves, landslides) and those introduced by human activity (e.g., explosions, machinery, traffic, trains, construction equipment). Vibration sources may be continuous (e.g., operating factory machinery) or transient (e.g., explosions) in nature. Vibration levels can be depicted in terms of amplitude and frequency, relative to displacement, velocity, or acceleration.

Ground-borne vibration amplitudes are commonly expressed in peak particle velocity (PPV) or root-mean-square (RMS) vibration velocity. PPV and RMS vibration velocity are normally described in inches per second or in millimeters per second. PPV is defined as the maximum instantaneous positive or negative peak of a vibration signal. PPV is typically used in the monitoring of transient and impact vibration and has been found to correlate well to the stresses experienced by buildings (FTA 2006:7-3, 2018:110; Caltrans 2013a:6).

Although PPV is appropriate for evaluating the potential for building damage, it is not always suitable for evaluating human response. It takes some time for the human body to respond to vibration signals. In a sense, the human body responds to average vibration amplitude. The RMS of a signal is the average of the squared amplitude of the signal, typically calculated over a 1-second period. As with airborne sound, the RMS velocity is often expressed in decibel notation as vibration decibels (VdB), which serves to compress the range of numbers required to describe vibration (FTA 2006:7-4, 2018:110, 199; Caltrans 2013a:7). This is based on a reference value of 1 microinch per second.

The typical background ground-borne vibration-velocity level in residential areas is approximately 50 VdB. Ground vibration is normally perceptible to humans at approximately 65 VdB. For most people, a vibration-velocity level of 75 VdB is the approximate dividing line between barely perceptible and distinctly perceptible levels (FTA 2006:7-8, 2018:120; Caltrans 2013a:27).

Typical outdoor sources of perceptible ground vibration are construction equipment, steel-wheeled trains, and traffic on rough roads. If a roadway is smooth, the ground vibration is rarely perceptible. The range of interest is from approximately 50 VdB, which is the typical background vibration-velocity level, to 100 VdB, which is the general threshold where minor damage can occur to fragile buildings. Construction activities can generate ground vibrations sufficient to pose a risk to nearby structures. Constant or transient vibrations can weaken structures, crack facades, and disturb occupants (FTA 2006:7-5, 2018:113).

Ground vibration levels generated by construction activity can be transient, random, or continuous. Transient construction vibrations are generated by blasting, impact pile driving, and wrecking balls. Continuous vibrations are generated by vibratory pile drivers, large pumps, and compressors. Random vibration can result from jackhammers, pavement breakers, and heavy construction equipment.

Table 3.11-7 summarizes the general human response to different ground vibration-velocity levels.

Table 3.11-7 Human Response to Different Levels of Ground Noise and Vibration

Vibration-Velocity Level	Human Reaction
65 VdB	Approximate threshold of perception.
75 VdB	Approximate dividing line between barely perceptible and distinctly perceptible. Many people find that transportation-related vibration at this level is unacceptable.
85 VdB	Vibration acceptable only if there are an infrequent number of events per day.

Note: VdB = vibration decibels referenced to 1 μ inch/second and based on the root-mean-square velocity amplitude.

Sources: FTA 2006:7-8, 2018:120

Common Noise Descriptors

Noise in our daily environment fluctuates over time. Various noise descriptors have been developed to describe time-varying noise levels. The following noise descriptors are used throughout this section:

- ▶ **Equivalent Continuous Sound Level (L_{eq}):** L_{eq} represents an average of the sound energy occurring over a specified period. In effect, L_{eq} is the steady-state sound level containing the same acoustical energy as the time-varying sound level that occurs during the same period (Caltrans 2013b:2-48). For instance, the 1-hour equivalent sound level, also referred to as the hourly L_{eq} , is the energy average of sound levels occurring during a 1-hour period.
- ▶ **Maximum Sound Level (L_{max}):** L_{max} is the highest instantaneous sound level measured during a specified period (Caltrans 2013b:2-48; FTA 2006:2-16, 2018:207–208).
- ▶ **Day-Night Level (L_{dn}):** L_{dn} is the energy average of A-weighted sound levels occurring over a 24-hour period, with a 10-dB “penalty” applied to sound levels occurring during nighttime hours between 10 p.m. and 7 a.m. (Caltrans 2013b:2-48; FTA 2006:2-22, 2018:214).
- ▶ **Community Noise Equivalent Level (CNEL):** CNEL is the energy average of the A-weighted sound levels occurring over a 24-hour period, with a 10-dB penalty applied to sound levels occurring during the nighttime hours between 10 p.m. and 7 a.m. and a 5-dB penalty applied to the sound levels occurring during evening hours between 7 p.m. and 10 p.m. (Caltrans 2013b:2-48).
- ▶ **Single Event Noise Exposure Level (SENEL):** SENEL represents all the acoustic energy (a.k.a. sound pressure) of an individual noise event as if that event had occurred within a 1-second time period. SENEL captures both the level (magnitude) and the duration of a sound event in a single numerical quantity, by “squeezing” all the noise energy from an event into 1 second. This provides a uniform way to make comparisons among noise events of various durations (FAA 2018).

Sound Propagation

When sound propagates over a distance, it changes in level and frequency content. The manner in which a noise level decreases with distance depends on the following factors.

Geometric Spreading

Sound from a localized source (i.e., a point source) propagates uniformly outward in a spherical pattern. The sound level attenuates (or decreases) at a rate of 6 dB for each doubling of distance from a point source. Roads and highways consist of several localized noise sources on a defined path and hence can be treated as a line source, which approximates the effect of several point sources, thus propagating at a slower rate in comparison to a point source. Noise from a line source propagates outward in a cylindrical pattern, often referred to as cylindrical spreading. Sound levels attenuate at a rate of 3 dB for each doubling of distance from a line source.

Ground Absorption

The propagation path of noise from a source to a receiver is usually very close to the ground. Noise attenuation from ground absorption and reflective-wave canceling provides additional attenuation associated with geometric spreading. Traditionally, this additional attenuation has also been expressed in terms of attenuation per doubling of distance. This approximation is usually sufficiently accurate for distances of less than 200 feet. For acoustically hard sites (i.e., sites with a reflective surface between the source and the receiver, such as a parking lot or body of water), no excess ground attenuation is assumed. For acoustically absorptive or soft sites (i.e., those sites with an absorptive ground surface between the source and the receiver, such as soft dirt, grass, or scattered bushes and trees), an additional ground-attenuation value of 1.5 dB per doubling of distance is normally assumed. When added to the attenuation rate associated with cylindrical spreading, the additional ground attenuation results in an overall drop-off rate of 4.5 dB per doubling of distance. This would hold true for point sources, resulting in an overall drop-off rate of up to 7.5 dB per doubling of distance.

Atmospheric Effects

Receivers located downwind from a source can be exposed to increased noise levels relative to calm conditions, whereas locations upwind can have lowered noise levels, as wind can carry sound. Other factors, such as air temperature, humidity, and turbulence, can also affect sound attenuation.

Shielding by Natural or Human-Made Features

A large object or barrier in the path between a noise source and a receiver attenuates noise levels at the receiver. The amount of attenuation provided by shielding depends on the size of the object and the frequency content of the noise source. Natural terrain features (e.g., hills and dense woods) and human-made features (e.g., buildings and walls) can substantially reduce noise levels. A barrier that breaks the line of sight between a source and a receiver will typically result in at least 5 dB of noise reduction (Caltrans 2013b:2-41; FTA 2006:5-6, 6-25, 2018:42). Barriers higher than the line of sight provide increased noise reduction (FTA 2006:2-12; 2018:16). Vegetation between the source and receiver is rarely effective in reducing noise because it does not create a solid barrier unless there are multiple rows of vegetation of sufficient height (FTA 2006:2-11, 2018:15, 104, 106).

EXISTING NOISE ENVIRONMENT

Existing Noise- and Vibration-Sensitive Land Uses

Noise-sensitive land uses are generally considered to include those uses where noise exposure may result in health-related risks to individuals, as well as places where quiet is an essential element of their intended purpose. Residential dwellings are of primary concern because of the potential for increased and prolonged exposure of individuals to both interior and exterior noise levels, and because of the potential for nighttime noise to result in sleep disruption. Additional land uses such as schools, transient lodging, historic sites, cemeteries, and places of worship are also generally considered sensitive to increases in noise levels. These land use types are also considered vibration-sensitive land uses in addition to commercial and industrial buildings where vibration would interfere with operations within the building, including levels that may be well below those associated with human annoyance.

Project Site

The locations of the noise-sensitive receptors close to the Project site are shown in Figure 3.11-1. The noise-sensitive receptors nearest to the Project site are single-family homes east of West Taron Drive (see Sensitive Receptor 2 in Figure 3.11-1), which are approximately 90 feet east of the closest edge of the Project site, and the single-family homes north of Ruddy Duck Way (see Sensitive Receptor 3 in Figure 3.11-1), which are directly south of the Project site. Additionally, Elk Grove Church of Christ (see Sensitive Receptor 1 in Figure 3.11-1), located on West Taron Court, is surrounded closely on three sides by the Project site boundary. Figure 3.11-1 shows the layout of these receptors relative to the Project site, the locations of short-term and long-term (24-hour) noise measurements taken at the Project site to characterize the existing noise environment, and existing noise walls in the Project area.

Off-Site Improvements

Some noise-sensitive receptors are also located close to the locations where Project-related construction of off-site improvements would take place. These off-site improvements are located along Franklin Boulevard, Elk Grove Boulevard, West Taron Drive, and Riparian Drive. The noise-sensitive receptors nearest to the off-site improvements are the residential land uses located along these roadways.

Existing Noise Sources and Ambient Levels

To characterize the existing ambient noise environment at the Project site, long-term (24-hour continuous) and short-term ambient noise level measurements were conducted at three locations in the Project area on November 13, 2019. The locations of the noise monitoring sites are shown in Figure 3.11-1. A Larson Davis Laboratories Model 820 precision integrating sound level meter was used for the ambient noise level measurement surveys. The meters were calibrated before use with Larson Davis Laboratories Model CAL200 acoustical calibrators to ensure measurement accuracy. The measurement equipment meets all pertinent specifications of the American National Standards Institute.

The long-term noise measurement was conducted at 9700 West Taron Drive behind the medical center building along the property boundary (see LT-1 in Figure 3.11-1). The two short-term noise measurements were conducted along the Project site's southern boundary (see ST-1 in Figure 3.11-1) and adjacent to the main entrance to the Project site along West Taron Court (see ST-2 in Figure 3.11-1). The results of the short-term and long-term noise measurement surveys are summarized in Table 3.11-8 and Table 3.11-9, respectively.

Table 3.11-8 Summary of Short-Term Noise Measurements

Location	Date and Time	Sound Level (dB)		
		L _{eq}	L _{max}	L _{min}
ST-1	November 13, 2019, 12:15 p.m. to 12:30 p.m.	54.5	73.0	46.0
ST-2	November 13, 2019, 12:45 p.m. to 1:00 p.m.	57.5	76.7	45.8

Notes: Refer to Figure 3.11-1 for ambient noise level measurement locations.

See Appendix I for detailed noise measurement data.

Source: Data collected by Ascent Environmental in 2019

Table 3.11-9 Summary of Long-Term Noise Measurements

Location	Start (Date/Time)	Stop (Date/Time)	Sound Level (dB)						
			L _{dn}	Daytime (7:00 a.m.-10:00 p.m.)			Nighttime (10:00 p.m.-7:00 a.m.)		
				L _{eq}	L _{max}	L _{min}	L _{eq}	L _{max}	L _{min}
LT-1	November 13, 2019, 2:00 p.m.	November 14, 2019, 2:00 p.m.	67.0	62.1	77.6	39.2	59.6	75.0	34.8

Notes: Refer to Figure 3.11-1 for the ambient noise level measurement location.

See Appendix I for detailed noise measurement data.

Source: Data collected by Ascent Environmental in 2019



Source: Adapted by Ascent Environmental 2020

Figure 3.11-1 Noise Measurement Sites and Sensitive Receptors

The predominant noise source in the Project area is vehicle traffic on the surrounding roadway network, notably I-5, West Taron Drive, and Elk Grove Boulevard. Existing traffic noise levels on roadway segments in the Project area were modeled using calculation methods consistent with FHWA Traffic Noise Model, Version 2.5 (FHWA 2004) and using average daily traffic volumes provided in the traffic analysis conducted by Fehr & Peers (see Appendix K). Table 3.11-10 summarizes the modeled existing traffic noise levels at 50 feet from the centerline of each area roadway segments and lists distances from each roadway centerline to the 70, 65, and 60 L_{dn} traffic noise contours. For further details on traffic-noise modeling inputs and parameters, refer to Appendix I.

Table 3.11-10 Summary of Modeled Existing Traffic Noise Levels

Roadway Segment	L_{dn} at 50 feet from Roadway Centerline (dB)	Distance from Roadway Centerline to L_{dn} Contour (feet)		
		70	65	60
Interstate 5 from Hood Franklin Road to Elk Grove Boulevard	81.0	269	580	1,250
Interstate 5 from Elk Grove Boulevard to Laguna Boulevard	81.7	301	649	1,397
Elk Grove Boulevard from Interstate 5 to West Taron Drive	69.4	45	98	210
Elk Grove Boulevard from West Taron Drive to Franklin Boulevard	71.3	61	132	284
Elk Grove Boulevard from Franklin Boulevard to Bruceville Road	70.7	55	119	257
Harbour Point Drive from Elk Grove Boulevard to Laguna Boulevard	65.1	24	51	110
West Taron Drive from Riparian Drive to Elk Grove Boulevard	60.6	12	25	55
West Taron Drive from Ruddy Duck Way to Riparian Drive	58.0	8	17	37
Riparian Drive from West Taron Drive to Waterfowl Drive	54.1	4	9	20
Franklin Boulevard from Elk Grove Boulevard to Laguna Boulevard	68.4	39	84	182
Franklin Boulevard from Laguna Boulevard to Whitelock Parkway	68.6	40	87	187

Notes: L_{dn} = day-night average sound level; dB = decibel.

All modeling assumes average pavement, level roadways (less than 1.5% grade), and constant traffic flow, and it does not account for shielding of any type or finite roadway adjustments. For additional details, refer to Appendices I and K for detailed traffic data and for traffic-noise modeling input data and output results.

Source: Data modeled by Ascent Environmental in 2017

3.11.3 Impacts and Mitigation Measures

METHODOLOGY

Construction Noise and Vibration

To assess potential short-term (construction-related) noise and vibration impacts, sensitive receptors and their relative exposure were identified. Project-generated construction source noise and vibration levels were determined based on methodologies, reference emission levels, and usage factors from FTA's *Guide on Transit Noise and Vibration Impact Assessment* methodology (FTA 2018) and FHWA's *Roadway Construction Noise Model User's Guide* (FHWA 2006). Reference levels for noise and vibration emissions for specific equipment or activity types are well documented and their use common practice in the field of acoustics. This analysis compares levels of noise exposure at off-site noise-sensitive receptors to applicable City standards in Table 3.11-4 and considers the duration and time of day in which noise-sensitive receptors would be exposed to construction noise, to determine whether the levels of noise exposure would be excessive.

Operational Noise and Vibration

With respect to nontransportation (e.g., stationary) noise sources associated with Project implementation, the assessment of long-term (operation-related) impacts was based on reconnaissance data, reference noise emission levels, and measured noise levels for activities and equipment associated with Project operation (e.g., delivery activities, events at the proposed amphitheater), and standard attenuation rates and modeling techniques.

To assess potential long-term (operation-related) noise impacts attributable to Project-generated increases in traffic, noise levels were estimated using calculations consistent with FHWA's Traffic Noise Model Version 2.5 (FHWA 2004) and Project-specific traffic data (Appendix K). The analysis is based on the reference noise emission levels for automobiles, medium trucks, and heavy trucks, with consideration given to vehicle volume, speed, roadway configuration, distance to the receiver, and ground attenuation factors. Truck use and vehicle speeds on area roadways were estimated from field observations and the Project-specific traffic report. Note that the modeling conducted does not account for any natural or human-made shielding (e.g., the presence of walls or buildings) or reflection off building surfaces.

Helicopter noise and siren noise associated with ambulances traveling through the Project area were evaluated based on the likelihood of each noise source to result in sleep disturbance at residences.

THRESHOLDS OF SIGNIFICANCE

The thresholds of significance used in this analysis have different noise metrics, including L_{dn} , L_{eq} , and L_{max} , that allow evaluation of a range of noise impacts. The type of noise metric applied to each noise source analyzed is dependent on the nature and duration of the noise generated by the source. L_{dn} standards are used to evaluate noise sources that generate consistent noise levels throughout the day. L_{eq} metrics are used to evaluate noise-generating activities that do not persist all day but do last for most of an hour or longer. L_{max} metrics are used to evaluate the loudest noise levels generated by sources that produce a range of noise levels over time. The SENEL metric is used to evaluate noise sources that expose receptors for a relatively short period (i.e., less than 1 minute) because it captures both the magnitude and the duration of a sound event. Noise standards established by the City are applied as significance criteria if they are expressed in the appropriate metric for the noise source being analyzed. The City has established different noise standards using the L_{dn} and L_{eq} metrics. However, because the City has not established L_{max} noise standards for analyzing the loudest noise levels generated by sources that produce a range of noise levels over time, this noise impact analysis applies L_{max} standards established by a neighboring jurisdiction. Similarly, because the City has not established SENEL standards for analyzing aircraft activity or ambulance sirens that expose receptors for a relatively short period, this noise impact analysis applies SENEL standards recommended by the Federal Interagency Committee on Aviation Noise (FICAN).

In accordance with State CEQA Guidelines Appendix G, the Project would result in a significant noise or vibration impact if it would:

- ▶ expose off-site noise-sensitive receptors to excessive levels of construction noise for an extended period and/or during the noise-sensitive evening and nighttime hours;
- ▶ result in construction-generated vibration levels exceeding Caltrans's recommended standards, as shown in Table 3.11-2, with respect to the prevention of structural building damage (0.2 and 0.08 inch per second PPV for normal and historical buildings, respectively) or FTA's maximum-acceptable-vibration standard with respect to human response (80 VdB for residential uses) at nearby existing vibration-sensitive land uses;
- ▶ result in operational noise levels generated by typical stationary noise sources that exceed the *City of Elk Grove General Plan* noise level performance standards for nontransportation noise sources or the City of Elk Grove Municipal Code exterior noise standards for sensitive receptors, as shown in Table 3.11-4 and Table 3.11-5, respectively, including a daytime standard of 55 dB L_{eq} (7 a.m. to 10 p.m.) and a nighttime standard of 45 dB L_{eq} (10 p.m. to 7 a.m.), or result in maximum noise levels generated by nontransportation noise sources that exceed 75 L_{max} during daytime hours and 70 L_{max} during nighttime hours. These L_{max} standards are applied in this analysis because criteria using the L_{max} metric are useful for determining whether receptors would be exposed to short-term noise levels that are perceived as disruptive and/or excessive;

- ▶ result in operational noise levels that consist primarily of speech or music that exceed the *City of Elk Grove General Plan* noise level performance standards or City of Elk Grove Municipal Code exterior noise standards for sensitive receptors, as shown in Table 3.11-4 and Table 3.11-5, respectively, including a daytime standard of 50 dB L_{eq} (7 a.m. to 10 p.m.) and a nighttime standard of 40 dB L_{eq} (10 p.m. to 7 a.m.), or result in maximum noise levels generated by nontransportation noise sources that exceed 70 dB L_{max} during daytime hours and 65 dB L_{max} during nighttime hours. Consistent with standards and policies of other jurisdictions for sounds consisting of speech or music, these L_{max} standards are 5 dB lower than the L_{max} standards used to evaluate other noise sources and are useful for determining whether receptors would be exposed to short-term noise levels from these types of events that are perceived as disruptive and/or excessive;
- ▶ expose noise-sensitive receptors to incremental increases in traffic noise that exceed any of the incremental noise increase standards specified in Policy N-2-2 in the *City of Elk Grove General Plan*, as follows:
 - an increase of 5 dB L_{dn} or greater where the existing outdoor ambient noise level is less than 60 dB L_{dn} ,
 - an increase of 3 dB L_{dn} or greater where the existing outdoor ambient noise level is between 60 and 65 dB L_{dn} , or
 - an increase of 1.5 dB L_{dn} or greater where the existing outdoor ambient noise level is greater than 65 dB L_{dn} ;
- ▶ result in an increase in occurrences of off-site residential receptors being awakened by the sirens of emergency vehicle driving to the hospital and trauma center;
- ▶ result in helicopter noise levels sources that would:
 - exceed the *City of Elk Grove General Plan* maximum allowable noise exposure standards for transportation noise sources, as shown in Table 3.11-3, including a noise standard of 60 dB L_{dn} at the outdoor activity areas of residential land uses and an interior noise standard of 45 L_{dn} at residential land uses, or
 - expose off-site residential land uses to SENELs that result in more than 5 percent of people being awakened from sleep, which corresponds to an interior SENEL greater than 65 dB (FICAN 1997); or
- ▶ result in excessive noise for people residing or working in the Project area if the Project is located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport.

ISSUES NOT DISCUSSED FURTHER

The Borges-Clarksburg Airport is a small, private airport located approximately 3 miles northwest of the Project site. Sacramento Executive Airport and Franklin Field Airport are both public airports located approximately 7 miles north and south, respectively, of the Project site. Flying B Ranch Airport is a private airport located approximately 5 miles southeast of the Project site. Therefore, the proposed Project would not result in the exposure of people to excessive noise levels associated with airport activity. Noise generated by helicopters flying to and from the hospital trauma center is discussed under Impact 3.11-5. The issue of noise levels associated with airport activity is not discussed further.

Project-related construction would not involve the use of ground vibration-intensive activities, such as pile driving and blasting. As described in Chapter 2, "Project Description," buildings (including the hospital) would be constructed with a mat foundation that consists of the use of a large, continuous concrete slab rather than piles. Activities involving pile driving and blasting typically generate the highest vibration levels compared to other construction methods and are, therefore, of greatest concern when evaluating construction-related vibration impacts. Pieces of equipment that generate lower levels of ground vibration, such as excavators, front-end loaders, and trucks, would be used during construction. Because no pile driving or blasting would occur during Project construction, construction-generated vibration would not result in adverse vibration effects to off-site receptors, buildings, or infrastructure. This issue is not discussed further.

Noise generated by alarms used during fire drills is exempt from the City's noise standards by Section 6.32.100 of the Elk Grove Municipal Code because fire drills are a critical emergency preparedness activity. Occasional fire drills at the

existing CNU School of Medicine are currently part of the existing condition and thus would not be a new noise source resulting from implementation of the Project. This issue is not discussed further.

Operation of the off-site improvements would not result in a long-term change in noise level that differs from existing conditions because the off-site improvements would not result in an increase in vehicle trips or introduce new stationary noise sources. The only potential noise or vibration impact would be construction-generated noise, which is discussed under Impact 3.11-1, "Create Construction-Generated Noise." Operational noise impacts from off-site improvements are not discussed further.

ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Impact 3.11-1: Create Construction-Generated Noise

Construction noise would expose nearby noise-sensitive receptors to elevated noise levels that would often exceed local standards, including the interior noise standard of 40 dB L_{eq} at the church and the exterior and interior noise standards shown in Table 3.11-3, Table 3.11-4, and Table 3.11-5 at nearby residences. In addition, construction noise would be excessive because it would expose some residential land uses to noise levels that are more than 10 dB louder than the applicable noise standard. While the linear nature and limited duration of the off-site improvements would ensure that no receptor would be affected for an extended period, on-site construction may occur over an extended 9- to 10-year period. Construction activity would occur primarily on weekdays during the less noise-sensitive daytime hours. However, construction activity may occasionally occur beyond the allowed hours of construction (weekdays from 7 a.m. to 6 p.m.) designated in Section 7-8.01 of the City of Elk Grove Construction Specifications Manual. A written request to conduct construction work outside these allowed hours would be submitted to the City at least 2 working days in advance, pursuant to Section 7-8.02 of the Construction Specifications Manual. The strategies listed in Mitigation Measure 3.11-1 would decrease exposure of sensitive receptors to on- and off-site construction-generated noise, but the effectiveness of these mitigation strategies cannot be described quantitatively at the time of writing this EIR. Therefore, even with implementation of Mitigation Measure 3.11-1, noise-sensitive receptors may be exposed to construction-generated noise levels that exceed applicable noise standards. Thus, this impact would be **significant and unavoidable**.

The Project would include the demolition of existing buildings, the demolition of existing parking lots, and the construction of a new campus in three phases over a 9- to 10-year period. Construction would primarily occur on weekdays during the less noise-sensitive daytime hours. However, construction may also occur beyond the allowed hours of construction (weekdays from 7 a.m. to 6 p.m.) designated in Section 7-8.01 of the City of Elk Grove Construction Specifications Manual as requested by the Project Applicant to maintain the desired Project construction schedule, required based on the type of construction method used, for safety purposes, or to lessen traffic impacts. For example, nighttime construction may be needed for an extended concrete pour during construction of the new hospital building. The types of heavy equipment used in the demolition of existing buildings and parking lots would likely include excavators, bulldozers, front loaders, and haul trucks to off-haul demolition material. Construction of new facilities would likely involve haul trucks, mixers, excavators, compactors, dozers, loaders, pavers, scrapers, and graders. Demolition activity would not involve the use of explosives or a wrecking ball, and construction activity would not involve pile driving. Reference noise levels of heavy equipment likely to be used in demolition and construction activities are summarized in Table 3.11-11.

The combined noise levels generated by construction and demolition activity would fluctuate depending on the type, number, and duration of use of vehicles and equipment. The effects of construction noise largely depend on the type of construction activities occurring on any given day; the noise levels generated by those activities; distances to noise-sensitive receptors; any noise-attenuating features, such as topography, vegetation, and existing structures; and existing ambient noise levels.

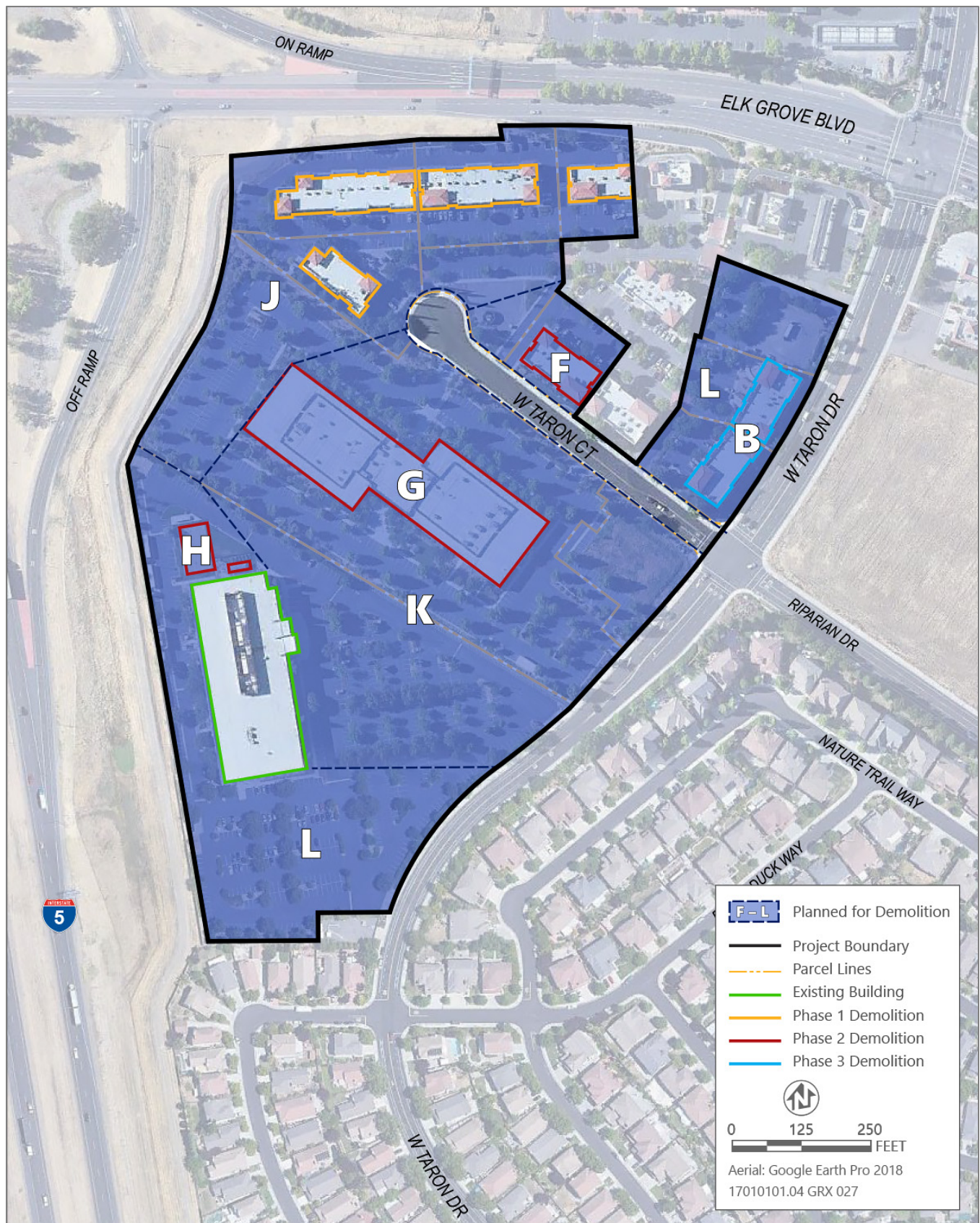
Table 3.11-11 Noise Levels Generated by Construction Equipment

Equipment Type	Typical Noise Level (dB) at 50 feet
Backhoe	80
Concrete mixer	85
Concrete pump	82
Crane	85
Dozer	85
Excavator/shovel	82
Generator	82
Grader	85
Loader	80
Paver	85
Pneumatic tools	85
Scraper	85
Truck	84

Source: FTA 2018:176

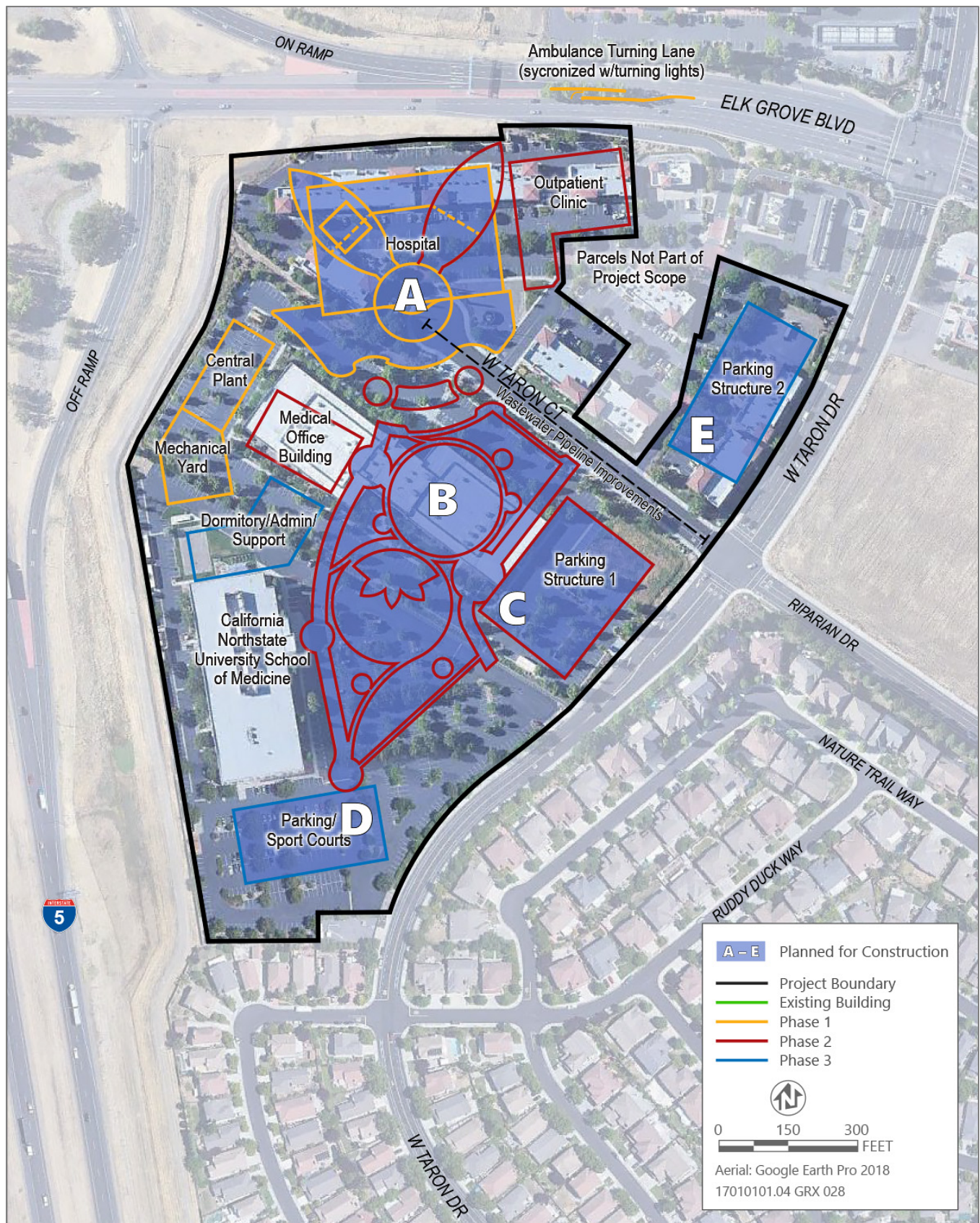
The Elk Grove Church of Christ is a noise-sensitive receptor located along the north side of West Taron Court and bordered by the Project site on three sides. The church holds regularly scheduled events on Wednesdays at 7 p.m. and on Sundays at 9 a.m. (Elk Grove Church of Christ 2020). Project-related construction activities would not always coincide with church events because construction would occur primarily during daytime hours, Monday through Friday. However, construction activities may overlap with church events when weekend or nighttime construction work is needed. Additionally, it is possible that the church would be actively used at times other than its regularly scheduled weekly events, and church event scheduling may change over the approximately 9–10 years that Project construction is anticipated to occur. The closest Project-related construction activity would occur during demolition of the retail building currently located 15 feet northwest of the church. Assuming an exterior-to-interior attenuation of 24 dB provided by the building (EPA 1978:11), the church would be exposed to indoor noise levels of 71 dB L_{eq} and 75 dB L_{max} . Given that a 10-dB increase is generally perceived as a doubling of loudness (Caltrans 2013b:2-10), these interior noise levels would be excessive in comparison to the City's interior noise standard of 40 dB L_{eq} . Construction-generated noise exposure at the church would not always reach these levels because noise exposure at the church would differ greatly depending on the phase of construction, type of construction occurring on any given day, and the location of noise-generating construction activity within the Project site.

Residences along the east side of West Taron Drive and north side of Ruddy Duck Way would also experience elevated noise levels during demolition and construction activities. Because construction activity would occur throughout the 24.4-acre Project site over the anticipated 9- to 10-year construction period, the levels of noise exposure at individual receptors would vary substantially throughout the different phases of construction depending on the type of construction activity and the distance from the construction activity to each receptor. Table 3.11-12 summarizes the noise exposure levels at these residences from different demolition and construction activities that would take place. Detailed calculations are provided in Appendix I. The locations of buildings and facilities that would be demolished and constructed are shown in Figure 3.11-2 and Figure 3.11-3, respectively.



Source: Adapted by Ascent Environmental 2019

Figure 3.11-2 Demolition Plans



Source: Image provided by Fong & Chan Architects in 2019, adapted by Ascent Environmental 2019

Figure 3.11-3 Construction Plans

Table 3.11-12 Noise Exposure Levels at Nearby Residences During On-Site Project Construction

Construction Phase	On-Site Activity ¹	Residential Receptor Location	Distance to Receptor (feet) ²	Outdoor Noise Level (dB L _{eq}) ^{3,4}	Indoor Noise Level (dB L _{eq}) ⁴
Phase 1	Demolition of Parking Lot J	West Taron Drive	690	57	33
	Demolition of Parking Lot J	Ruddy Duck Way	660	57	33
	Construction of Building A	West Taron Drive	760	56	32
	Wastewater Pipeline Improvements ⁵	West Taron Drive	200	72	48
Phase 2	Demolition of Building F	West Taron Drive	535	59	35
	Demolition of Building G	West Taron Drive	575	59	35
	Demolition of Building G	Ruddy Duck Way	855	55	31
	Demolition of Building H	West Taron Drive	725	56	32
	Demolition of Parking Lot K	West Taron Drive	80	76	52
	Demolition of Parking Lot K	Ruddy Duck Way	305	64	40
	Construction of Building B	Ruddy Duck Way	400	61	37
	Construction of Building C	West Taron Drive	200	67	43
Phase 3	Demolition of Building Complex I	West Taron Drive	320	64	40
	Demolition of Parking Lot L	West Taron Drive	85	75	51
	Demolition of Parking Lot L	Ruddy Duck Way	20	88	64
	Construction of Building D	West Taron Drive	240	66	42
	Construction of Building D	Ruddy Duck Way	100	73	49
	Construction of Building E	West Taron Drive	370	62	38

¹ Noise exposure levels associated with the demolition or construction of other buildings are not listed because they would not expose off-site noise-sensitive receptors to exceedances of applicable noise standards. However, detailed estimates are provided in Appendix I.

² Distances listed here represent the distance between the acoustical center of noise-generating construction or demolition activity and the nearest property line of the closest noise sensitive receptor.

³ Any attenuation used in calculations assumes that the sound wall is tall enough to block the sound path, offering a 5-dB decrease in noise level at the receptor.

⁴ Indoor noise level calculations assumed an exterior-to-interior noise level reduction of 24 dB provided by buildings with the windows closed (EPA 1978:11).

⁵ This refers only to on-site wastewater pipeline improvements done along West Taron Court. See the discussion of off-site improvements for analysis of off-site wastewater pipeline improvement construction.

Notes: dB = decibels; L_{eq} = noise equivalent level.

See Figure 3.11-2 and Figure 3.11-3 for locations of buildings and parking lots. See Appendix I for detailed calculations and assumption.

As shown in Table 3.11-12, noise levels generated from multiple demolition or construction sites would exceed the City's daytime noise standard for outdoor areas of 55 dB L_{eq} at the residences along the east side of West Taron Drive and north side of Ruddy Duck Way. Additionally, based on the potential for indoor noise levels to reach up to 64 dB L_{eq}, indoor noise levels would, at times, exceed the indoor noise standard of 45 L_{dn}. Although specific receptors affected and their duration and level of exposure would vary throughout Project construction, the exceedance of outdoor and indoor standards would occur during all three phases of construction, spanning a period of approximately 9–10 years. Moreover, the noise from some activities would expose residences along West Taron Drive to outdoor and indoor noise levels as high as 76 dB L_{eq} and 52 dB L_{eq}, respectively, and expose residences along the north side of Ruddy Duck Way to outdoor and indoor levels as high as 88 dB L_{eq} and 64 dB L_{eq}, respectively. Given that a 10-dB increase is generally perceived as a doubling of loudness (Caltrans 2013b:2-10), these exterior and interior noise levels would be excessive in comparison to the City's exterior noise standard of 55 dB L_{eq} and interior noise standard of 45 L_{dn} for residential land uses.

Noise-generating construction activities performed during the more noise-sensitive evening and nighttime hours are of increased concern because of the potential for construction noise to result in increased annoyance or sleep disturbance to nearby residents. For this reason, Section 7-8.01 of the Elk Grove Construction Specifications Manual limits construction hours from 7 a.m. to 6 p.m. on weekdays, and Section 6.32.100 of the Elk Grove Municipal Code provides an exemption for construction-generated noise provided that construction occurs from 7 a.m. to 7 p.m. However, the Project may conduct nighttime construction outside the City's most stringent allowed construction hours (7 a.m. to 6 p.m. on weekdays) if such construction may be desired to maintain the Project construction schedule, required based on the type of construction method used, or needed for safety purposes or to lessen traffic impacts. As shown in Table 3.11-12, Project construction occurring at night would exceed the City's nighttime noise standard for outdoor areas of 45 dB L_{eq} at the residences along the east side of West Taron Drive and north side of Ruddy Duck Way. A written request to conduct construction work outside the City's allowed construction hours would be submitted to the City at least 2 working days in advance, pursuant to Section 7-8.02 of the Construction Specifications Manual.

Significant noise would also be generated by construction activity associated with the Project's off-site improvements, including improvements to the electrical substation on the east side of Franklin Boulevard approximately 500 feet south of Elk Grove Boulevard; upgrades to underground electrical distribution lines along Franklin Boulevard between Elk Grove Boulevard and the electrical substation, along the segment of Elk Grove Boulevard between Franklin Boulevard and West Taron Drive, and along the west side of West Taron Drive between Elk Grove Boulevard and the Project site entrance at Riparian Drive; construction of the emergency left-turn pocket on Elk Grove Boulevard; and improvements to the wastewater pipeline along the segment of Riparian Drive between West Taron Drive and East Taron Drive. Refer to Chapter 2, "Project Description," for further details on these off-site improvements.

All off-site improvements would be completed during Phase 1 of Project construction. Construction may occur during both daytime and nighttime hours, depending on the nature of the work. Thus, construction would occur beyond the allowed hours of construction (weekdays from 7 a.m. to 6 p.m.) designated in Section 7-8.01 of the City of Elk Grove Construction Specifications Manual. For example, some off-site work may occur at night to lessen traffic impacts from road closures. Construction activity would require trenching along the roadways, installation of electrical and wastewater infrastructure, and repaving of the roadways. The types of heavy equipment used in off-site improvement construction would likely include excavators, front loaders, haul trucks, and pavers. Reference noise levels of heavy equipment likely to be used in construction activities are summarized in Table 3.11-11. Construction noise is also anticipated from implementation of roadway improvements required for compliance with General Plan Policy MOB 1-3 that are described in Chapter 2, "Project Description."

Noise-sensitive receptors located near the off-site improvement construction activities include single-family residences along Elk Grove Boulevard, Coppola Circle, West Taron Drive, and Riparian Drive. Based on the types of equipment that would be used and their proximity to each other, construction activities would typically generate noise levels of 85 dB L_{eq} and 89 dB L_{max} at 50 feet. Most residences adjacent to Elk Grove Boulevard, West Taron Drive, and Riparian Drive have fences or walls that would provide approximately 5 dB of noise reduction. Depending on the type of construction activity and the distance from the construction activity to each receptor on any given day, residences located adjacent to off-site construction activity may be exposed to outdoor noise levels that exceed the daytime exterior noise standards of 55 dB L_{eq} and 75 dB L_{max} , the nighttime exterior noise standards of 45 dB L_{eq} and 70 dB L_{max} , and/or the City's indoor noise standard of 45 L_{dn} .

Summary

Construction activity would occur primarily on weekdays during the less noise-sensitive daytime hours. However, construction may also occur beyond the allowed hours (weekdays from 7 a.m. to 6 p.m.) designated in Section 7-8.01 of the City of Elk Grove Construction Specifications Manual if necessary to maintain the Project construction schedule, if required based on the type of construction method used, for safety purposes, or to lessen traffic impacts. A written request to conduct construction work outside these allowed hours would be submitted to the City at least 2 working days in advance, pursuant to Section 7-8.02 of the Construction Specifications Manual for City approval. While the linear nature and limited duration of the off-site improvements would ensure that no receptor would be affected for an extended period, on-site construction would occur over an extended 9- to 10-year period. Construction-generated

noise levels would exceed local standards during both on- and off-site construction, including the interior noise standard of 40 dB L_{eq} at the church and the exterior and interior noise standards shown in Table 3.11-3, Table 3.11-4, and Table 3.11-5 at nearby residences. In addition, construction noise would expose some residential land uses to noise levels more than 10 dB greater than the applicable noise standard.

While Section 6.32.100 of the Elk Grove Municipal Code provides an exemption for construction-generated noise provided that construction occurs from 7 a.m. to 7 p.m., implementation of Mitigation Measure 3.11-1 would further address construction noise by ensuring that noise exposure from construction at off-site noise-sensitive receptors would be minimized. These mitigation strategies would often decrease construction noise to a level that would not exceed the City's noise standard; however, standards may still be exceeded because Project construction would occur close to noise-sensitive receptors. For example, the acoustical center of activity during construction of the student parking garage and sport courts building would be located 100 feet away from the closest residential property line, resulting in a noise level of 73 dB L_{eq} at the residences. The existing noise level in this area is approximately 55 dB L_{eq} . Installation of an additional sound wall would offer an additional 5-dB decrease, but noise levels would remain more than 10 dB higher than the applicable standard. Given that a 10-dB increase is generally perceived as a doubling of loudness, this level of exposure would be excessive (Caltrans 2013b:2-10). The other strategies listed in Mitigation Measure 3.11-1 would further assist in decreasing exposure to construction-generated noise, but the effectiveness of these mitigation strategies cannot be described quantitatively at the time of writing this EIR. Therefore, even with implementation of Mitigation Measure 3.11-1, noise-sensitive receptors would be exposed to construction-generated noise levels that exceed applicable noise standards from on-site and off-site construction activities. Thus, this impact would be **significant and unavoidable**.

Mitigation Measures

Mitigation Measure 3.11-1: Implement Measures to Reduce Exposure of Noise-Sensitive Receptors to On- and Off-Site Construction-Generated Noise

To minimize noise levels generated by on- and off-site construction activities, the Project Applicant shall require its construction contractors to comply with the following measures during construction:

- ▶ All construction equipment and material staging areas shall be set back as far as possible from nearby off-site noise-sensitive receptors, including but not limited to the residences on the north side of Ruddy Duck Way and the residences on the east side of West Taron Drive.
- ▶ All construction equipment shall be properly maintained and equipped with noise-reduction intake and exhaust mufflers and engine shrouds, in accordance with manufacturer specifications. Equipment engine shrouds shall be closed during equipment operation.
- ▶ Construction equipment with back-up alarms shall be equipped with either audible self-adjusting backup alarms or alarms that sound only when an object is detected. Self-adjusting backup alarms shall automatically adjust to 5 dB louder than the surrounding background levels. All non-self-adjusting backup alarms shall be set to the lowest setting required to be audible above the surrounding noise levels.
- ▶ Arrival and departure of trucks hauling construction materials and equipment to and from staging areas and construction sites shall occur only from 7 a.m. to 6 p.m. on weekdays, pursuant to Section 7-8.01 of the City of Elk Grove Construction Specifications Manual. If such activity is necessary to complete the Project, a written request shall be submitted to the City at least 2 working days in advance, pursuant to Section 7-8.02 of the Construction Specifications Manual. No construction-related hauling or transport shall occur without prior authorization from the City.
- ▶ For all on-site staging areas that would be located within 860 feet of a residential property line and all on-site construction and demolition activity that would take place within 860 feet of a residential property line, temporary noise barriers or noise curtains shall be installed such that they block the line of sight between the noise source and the receiver. For example, during construction of the parking garage and retail building that is demarcated as Building C in Figure 3.11-3, a noise curtain or other barrier shall be installed along the eastern boundary of the

Project site in such a way that the residences on the east side of West Taron Drive would be shielded from noise generated by construction of the on-site building. Temporary noise curtains shall consist of durable, flexible composite material featuring a noise barrier layer bounded to sound-absorptive material on one side. The noise barrier layer shall consist of rugged, impervious material with a surface weight of at least 1 pound per square foot. This noise reduction measure applies only to on-site demolition and construction work. This measure would not be feasible for the off-site construction work, which is linear in nature, because the length of the sound barrier would be excessive, and the location of noise-generating construction activity would change frequently.

- ▶ The Project Applicant shall provide advanced notice to owners of all residential or transient lodging land uses located within 300 feet where nighttime construction activity would take place. This notification shall inform the recipients of when and where nighttime construction would occur and the types of measures being implemented to lessen the impact at potentially affected receptors. This noticing shall also provide the contact information for the designated noise complaint and enforcement manager, discussed further below.
- ▶ The Project Applicant shall post visible signs along the perimeter of the construction site that disclose construction times and duration, as well as a contact number for a noise complaint and enforcement manager. The on-site noise complaint and enforcement manager's duties shall include documenting noise complaints, responding to and investigating noise-related complaints, implementing any feasible and appropriate measures to reduce noise at the receiving land uses, and reporting the complaints to City Planning Division staff on a weekly basis. Additional measures to remedy complaints received from the public may include:
 - implementing noise-reducing enclosures and techniques around stationary noise-generating equipment (e.g., concrete mixers, generators, compressors) and
 - for construction activity that occurs near existing sensitive land uses, installing additional temporary noise curtains within the direct line of sight to the nearby sensitive receptor(s).

These measures shall be included in final building plans and improvement plans. Prior to issuance of plan approval or building permit by the California Office of Statewide Health Planning and Development Facilities Development Division, the Project Applicant shall submit the site plan and other requested items to the City Development Services Department to verify compliance with this measure. All funding for the implementation of these measures shall be provided by the Project Applicant.

Significance after Mitigation

Significant and unavoidable.

Impact 3.11-2: Create Noise Generated by Operational On-Site Activities

The Project would involve the long-term operation of new noise sources and new noise-generating activities on the Project site that may expose off-site noise-sensitive receptors to excessive noise levels. New operational noise sources would include the central plant and mechanical yard; mechanical equipment that is part of buildings' HVAC systems; activity at parking facilities and sport courts; and delivery activity by trucks. Operation of HVAC units and activity at parking facilities, sport courts, and delivery areas would expose existing off-site residential land uses to noise levels that exceed applicable local noise standards. Implementation of Mitigation Measures 3.11-2a, 3.11-2b, and 3.11-2c would reduce impacts to a **less-than-significant** level.

New on-site operational noise sources associated with the Project would include the central plant and mechanical yard, mechanical equipment that is part of buildings' HVAC systems, activity at parking facilities and sport courts, and delivery activity by trucks. Noise from each of these sources is discussed separately. For details on noise propagation calculations and noise level estimates for this impact discussion, refer to Appendix I.

Central Plant and Mechanical Yard

Operation of the central plant and activities at the mechanical yard would generate noise, but these facilities would be located at the western border of the Project site, more than 500 feet from, and with no direct line of sight to, the

closest off-site noise-sensitive receptors. Therefore, it is not anticipated that operation of the central plant and activities at the mechanical yard would expose off-site sensitive receptors to excessive noise levels.

Mechanical HVAC Equipment

New facilities developed as part of the Project would include mechanical building equipment that is part of their HVAC systems, such as boilers, chillers, condensers, cooling towers, fans, and blowers. HVAC-related equipment may be installed next to or on top of the new hospital, outpatient clinic, medical office building, student dormitory, and retail stores. However, the specific locations of new HVAC units on new buildings are not known at the time of writing this EIR. HVAC equipment can generate noise levels as high as 70 dB L_{eq} at 50 feet (EPA 1971, as cited in Placer County 2015:11-24). Without any intervening barriers, HVAC unit-generated noise levels would attenuate to the City's daytime standard of 55 dB L_{eq} at a distance of 280 feet and the City's nighttime standard of 45 dB L_{eq} at a distance of 875 feet. Single-family residences along the east side of West Taron Drive and north side of Ruddy Duck Way are located within these distances and, therefore, may be exposed to noise generated by this equipment that exceeds the City's daytime and nighttime noise standards.

Parking Facilities and Sport Courts

Operation of new buildings and facilities near the edges of the Project site, including surface parking lots, parking structures, and rooftop sport courts, would expose nearby off-site residential land uses to new sources of noise. Two parking structures would be located on the east side of the Project site. Both of these parking structures would include retail space on their top floor. Another new parking structure would be located on the south side of the Project site and have open-air sport courts on its top level. The sport courts would not include lighting, and, thus, their use would be limited to daytime hours. Surface parking lots would also be located along the east and south sides of the Project site. Refer to Figure 2-5 in Chapter 2, "Project Description," for the proposed layout of the Project site.

A sound level measurement collected at an outdoor youth basketball practice indicates that rooftop sport court activity would generate a sound level of 65 dB L_{eq} at 50 feet. Based on a sound level measurement collected at a university parking garage with a height similar to that of the Project's proposed parking garages, parking-related activities in a parking structure would generate a sound level of 54 dB L_{eq} at approximately 50 feet outside the parking structure. According to guidance from the FTA (FTA 2018), noise generated by activity at the surface parking lots located adjacent to off-site sensitive receptors would vary depending on the rate of vehicle turnover, ranging from 44 to 53 dB L_{eq} at 50 feet. Detailed estimations for parking lot noise levels are provided in Appendix I.

Table 3.11-13 summarizes the combined noise exposure levels from parking facilities and sport courts at off-site noise-sensitive receptors. Because parking lots, parking structures, and the sport courts would be close to each other on the Project site, their respective noise levels were added together to determine the combined level of noise exposure at off-site noise-sensitive receptors. For receptors located close to sport court activity, noise exposure was calculated separately for both daytime and nighttime hours because the sport courts would be used only during daytime hours. Daytime hours are designated as 7 a.m. to 10 p.m., according to the City's noise standards shown in Table 3.11-4 and Table 3.11-5.

As shown in Table 3.11-13, the residences along West Taron Drive closest to Ruddy Duck Way and the residences along the north side of Ruddy Duck Way would be exposed to noise levels of 58 dB L_{eq} and 61 dB L_{eq} , respectively, from activity at the nearest parking facilities and the sport courts during daytime hours, when the courts would be in use. These levels of noise exposure would exceed the City's daytime noise standard of 55 dB L_{eq} . After the sport courts close, the parking facilities may still be actively used, resulting in a noise exposure level of 45 dB L_{eq} at the residences along West Taron Drive closest to Ruddy Duck Way and 49 dB L_{eq} at the residences along the north side of Ruddy Duck Way. Thus, the residences along the north side of Ruddy Duck Way would be exposed to a nighttime noise level that would exceed the City's nighttime noise standard of 45 dB L_{eq} .

Table 3.11-13 Noise Level Exposure at Off-Site Receptors from Activity at Parking Facilities and Rooftop Sport Courts

Off-Site Receptors	Nearest On-Site Noise Sources	Combined Noise Exposure Level (dB Leq) ¹	
		Day	Evening and Night
Residences along West Taron Drive closest to Riparian Drive	Closest surface parking lot, closest two parking structures	45	45
Residences along West Taron Drive closest to Ruddy Duck Way	Closest surface parking lot, closest parking structure, and rooftop sport courts (daytime only)	58	45
Residences along north side of Ruddy Duck Way	Closest two surface parking lots, closest parking structure, and rooftop sport courts (daytime only)	61	49

Notes: dB = decibel; Leq = equivalent continuous sound level.

¹ Combined noise exposure level calculations assume that a reduction of 5 dB would be provided by the existing wall along the southern boundary of the Project site or the existing wall along the east side of West Taron Drive.

Refer to Appendix I for detailed noise calculations.

Sources: Measurement data for parking structures and sport courts collected by Ascent Environmental in February 2020, and parking lot noise estimated using guidance from the Federal Transit Administration (FTA 2018:45–47)

Delivery Truck Activity

Some buildings developed on the Project site may have loading docks or designated areas for receiving shipments by commercial trucks. However, the location of loading docks and delivery areas for all buildings in all phases is not precisely known at the time of writing this EIR. Noise sources from truck activity associated with delivery areas are usually short-term and can include activities such as vehicle idling, engine revving, and the release of air brakes on heavy trucks. Measured noise levels for these noise-generating activities are summarized in Table 3.11-14. Most of the noise-generating activities listed in Table 3.11-14 last for a period ranging from a few seconds (e.g., release of air brakes) to a few minutes (e.g., idling) and can reoccur multiple times during a single truck visit.

Table 3.11-14 Noise Levels Generated by Truck Activity at Delivery Areas

Noise-Generating Activity	Noise Level (dB) at 50 feet
Idling 18-wheel heavy truck	64–65
Truck with trailer driving at 5 mph	65
Truck with trailer driving at 10 mph	66–68
Truck revving engine	80
Truck releasing air brakes at a stop	74–86

Notes: dB = decibel; mph = miles per hour.

Sources: Measurement data collected by EDAW in August 2006 and presented in the Merced Wal-Mart Distribution Center EIR (City of Merced 2009:4.8-21)

As shown in Table 3.11-14, the loudest measured truck-related noise is the release of a truck's air brakes after it comes to a stop, which generates noise levels as high as 86 dB L_{max} at 50 feet. The off-site noise-sensitive receptors closest to on-site delivery truck activity would be the single-family homes along the east side of West Taron Drive and the single-family homes along the north side of Ruddy Duck Way. It is assumed that a 5-dB reduction would be provided by the existing wall along the east side of West Taron Drive and the existing wall along the southern boundary of the Project site. Including the noise reduction provided by these walls, delivery truck-generated noise levels would attenuate to the daytime standard of 75 dB L_{max} at a distance of 100 feet and the nighttime standard of 70 dB L_{max} at a distance of 175 feet.

The property lines of the closest residences along the east side of West Taron Drive are located approximately 70 feet from the Project site boundary, and the property lines of the residences along the north side of Ruddy Duck Way are located directly adjacent to the southernmost boundary of the Project site. Therefore, depending on their location

within the Project site, on-site delivery areas would potentially expose residences to noise levels that exceed the daytime noise standard of 75 dB L_{max} and nighttime noise standard of 70 dB L_{max} . A truck with a trailer driving at 10 mph within 15 feet of the Project site boundary would expose the residences along the east side of West Taron Drive and north side of Ruddy Duck Way to 58 dB L_{max} and 74 dB L_{max} , respectively. A truck releasing its compression brakes within 15 feet of the Project site boundary would expose the residences along the east side of West Taron Drive and north side of Ruddy Duck Way to 76 dB L_{max} and 91 dB L_{max} , respectively. Thus, different types of noises associated with on-site truck activity may expose existing off-site residential land uses to noise levels that exceed applicable local standards.

Summary

Noise generated by operation of on-site HVAC equipment and activity at parking facilities and the rooftop sport court would exceed the City's daytime and/or nighttime standards of 55 dB L_{eq} and 45 dB L_{eq} , respectively, at off-site residential receptors. Noise generated by on-site delivery truck activity would exceed the daytime and nighttime standards of 75 dB L_{max} and 70 dB L_{max} , respectively, at off-site residential receptors.

Implementation of Mitigation Measure 3.11-2a would ensure that off-site residential land uses, specifically the single-family dwellings along West Taron Drive and Ruddy Duck Way, would not be exposed to noise generated by HVAC equipment that exceeds the daytime and nighttime noise standards of 55 dB L_{eq} and 45 dB L_{eq} , respectively.

Implementation of Mitigation Measure 3.11-2b would ensure that off-site residential land uses, specifically the single-family dwellings along West Taron Drive and Ruddy Duck Way, would not be exposed to noise generated by operational activity at surface parking lots, parking structures, and the rooftop sport courts that exceeds the daytime and nighttime noise standards of 55 dB L_{eq} and 45 dB L_{eq} , respectively. For instance, implementation of a sound wall along the south and east edges of the rooftop sport courts that blocks the line of sight to the backyards of nearby single-family residences would provide a minimum 5-dB reduction at these receptors. This measure alone would reduce daytime noise exposure at the residences along West Taron Avenue to 53 dB L_{eq} , which is less than the City's daytime standard of 55 dB L_{eq} . A taller wall would provide additional reduction. More specifically, a taller wall that provided a 6-dB reduction would reduce the level of daytime noise exposure to the City's daytime standard of 55 dB L_{eq} at the residences on the north side of Ruddy Duck Way. A 4-dB reduction would be needed to achieve the City's nighttime noise standard of 45 dB L_{eq} at the residences on the north side of Ruddy Duck Way. A 4-dB reduction may be attained by installing a wall or louvered sound barrier along the near side of the closest parking structure, increasing the setback distance between the nearest surface parking lots or parking structure, and/or installing an intervening sound barrier along the surface parking area closest to Ruddy Duck Way.

Implementation of Mitigation Measure 3.11-2c would ensure that off-site residential land uses, including the single-family dwellings along West Taron Drive and Ruddy Duck Way, would not be exposed to noise generated by on-site truck loading docks and delivery areas that exceeds the daytime and nighttime noise standards of 75 and 70 dB L_{max} , respectively. For instance, implementation of a 100-foot setback would ensure that off-site single-family dwellings would not be exposed to noise levels that exceed the daytime noise standard of 75 dB L_{max} , and implementation of a 175-foot setback would ensure that off-site single-family dwellings would not be exposed to noise levels that exceed the nighttime noise standard of 70 dB L_{max} . Additional noise protection would be provided by the addition of a sound barrier. Alternatively, setback distances may be shorter if a sound barrier is added to block noise generated from the loading docks and delivery areas. Sufficient noise protection may also be achieved by placing loading docks and delivery areas on the side of on-site buildings that is opposite from that of these residences.

Furthermore, some of the noise reduction measures selected to reduce exposure to noise from specific noise sources—whether it be specific to reducing noise from HVAC equipment, parking and sport court activity, or truck activity—may also reduce the level of noise exposure from other on-site noise sources. Therefore, implementation of Mitigation Measures 3.11-4a, 3.11-4b, and 3.11-4c would reduce impacts related to on-site operational noise sources to a **less-than-significant** level.

Mitigation Measures

Mitigation Measure 3.11-2a: Implement Design Measures to Ensure That Operation of On-Site HVAC Equipment Does Not Expose Off-Site Residences to Noise Levels That Exceed Applicable Standards

The Project Applicant shall implement design measures to ensure that all mechanical building equipment that is part of the HVAC systems, in combination with other types of on-site operational noise sources, do not expose off-site residential land uses, including the single-family homes on the east side of West Taron Drive and north side of Ruddy Duck Way, to noise levels that exceed 55 L_{eq} during daytime hours (7 a.m. to 10 p.m.) or 45 L_{eq} during nighttime hours (10 p.m. to 7 a.m.). The Project Applicant shall identify design measures necessary to achieve these performance standards prior to operation of any HVAC systems on new buildings located within 875 feet of off-site residential land uses and confirm that the selected measures are sufficiently effective after they are implemented. All design measures and their effectiveness shall be demonstrated in an acoustic analysis subject to review and approval by City Development Services Department staff, and if determined necessary by City Development Services Department staff, the City can hire a qualified acoustical engineer to peer review the documentation provided by the Project Applicant that shows these performance criteria would be achieved. All funding for the study and implementation of the measures, including the cost of the City hiring an acoustical engineer to peer review the analysis demonstrating the effectiveness of the Project Applicant's proposed design measures, shall be provided by the Project Applicant.

Measures to achieve these performance standards may include, but shall not be limited to, the following measures:

- ▶ Design and build sound barriers near all noise-generating HVAC units that enclose mechanical equipment as much as possible and completely block the line of sight between the equipment and off-site residential land uses. Sound barriers can consist of a wall, earthen berm, or some combination thereof.
- ▶ Locate HVAC units within equipment rooms or enclosures that incorporate noise reduction features, such as acoustical louvers. Equipment enclosures shall be oriented so that major openings (i.e., intake louvers, exhaust) are directed away from nearby noise-sensitive receptors.
- ▶ Set back all HVAC units as much as possible from off-site noise-sensitive receptors, including residential land uses.
- ▶ Position HVAC units on the opposite side of an on-site buildings from off-site sensitive receptors so that the buildings serve as an intervening noise barrier.

Prior to issuance of plan approval or building permit by the California Office of Statewide Health Planning and Development Facilities Development Division, the Project Applicant shall submit the site plan, acoustic analysis, and other requested items to the City Development Services Department to verify compliance with this measure. Documentation of compliance with this measure shall be provided to the City Development Services Department prior to issuance of building permits by the City for other buildings not under the jurisdiction of the California Office of Statewide Health Planning and Development Facilities Development Division.

Mitigation Measure 3.11-2b: Implement Measures to Reduce Parking Facility and Sport Court–Generated Noise Exposure at Nearby Noise-Sensitive Receptors

The Project Applicant shall implement design measures to ensure that activity at surface parking lots, parking structures, and the rooftop sport courts, in combination with other types of on-site operational noise sources, do not expose off-site residential land uses to noise levels that exceed 55 dB L_{eq} during daytime hours (7 a.m. to 10 p.m.) or 45 dB L_{eq} during nighttime hours (10 p.m. to 7 a.m.). The Project Applicant shall identify design measures necessary to achieve these performance standards prior to operation of surface parking lots, parking structures, or sport courts located near off-site residential land uses and confirm the selected measures are sufficiently effective after they are implemented. All design measures and their effectiveness shall be demonstrated in an acoustic analysis subject to review and approval by City Development Services Department staff, and if determined necessary by City Development Services Department staff, the City can hire a qualified acoustical engineer to peer review the documentation provided by the Project Applicant that shows these performance criteria would be achieved. All funding for the study and implementation of the

measures, including the cost of the City hiring an acoustical engineer to peer review the analysis demonstrating the effectiveness of the Project Applicant's proposed design measures, shall be provided by the Project Applicant.

Measures to achieve these performance standards may include, but shall not be limited to, the following measures:

- ▶ Restrict access of the sport courts to daytime hours from 7 a.m. to 10 p.m. every day with a locked gate or some other mechanism.
- ▶ Design the parking structures so that the vehicle entrance and exits are on the side of the structure opposite from that of the nearest off-site residences. This measure shall be implemented only to the extent it is consistent with recommendations in Draft EIR Appendix K regarding on-site circulation.
- ▶ Design and build a sound barrier along the south and east sides of the rooftop sport court that blocks the line of sight from activities on the sport courts to the backyards of the single-family dwellings along the east side of West Taron Drive and the north side of Ruddy Duck Way. This barrier may consist of a solid wall or a louvered barrier that allows air to pass through but still reflects sound away from off-site residences. The sound barriers shall be in place prior to use of the sport courts.
- ▶ Move the sport courts to the rooftop of a different on-site building that would be more distant from off-site residential land uses or move the sport courts indoors, within an on-site building rather than on a rooftop.
- ▶ Include a sound wall or louvered sound barrier along those sides of parking structures that face the single-family dwellings along the east side of West Taron Drive or the north side of Ruddy Duck Way. For the parking structure near the east side of the Project site (with retail stores on the top floor), the barriers shall be installed on the east and south sides of the structure. For the parking structure closest to the single-family residences on Ruddy Duck Way, a barrier shall be installed on the south side of the structure. The sound barriers on each parking structure shall be in place prior to use of the use of the parking structure.
- ▶ Set back surface parking lots and parking structures further from off-site residential receptors.
- ▶ Install sound barriers (i.e., a wall, berm, or combination thereof) between some surface parking areas and off-site residential receptors. These sound barriers can consist of a wall, earthen berm, or some combination thereof.

Documentation of compliance with this measure shall be provided to the City Planning Division prior to issuance of building permits by the City.

Mitigation Measure 3.11-2c: Implement Design Measures to Ensure That Delivery Truck Activity Does Not Expose Off-Site Residences to Noise Levels That Exceed Applicable Standards

The Project Applicant shall implement design and/or operational measures to ensure that delivery truck activity would not expose off-site residential land uses, including the single-family homes on the east side of West Taron Drive and north side of Ruddy Duck Way, to noise levels that exceed 75 L_{max} during daytime hours (7 a.m. to 10 p.m.) or 70 L_{max} during nighttime hours (10 p.m. to 7 a.m.). The Project Applicant shall identify measures necessary to achieve these performance standards prior to operation of buildings or parking areas located within 175 feet of off-site residential land uses and confirm that the selected measures are sufficiently effective after they are implemented. All design measures and their effectiveness shall be demonstrated in an acoustic analysis subject to review and approval by City Development Services Department staff, and if determined necessary by City Development Services Department staff, the City can hire a qualified acoustical engineer to peer review the documentation provided by the Project Applicant that shows these performance criteria would be achieved. All funding for the study and implementation of the measures, including the cost of the City hiring an acoustical engineer to peer review the analysis demonstrating the effectiveness of the Project Applicant's proposed design measures, shall be provided by the Project Applicant. Measures to achieve these performance standards may include, but shall not be limited to, the following measures:

- ▶ Design and build sound barriers near loading docks and delivery areas that block the line of sight between truck activity areas and off-site residential land uses. Sound barriers may consist of a wall, enlargement of an existing wall along southern boundary of the site, an earthen berm, or a combination thereof. Sound reduction may also be achieved by constructing loading dock pits that are below grade relative to the surrounding parking area.

- ▶ Place loading docks and truck delivery areas on the sides of on-site buildings opposite from the side of the closest off-site noise-sensitive receptor so that the on-site building serves as a sound barrier protecting existing off-site residential land uses.
- ▶ Require all loading docks and truck delivery areas to be set back a specific distance from off-site residential land uses, and prohibit truck travel and truck activity within the setback areas by posting signs and/or by installing gates that restrict truck access. The setback distance for truck activity during daytime hours (7 a.m. to 10 p.m.) can be different from the setback distance for truck activity during nighttime hours (10 p.m. to 7 a.m.).

Prior to issuance of plan approval or building permit by the California Office of Statewide Health Planning and Development Facilities Development Division, the Project Applicant shall submit the site plan and other requested items to the City Development Services Department to verify compliance with this measure. Documentation of compliance with this measure shall be provided to the City Development Services Department prior to issuance of building permits by the City for other buildings not under the jurisdiction of the California Office of Statewide Health Planning and Development Facilities Development Division.

Significance after Mitigation

Less than significant.

Impact 3.11-3: Amphitheater Event Noise

Noise generated by crowds and amplified speech and music at amphitheater events would not exceed local noise standards for daytime hours (i.e., 7:00 am to 10:00 p.m.), and no events would take place at the amphitheater during noise-sensitive nighttime hours (i.e., 10:00 pm to 7:00 a.m.). Therefore, this impact would be **less than significant**.

The Project would include an amphitheater for large school events, such as graduation and special ceremonies on the opening day of the school year. The amphitheater may also be the location of a regularly scheduled social event that would most likely occur between 4 p.m. and 7 p.m. on Friday afternoons. These regularly scheduled events are not expected to include amplified music or sound. If additional events were held that required amplified music or sound, a permit from the City would be required to be obtained, and the permit may require that nearby residences be notified of the event.

Based on sound measurement levels collected at other outdoor event venues that use amplified sound, it is anticipated that events at the amphitheater on the Project site would generate sound levels of 75 L_{eq} and 80 L_{max} at 50 feet (Bollard Acoustical Consultants 2019:17). Assuming a 5-dB reduction from the existing wall along the east side of West Taron Drive, amphitheater event noise would attenuate to 47 dB L_{eq} and 52 dB L_{max} at the homes along West Taron Drive. Assuming a 5-dB reduction from the existing wall along the south side of the Project site, amphitheater event noise would attenuate to 43 dB L_{eq} and 48 dB L_{max} . Therefore, noise levels at nearby residences would not exceed the City's daytime noise standard of 50 dB L_{eq} for stationary noise sources that consist primarily of speech or music. Noise levels would also not exceed the noise standard for sounds consisting primarily of speech or sound of 70 L_{max} during daytime hours (7 a.m. to 10 p.m.). Additional attenuation would be provided by new buildings constructed on the site, such as the parking garage at the Project site's south end. Therefore, this impact would be **less than significant**.

Mitigation Measures

No mitigation is required.

Impact 3.11-4: Increase Occurrences of Ambulance Siren Noise

Implementing the Project would result in an increase in emergency ambulance trips traveling along local roadways past existing noise-sensitive residential receptors. Although noise generated by emergency response activity is exempt from the City's noise standards, noise generated by ambulance sirens would result in an increase in sleep disturbance at affected residential dwellings. While some Project design features may decrease the occurrence of sleep disturbance caused by siren noise, there are no additional feasible mitigation measures for reducing exposure of residential land uses to ambulance noise and associated sleep disturbance. Therefore, this impact would be **significant and unavoidable**.

Operation of the new hospital and trauma center would result in an increase in ambulance trips traveling along roadways in the Project area, including emergency trips with sirens running. Section 6.32.100 of the Elk Grove Municipal Code exempts sirens and other emergency equipment and activities from the City's noise standards; however, ambulance sirens operating during the noise-sensitive nighttime hours have the potential to result in sleep disturbance at residences. Although ambulance sirens are used in the Project area under existing conditions, as in any urban area, the frequency of such occurrences would increase in the Project area because the new hospital and trauma source would be the destination of many emergency ambulance trips that currently travel to different emergency rooms. An increase in ambulance siren activity would be most prevalent on arterials and collector streets leading to the new hospital, particularly Elk Grove Boulevard and West Taron Drive.

Although the average daily noise descriptors (i.e., L_{dn} and CNEL) incorporate a nighttime weighting or "penalty" that is intended to reflect the expected increased sensitivity to noise at night, L_{dn} and CNEL standards do not directly address the potential for sleep disturbance. The SENEL is a better metric for evaluating the potential for sleep disturbance from a noise event because it describes a receiver's total noise exposure from a single impulsive noise event (e.g., a passing vehicle or train, or an aircraft flying overhead), which is a rating of a discrete noise event that compresses the total sound energy of the event into a 1-second time period, measured in decibels (Caltrans 2011:D-20).

Elk Grove, the Governor's Office of Research and Planning, and most cities and counties have not established noise level standards for the effects of single-event noise. However, following the court decision in *Berkeley Keep Jets Over the Bay Committee v. Board of Port Commissioners of the City of Oakland, 2001* (Berkeley case) there has been increased attention to the evaluation of SENELs and their effects on sleep. Because the Berkeley case involved aircraft and the hospital and trauma center would involve ambulances using sirens, the situations are not the same. Nonetheless, the SENELs from passing ambulances associated with Project operations are evaluated here.

Many studies have been conducted regarding the effects of single-event noise on sleep disturbance, but because of the wide variation in the reaction of test subjects to SENELs of various levels, no definitive consensus has been reached with respect to a universal criterion to apply. Upon a review of studies about sleep disturbance and aircraft-generated SENELs, FICAN provided estimates of the percentage of people expected to be awakened when exposed to specific SENELs inside a residence (FICAN 1997). According to FICAN's dose-response curve for predicting awakening, 10 percent of the population is estimated to be awakened when the SENEL interior noise level associated with a noise event is 81 dB, an estimated 5–10 percent of the population is affected when the SENEL interior noise level is between 65 and 81 dB, and few sleep awakenings (less than 5 percent) are predicted if the interior SENEL is less than 65 dB. However, FICAN did not recommend a threshold of significance based on the percent of people awakened. The threshold for sleep disturbance is not absolute because there is a high degree of variability from one person to another. Thus, the means of applying such research to land use decisions has a degree of discretion based on what a local agency may feel is acceptable. As a result, no government agency has suggested what frequencies of awakenings are acceptable. For these reasons, FICAN, the Governor's Office of Research and Planning, and most cities and counties (including the City of Elk Grove) continue to use L_{dn} or CNEL as the primary tool for the purpose of land use compatibility planning (Caltrans 2011). In fact, L_{dn} and CNEL represent the cumulative exposure to all single events—that is, the exposure of all SENELs taken together, weighed to add penalties for nighttime occurrences and averaged over a 24-hour period. Thus, it can be argued that Elk Grove's L_{dn} standards (shown in Table 3.11-3) already account for the individual impacts associated with the SENELs.

Some jurisdictions have established L_{\max} standards. The L_{\max} metric is used to evaluate a maximum instantaneous sound level; however, the limitation of using an instantaneous sound level is that it provides no information regarding the duration of a sound. Two different aircraft overflights or truck pass-bys, for instance, can produce vastly different total amounts of sound energy at a given receptor depending upon how quickly the aircraft or trucks pass by even if they generate the same L_{\max} . Thus, the relationship between L_{\max} and SENEL is not constant because some noise events last longer than others. The shorter the noise event, the closer the L_{\max} and SENEL measurements will be to each other (Caltrans 2011:D-20).

Because the *Berkeley* case drew concerns related to interior SENEL values in excess of 65 dB, this analysis uses a threshold of 65 dB SENEL within residences. Exposure to 65 dB SENEL would result in a chance of sleep disturbance of less than 5 percent.

Reference sound level measurements collected by Ascent Environmental in December 2019 indicate that when an ambulance travels past a receptor with its siren on, it generates an SENEL of 102.8 dB 25 feet from its travel route.

Assuming the average exterior-to-interior noise level reduction of 24 dB provided by buildings with the windows closed (EPA 1978:11), and an additional 5-dB reduction from the noise walls located along Elk Grove Boulevard and West Taron Drive, the maximum SENEL in the interior of rooms located closer than 69 feet from a passing ambulance siren would exceed 65 dBA SENEL. Because some of the houses along nearby roadways used for these ambulance trips, including the nearby segments of Elk Grove Boulevard, West Taron Drive, and Harbour Point Drive, have inhabitable rooms that are closer than 69 feet to the near traffic lane of the roadway, these rooms may experience SENELs that exceed the threshold of 65 dB; therefore, the percentage of people expected to be awakened when inside the affected homes may exceed 5 percent. This impact occurs under existing conditions on the occasion that an ambulance responds to a call with its siren on in the Project area. However, as shown in Table 2-7, it is projected that approximately 3,600 one-way trips per year by ambulances would be associated with Project operations during Phase 1, and approximately 4,200 one-way trips per year during Phases 2 and 3. While the portion of these trips that would involve use of a siren is unknown at the time of writing this EIR, it is likely that the increase in siren use would be noticeable to the surrounding residents. Thus, operation of the new hospital and trauma center, which would be the destination of emergency ambulance trips, would result in an increase in such noise events.

The Project design would enable ambulances to access the Project site without traveling along West Taron Drive, thereby minimizing noise levels at residences located along the east side of West Taron Drive. Nonetheless, residences along Elk Grove Boulevard would be exposed to SENELs that exceed the 65-dB threshold. Ambulances are required to use their sirens during emergency trips because their sirens are purposefully loud to draw the attention of other vehicle drivers and pedestrians. Thus, ambulance noise is a common component in an urban setting. Because there are no additional feasible measures for reducing exposure to ambulance noise and associated sleep disturbance, this impact would be **significant and unavoidable**.

Mitigation Measures

The Project design includes an emergency vehicle left-turn pocket on Elk Grove Boulevard restricted for emergency vehicle use, including ambulances. The turn pocket would be equipped with a signal to stop eastbound Elk Grove Boulevard traffic and allow emergency vehicles to turn left into the Project site. Actuation of the left-turn pocket signal would be limited to first responders in emergency vehicles to minimize the impacts on traffic flow on Elk Grove Boulevard. This left-turn pocket would prevent many ambulances from needing to travel along West Taron Drive to access the main entrance, resulting in fewer occurrences when the residential land uses along the east side of West Taron Drive would be exposed to disruptive siren noise.

Significance after Mitigation

Significant and unavoidable.

Impact 3.11-5: Create Helicopter Noise

Noise generated by helicopter landings and takeoffs at the helistop on the roof of the hospital would not expose off-site residential land uses to SENELs that result in more than 5 percent of people to be awakened from sleep. This impact would be **less than significant** because the helicopter flight path proposed for the Project would avoid residential land uses.

Operation of the new hospital would include helicopter visits to the helistop. The approach and departure flight paths to the helistop are shown in Figure 2-22 in Chapter 2, "Project Description." Low-flying helicopters are typically the predominant noise source anytime they occur in an urban environment. Although helicopters occasionally fly over the Project area under existing conditions, the frequency of such occurrences would increase in the Project area because the helistop at the new hospital would be the destination of emergency helicopter trips approximately four to six times per month.

The effects of helicopter noise on the surrounding community were evaluated in the *Helicopter Noise Report* (SM&W 2020), which is included as Appendix J. This study involved the collection of sound level measurements at 11 different sites in residential areas surrounding the Project site while a helicopter was flown along the planned flight paths to the planned location of the hospital helistop. The helicopter used for the testing was a multiengine Agusta-109 helicopter (with turboshaft powerplants), which is considered an older and louder aircraft than the newer, quieter models anticipated for use at the new hospital. The study then used the data to develop helicopter noise contours with computer modeling using the Federal Aviation Administration–recommended Aviation Environmental Design Tool, Version 3c (FAA 2020). A noise contour is a line on a map that represents equal levels of noise exposure. The area "inside" a noise contour (i.e., closer to the noise source) is exposed to higher noise levels than demarcated by the noise contour, and the area "outside" a noise contour (i.e., further from the noise source) is exposed to lower noise levels than demarcated by the noise contour. The modeling predicts that the 60 dB L_{dn} contour for helicopter noise would not extend beyond the Project site and, therefore, that no off-site residential areas would be exposed to helicopter noise levels that exceed the City's 60 dB L_{dn} standard for transportation noise sources (SM&W 2020:13–16). The study also found that noise generated by existing noise sources in the area, such as noise from traffic on I-5, Elk Grove Boulevard, and other roadways, combined with Project-generated noise would not result in any meaningful changes to noise levels in residential areas near the Project site (SM&W 2020:26–30).

Helicopter-generated SENELs were also examined in the study because emergency helicopter trips to the helistop may occur during noise-sensitive nighttime hours and, as explained in the discussion about ambulance siren noise under Impact 3.11-4, the SENEL metric is useful for predicting the probability of sleep disturbance to residents. As was used in the analysis of ambulance siren noise under Impact 3.11-4, this analysis applies a threshold of 65 dB SENEL at the interior of residences because exposure of residents to 65 dB SENEL would result in less than 5-percent probability of sleep disturbance (FICAN 1997). Given the exterior-to-interior noise level reduction of 24 dB provided by buildings with their windows closed (EPA 1978:11), an interior SENEL of 65 dB is equivalent to an exterior SENEL of 89 dB. This threshold is more conservative than 95 dB SENEL, which the helicopter noise report identifies as the level that would result in 10 percent of the exposed population being potentially awakened (SM&W 2020:5, 6).

The helicopter noise study indicates that the 85-dB SENEL contour would not extend as far as any residential land uses north of the Project site (SM&W 2020:21–24). This means none of the residences north of the Project site would be exposed to interior SENELs that exceed the threshold of 65 dB. The 85-dB SENEL contour, however, does extend into the first row of the single-family homes along the east side of West Taron Avenue, whereas the 90-dB SENEL contour would extend only to an area that is approximately 160 feet west of these residences (SM&W 2020:21–24). Although the exact location of the 89-dB SENEL contour was not modeled, based on the locations of contours for the 90 and 85 dB SENELs, it can be clearly interpreted that no off-site residents would be located inside the 89-dB SENEL contour. Therefore, no off-site residents would be exposed to helicopter-generated SENELs that would result in more than 5 percent of people being awakened from sleep. This impact would be **less than significant**.

Mitigation Measures

No mitigation is required beyond the Project proposed helicopter flight path along I-5 that avoids residential areas identified in Figure 2-22.

Impact 3.11-6: Create Long-Term (Operational) Traffic-Generated Noise

Project-generated traffic would not expose residential land uses to interior noise levels at residential buildings that exceed 45 dB, to increases in exterior traffic noise levels that would exceed the City's incremental noise increase criteria for transportation noise sources, or to perceptible increases in traffic noise. Therefore, this impact would be **less than significant**.

Project-generated vehicle trips generated by employees, students, patients, and visitors would result in an increase in average daily traffic volumes and associated increases in traffic noise levels along local roadway segments used to travel to and from the Project site. To analyze the impact of Project-generated transportation noise sources, traffic noise levels under existing, existing-plus-Phase-1-buildout, and existing-plus-full-buildout conditions were modeled for the most affected local roadway segments. For further detail about the parameters used to model traffic noise levels, refer to Appendix I for detailed traffic noise modeling input parameters.

Table 3.11-15 summarizes the modeled traffic noise levels at the nearest residential land uses adjacent to each roadway segment under existing, existing-plus-Phase-1-buildout, and existing-plus-full-buildout conditions. Table 3.11-15 also shows the incremental increase in noise levels under both buildout scenarios relative to existing conditions.

Table 3.11-15 Summary of Modeled Traffic Noise Levels

Roadway Segment	L _{dn} at Nearest Residential Land Use (Exterior, dB) ¹			Applicable Incremental Noise Standard (dB)	Incremental Increase (dB)	
	Existing Conditions	Existing Plus Phase 1 Buildout	Existing Plus Full Buildout		Existing Plus Phase 1 Buildout	Existing Plus Full Buildout
Interstate 5 from Hood Franklin Road to Elk Grove Boulevard	66.3	66.3	66.4	1.5	0.0	0.1
Interstate 5 from Elk Grove Boulevard to Laguna Boulevard	67.0	67.1	67.3	1.5	0.1	0.3
Elk Grove Boulevard from Interstate 5 to West Taron Drive/Harbour Point Drive	59.5	59.8	60.4	5	0.3	0.9
Elk Grove Boulevard from West Taron Drive/Harbour Point Drive to Franklin Boulevard	61.5	62.0	62.6	3	0.5	1.1
Elk Grove Boulevard from Franklin Boulevard to Bruceville Road	62.2	62.6	62.9	3	0.4	0.7
Harbour Point Drive from Elk Grove Boulevard to Laguna Boulevard	63.7	63.8	63.8	3	0.1	0.1
West Taron Drive from Ruddy Duck Way to Riparian Drive	54.4	54.6	54.7	5	0.2	0.3
Riparian Drive from West Taron Drive to Waterfowl Drive	49.8	51.1	52.3	5	1.3	2.5
Franklin Boulevard from Elk Grove Boulevard to Laguna Boulevard	59.8	60.0	60.3	5	0.2	0.5
Franklin Boulevard from Laguna Boulevard to Whitelock Parkway	56.4	56.7	57.0	5	0.3	0.6

Notes: dB = decibel; L_{dn} = day-night level.

¹ Noise levels account for attenuation provided by existing structures that would block the line of sight between the modeled roadway segment and nearest residential land uses. The roadway segment for West Taron Drive from Riparian Drive to Elk Grove Boulevard is not included in the table because no residential receptors are located along this section of roadway. Refer to Appendix I for all traffic noise modeling input data and output results.

Source: Noise levels modeled by Ascent Environmental in 2020

As shown in Table 3.11-15, residences along some roadway segments would experience noise levels that exceed the City's exterior noise standards of 60 dB L_{dn} for residential land uses. However, given that typical residential construction provides an exterior-to-interior attenuation of at least 24 dB (EPA 1978:11), exterior noise levels would need to be at least 69 dB L_{dn} to exceed the City's interior noise standard of 45 dB L_{dn} for residential land uses. As shown in Table 3.11-15, none of the residential buildings located along the affected local roadway segments would be exposed to exterior noise levels greater than 69 dB L_{dn}; therefore, none would experience interior noise levels from outdoor traffic that exceed the interior noise standard of 45 dB L_{dn}.

The City has a noise standard of 60 dB L_{dn} for transportation noise sources that applies at the outdoor activity areas of residential land uses, as shown in Table 3.11-3. Recognizing that this standard is often exceeded under existing conditions, which is shown for some roadway segments listed in Table 3.11-15, the *City of Elk Grove General Plan* states that its incremental increase criteria, as detailed in Policy N-2-2 in Section 3.11.1, "Regulatory Setting," should be applied as the City's designated thresholds of significance for CEQA analysis of transportation noise impacts. As shown in Table 3.11-15, the addition of Project-generated traffic to the surrounding roadway network would not result in noise increases greater than the applicable incremental noise standard. This is the case for the increase from existing conditions to existing-plus-Phase-1-buildout, as well as the increase from existing conditions to existing-plus-full-buildout. Additionally, residential land uses along modeled local roadway segments would not experience a perceptible traffic noise increase because none of the roadway segments would experience a noise increase greater than 3 dB, which is the increment at which the human ear can perceive a change in loudness (Caltrans 2013b:2-10). Because Project-generated traffic would not result in the exceedance of the interior noise standard of 45 dB for residential land uses, would not exceed any of the City's incremental increase criteria for assessing traffic noise, and would not result in a perceptible traffic noise increases at any residential land uses along affected roadway segments, this impact would be **less than significant**.

Mitigation Measures

No mitigation is required.

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3.12 POPULATION, EMPLOYMENT, AND HOUSING

This section describes the existing population and housing conditions on the Project site and in the surrounding area. Descriptions and analysis in this section are based on information provided by the *Elk Grove General Plan*, the California Department of Finance (DOF), and the Sacramento Area Council of Governments (SACOG). The analysis includes a description of the methods used for assessment, as well as the potential direct and indirect impacts of Project implementation.

Comments received in response to the NOP included concerns related to the methodology used to classify housing, the potential for the Project to induce growth, and consistency with planning documents. These topics are addressed below.

3.12.1 Regulatory Setting

FEDERAL

There are no federal plans, policies, regulations, or laws related to population and housing that are applicable to the Project.

STATE

There are no State plans, policies, regulations, or laws related to population and housing that are applicable to the Project.

LOCAL

Sacramento Area Council of Governments' Metropolitan Transportation Plan/Sustainable Communities Strategy

In 2019, SACOG adopted the 2020 Metropolitan Transportation Plan/Sustainable Communities Strategy (MTP/SCS), a regional growth strategy based on local land use plans. The MTP/SCS forecasts that the Sacramento region will add 620,000 people, as well as the jobs and housing to support them, between 2016 and 2040 (SACOG 2019:24).

The Project site is located in an area identified as an Established Community in the MTP/SCS (SACOG 2019:Figure 3.5). Local land use plans generally aim to maintain the existing character and land use pattern in these areas, many of which are suburbs. Selective infill development, consistent with existing planning designations, is projected to occur gradually. Nearly two-thirds of the region's new housing and 85 percent of its job growth between 2016 and 2040 is expected to be in Center and Corridor (i.e., downtowns and commercial corridors) and Established Communities (SACOG 2019:39).

City of Elk Grove General Plan

The 2019 City General Plan is a broad framework for planning the future of Elk Grove. It is the official policy statement of the City Council that is used to guide the private and public development of the City in a manner to gain the maximum social and economic benefit to the citizens. At buildout under the General Plan, the City is expected to have 102,865 dwelling units, 332,254 residents, and 122,155 jobs (City of Elk Grove 2019:Table 3-2).

The following General Plan policies are applicable to this analysis:

- **Policy ED-2-1:** Continue to improve Elk Grove's jobs/housing ratio by expanding local employment opportunities, with an emphasis on attracting jobs in sectors and industries that are well matched for the skills of the local workforce.

- ▶ **Policy ED-2-2:** Maximize the use of nonresidential land for employment-generating and revenue-generating uses.
- ▶ **Policy ED-2-5:** Support the creation and retention of jobs that provide sustainable wages and benefits.
- ▶ **Policy LU-1-2:** Foster development patterns that will achieve a complete community in Elk Grove, particularly with respect to increasing jobs and economic development and increasing the City's jobs-to-employed resident ratio while recognizing the importance of housing and a resident workforce.
- ▶ **Policy LU-1-8:** Seek to designate sufficient land in all employment-generating categories to provide opportunities for Elk Grove's working population and jobs in categories matching resident's employment level.

3.12.2 Environmental Setting

During the 1990s, Elk Grove's population grew by more than 70 percent, while corresponding job growth during that period occurred primarily in other parts of Sacramento County and the region. Before Elk Grove was incorporated, Sacramento County's General Plan vision for the unincorporated Laguna and Elk Grove Community Plan Areas was primarily that those communities would continue to function as suburbs of Sacramento (City of Elk Grove 2019:5-7). Following incorporation, the City has attracted more businesses, although it still largely serves as a suburb of the City of Sacramento.

POPULATION

The population of the City was estimated to be 173,170 on January 1, 2019 (DOF 2020). The City has an estimated development capacity of 332,254 residents (City of Elk Grove 2019:Table 3-2). This figure reflects the maximum possible population, as determined by the number of residential units possible at the different maximum densities allowed for each land use designation and the amount of land area within those designations. However, the General Plan does not specify a specific date for development potential, and states that the development capacity is unlikely to be reached because it would require that every lot in Elk Grove be developed to its maximum potential (City of Elk Grove 2019:3-20).

HOUSING

The U.S. Census Bureau defines a housing unit as a house, an apartment, a group of rooms, or a single room occupied or intended for occupancy as separate living quarters. College dormitories are considered noninstitutional group quarters and are excluded from the housing unit inventory. For the purpose of population surveys in the decennial census, individuals are counted at their "usual residence." "Usual" is defined as the place where the person lives and sleeps most of the time, or the place he or she considers to be his or her usual residence. Therefore, most students living in dormitories would not be included (U.S. Census Bureau 2018).

According to DOF, the total number of housing units in the City was 54,541 in 2019, with an average household size of 3.27 persons per unit, compared to an average household size of 2.79 persons in Sacramento County. Approximately 90 percent of these housing units were attached and detached single-family houses, compared to 71 percent countywide (DOF 2019). At buildout of the General Plan, the City has the potential to accommodate 102,865 dwelling units (City of Elk Grove 2019:Table 3-2).

EMPLOYMENT

Elk Grove has historically functioned as a bedroom community. Many residents work elsewhere, and the City has fewer jobs than residents. According to the City's 2016 Employment Dynamics Report, there were 8,710 business establishments offering employment opportunities in the City at the end of 2013, primarily in education, health care, and social services; retail; and administrative and waste services industries (City of Elk Grove 2019). The number of

jobs in the City is projected to increase from 45,463 in 2013 to as many as 122,155 with buildout of the General Plan (City of Elk Grove 2019:Table 3-2).

There are existing businesses on the Project site, including CNU, which currently employs 49 full-time faculty and 46 part-time faculty, as well as a staff of 46 full-time and 16 part-time employees. The ALLDATA building and exiting retail in the Stonelake Landing shopping center also provide opportunities for employment.

JOBS/HOUSING BALANCE

A jobs/housing ratio is a calculation of jobs per housing unit available in an area; a perfect balance is expressed as 1:1, or 1.0. A low jobs/housing ratio (less than 1.0) describes a housing-rich community with fewer available jobs for residents, while a high ratio (more than 1.1) describes a jobs-rich area with more jobs available for residents. In a community with a low jobs/housing ratio, working-age residents are more likely to need to commute to work (City of Elk Grove 2019:3-9).

Elk Grove is located near Sacramento, which is a large employment center, and it has relatively lower housing prices and generally offers more amenities than locations closer to the capital. These factors make the City an attractive housing location for many families and, along with other factors, contribute to a lower jobs/housing ratio (0.84) in Elk Grove than in locations more proximate to the region's existing employment centers (City of Elk Grove 2019:3-9).

The Land Use Plan in the *Elk Grove General Plan* has been designed to support opportunities that would result in a jobs/housing ratio of approximately 1.2 at buildout. This ratio is considerably higher than existing conditions but still below SACOG's planned regional average of 1.4, indicating that the City will increase its employment base while also continuing to serve an important role as a residential community for employees throughout the region (City of Elk Grove 2019:3-10).

3.12.3 Impacts and Mitigation Measures

METHODOLOGY

Impacts on population and housing were assessed by reviewing existing and anticipated population and housing projections prepared by the *Elk Grove General Plan*, DOF, and SACOG. The Project's impacts were evaluated by determining their consistency with these estimates and projections. Population and employment growth, as an economic or social change, is not considered a significant effect on the environment (pursuant to State CEQA Guidelines Section 15131). Growth that is consistent with planning documents that have undergone separate environmental evaluation would generally result in similar potential for environmental impacts and the requisite demand for infrastructure would typically be incorporated into the plans of the respective utilities. However, where growth could lead to physical changes, the potential for effects is evaluated. For further discussion of growth-inducing effects, see Chapter 6, "Other CEQA-Mandated Sections."

THRESHOLDS OF SIGNIFICANCE

A population, employment, and housing impact would be significant if implementation of the Project would:

- ▶ induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure), or
- ▶ displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere.

ISSUES NOT DISCUSSED FURTHER

The Project includes redevelopment of property currently developed for the existing CNU Medical College and Pharmacy College, an office building (ALLDATA), a brewery, an animal hospital, several eating establishments, and other commercial and retail uses. The Project would not displace existing people or housing, necessitating the construction of replacement housing elsewhere. This impact is not discussed further.

ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Impact 3.12-1: Directly or Indirectly Induce Substantial Unplanned Population Growth

Implementing the Project would increase the potential employment opportunities on the Project site. The 3,843 jobs would represent approximately 3 percent of the 122,155 jobs anticipated with buildout of the General Plan and would not be expected to exceed the City's development capacity, as well as within the forecasts of the SACOG 2020 MTP/SCS, and would not be expected to exceed the City's development capacity. The type and location of the employment opportunities provided through Project implementation would be compatible with the relevant policies in the *Elk Grove General Plan*. Therefore, implementing the Project would not result in substantial unplanned population growth. This impact would be **less than significant**.

As described above, the student dormitories proposed as part of the Project would be classified as noninstitutional group quarters by the federal government. The students would generally not be included in the population counts conducted by the Census, which are relied on by local governments to approximate total population. Therefore, the Project would not directly induce population growth through the addition of housing. Regardless of residence status, the effects of the student housing on demand for public services and utilities has been evaluated throughout this draft EIR.

The Project would also increase employment opportunities on the Project site during construction and at buildout. It is assumed that up to 225 construction workers may be required during the most intense years of construction (Appendix D). As of December 2018, there were 37,800 construction jobs in Sacramento County (EDD 2020). Therefore, it is likely that the employment opportunities generated by construction of the Project would be filled by individuals in the construction industry who currently reside in the Project area and that construction workers would not relocate to the area in substantial numbers. Therefore, the Project would not directly induce population growth related to construction.

Upon completion of Phase 3, the Project would support approximately 4,000 jobs, resulting in a net increase of approximately 3,843 jobs provided by CNU at buildout. In addition, the nature of some of the employment opportunities would change from jobs primarily in the service industries to opportunities for high-paid, highly skilled physicians and nurses. It is possible that the employment opportunities at the existing business establishments would be either incorporated into the Project or relocated elsewhere in the City at existing commercial and office centers.¹ Therefore, the Project may increase the employment opportunities in the City. This is consistent with General Plan Policy ED-2-5: Support the creation and retention of jobs that provide sustainable wages and benefits.

The direct addition of 3,843 jobs would represent approximately 3 percent of the 122,155 jobs anticipated with buildout of the General Plan and would not be expected to exceed the City's development capacity. As indicated above, under the current Land Use Diagram, buildout of the General Plan may result in a jobs/housing ratio of approximately 1.2. This ratio is below SACOG's planned regional average of 1.4. Through the addition of employment opportunities for skilled workers, the Project may aid in the attainment of the desired increase in the job/housing ratio in the region. The Project would be consistent with General Plan Policy ED-2-1, regarding an improved jobs/housing balance achieved through expanding local employment opportunities anticipated by the General Plan.

Implementing the Project would result in increased employment in proximity to a major transportation corridor (I-5) and would be generally cohesive with the established land use pattern and goals for community growth. The land use

¹ There were 30 office and commercial sites in the City available for lease in May 2020 (Showcase.com 2020).

designation changes would be consistent with General Plan Policy LU-1-8, regarding designation of land in all employment-generating categories to provide opportunities for Elk Grove's working population and jobs in categories matching resident's employment level; Policy ED-2-2, regarding maximizing the use of nonresidential land for employment-generating and revenue-generating uses; and Policy LU-1-2, regarding fostering development patterns that achieve a complete community in Elk Grove, particularly with respect to increasing jobs and economic development.

Additionally, although the Project was not yet proposed when the previous MTP/SCS was written, the MTP/SCS assumed construction of a new hospital and an increase in medical employment overall in the City because of the size of the City and the population growth expected. SACOG's recently adopted 2020 MTP/SCS also includes the Project area in the Established Community type. The 2020 MTP/SCS forecasts about 6,290 new housing units and 8,500 new employees in the Established Community Type in the City. In comparison to the 2020 MTP/SCS, the Project would account for approximately 2 percent of total new housing units and approximately 47 percent of total new employees in the Established Community Type in Elk Grove by 2040. Hospitals and medical centers are generally considered public and office uses in SACOG's forecast; therefore, the Project is consistent with the land use assumptions for the Established Community Type in the 2016 MTP/SCS. SACOG has determined that the Project is consistent with the land use, density, intensity, and related policies of the MTP/SCS (Appendix C).

Therefore, the Project would not result in substantial unplanned population growth. This impact would be **less than significant**.

Mitigation Measures

No mitigation is required.

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3.13 PUBLIC SERVICES

This section provides an overview of existing public services in the City and evaluates the potential for implementation of the CNU Medical Center Project to affect the availability, service level, and/or capacity of public services, including fire protection services, police protection services, public schools, and parks and recreation, and if such an effect is determined to occur, whether new or expanded facilities would be required that could result in a potentially significant impact on the environment. Publicly provided utility services, such as water and wastewater treatment, stormwater management, solid waste disposal, electricity, and natural gas services, are addressed in Section 3.15, "Utilities and Service Systems."

Comments in response to the NOP regarding public services were received from individuals and organizations in the community regarding fire and police protection; development fees for public services; and indirect effects on public services, including from helicopter-ignited fires, emergencies related to the homeless, and drug/alcohol-related emergencies. These issues are addressed in the impact analysis below.

3.13.1 Regulatory Setting

FEDERAL

Higher Education Opportunity Act

The Campus Fire Safety Right-to-Know Act in the Higher Education Opportunity Act (20 U.S. Code 1092) was signed by President Bush on August 1, 2008. Specifically, the legislation requires that a fire safety report be distributed by university institutions containing statistics concerning the following topics in each on-campus student housing facility during the most recent calendar year for which data are available:

- ▶ number of fires and the cause of each fire,
- ▶ number of injuries related to a fire that resulted in treatment at a medical facility,
- ▶ number of deaths related to a fire, and
- ▶ value of property damage caused by a fire.

The fire safety report must include a description of each on-campus student housing facility's fire safety system, including the fire sprinkler system and the number of regular mandatory supervised fire drills. It also must identify the policies or rules on portable electrical appliances, smoking, and open flames (such as candles); procedures for evacuation; and policies regarding fire safety education and training programs provided to students, faculty, and staff. If determined necessary by the institution, the report must also describe plans for future improvements in fire safety.

STATE

California Fire Code

The 2019 California Fire Code, which incorporates by adoption the 2018 International Fire Code, contains regulations related to the construction, maintenance, and use of buildings. Topics addressed in the California Fire 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.

California Health and Safety Code

State fire regulations are set forth in Sections 13000 et seq. of the California Health and Safety Code, which includes regulations for building standards (as set forth in the California Building Code); fire protection and notification systems; fire protection devices, such as extinguishers and smoke alarms; high-rise building and childcare facility standards; and fire-suppression training.

Uniform Fire Code (Title 24, Part 9)

The Uniform Fire Code (Fire Code) (California Code of Regulations, Title 24, Part 9) contains regulations relating to construction, maintenance, and use of buildings. Topics addressed in the Fire 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 Fire Code also contains specialized technical regulations related to fire and life safety.

Leroy F. Greene School Facilities Act

The Leroy F. Greene School Facilities Act (Chapter 407, Statutes of 1998) places limitations on cities and counties with respect to mitigation requirements for school facilities. It permits school districts to levy fees, based on justification studies, for the purposes of funding construction of school facilities, subject to established limits. The act further states that payment of these fees by a development project is considered adequate to reduce impacts of that project on schools to a less-than-significant level for the purposes of CEQA review and compliance.

School districts that can establish a need by completing an annually updated fee justification study are authorized to collect school impact fees on new residential and commercial/industrial development in accordance with Education Code Section 17620 and Government Code Section 65995. The development school impact fees are intended to provide the local school district's 50 percent share of the cost of new school construction.

The Elk Grove Unified School District (EGUSD) has established school mitigation fees for residential development at \$6.43 per square foot and \$0.61 per square foot for commercial/industrial development.

LOCAL

City of Elk Grove General Plan

The City General Plan (City of Elk Grove 2019) contains the following policies relevant to public services and the Project:

- ▶ **Policy ER-4-1:** Cooperate with the Cosumnes Community Services District (CCSD) Fire Department to reduce fire hazards, assist in fire suppression, and promote fire safety in Elk Grove.
- ▶ **Policy ER-4-2:** Work with the CCSD to develop a fire prevention plan that lists major fire hazards, proper handling and storage procedures for hazardous materials, potential ignition sources and their control, and the type of fire protection equipment necessary to control each major hazard.
- ▶ **Policy SAF-1-2:** Encourage the use of Crime Prevention Through Environmental Design (CPTED) principles in the design of projects and buildings, as well as parks and trails.
- ▶ **Policy SAF-1-3:** Coordinate with the CCSD Fire Department to ensure that new station siting and resources are available to serve local needs.
- ▶ **Policy SAF-1-4:** Expand emergency response services as needed due to community growth.
- ▶ **Policy INF-1-2:** Require that water flow and pressure be provided at sufficient levels to meet domestic, commercial, industrial, and firefighting needs.
- ▶ **Policy IFP-1-7:** New development shall fund its fair share portion of impacts to all public facilities and infrastructure as provided for in State law.

- ▶ **Policy IFP-1-8:** Infrastructure improvements must be financed and/or constructed concurrent with or prior to completion of new development.
- ▶ **Policy IFP-1-10:** Except when prohibited by state law, the City will endeavor to ensure that sufficient capacity in all public services and facilities will be available on time to maintain desired service levels and avoid capacity shortages, traffic congestion, or other negative effects on safety and quality of life.

City of Elk Grove Municipal Code

Chapter 16.85: Elk Grove Fire Fee

The City established a fire fee to fund the cost of capital facilities (fire protection facilities and equipment) to meet fire protection service needs by the CCSD. This fee is paid at the issuance of building permits.

Chapter 17.04: California Fire Code

The City adopted the 2019 California Fire Code with some local amendments as set forth in Section 17.04.010. Section 17.04.020 designates the chief of the Cosumnes Community Services District (CSD) Fire Department or authorized designee the authority to enforce this chapter of the Municipal Code.

3.13.2 Environmental Setting

FIRE PROTECTION

The Cosumnes CSD Fire Department provides fire prevention, fire protection, and emergency medical and rescue services to the City, including the Project site; the City of Galt; and unincorporated areas in the region. The department's service area covers more than 157 square miles and a population of more than 200,000.

Under the direction of the fire chief, the Department is divided into seven divisions: Administration, Operations, Emergency Medical Services, Fire Prevention, Fleet, Training, and Special Operations. The Cosumnes CSD Fire Department also shares common jurisdictional boundaries and participates in a regional automatic/mutual aid agreement with the Sacramento Metropolitan Fire District and the City of Sacramento Fire Department. The Cosumnes CSD Fire Department also has a mutual aid agreement with the surrounding volunteer fire districts in southern Sacramento County, including the Wilton, Courtland, Walnut Grove, and Herald Fire Districts. As a result of the existing automatic and mutual aid agreements, the closest unit available is dispatched to an incident regardless of fire district boundaries.

Eight fire stations and engine companies are strategically located throughout the department's service area. Six of them, as well as the department's headquarters and training center, are located in the City. The department consists of approximately 200 full-time employees, of which 159 are assigned to platoon, or shift, operations. Each platoon consists of eight advanced life support engine companies (staffed by eight personnel each), one aerial ladder truck (staffed by four personnel), seven paramedic ambulances (staffed by two personnel each), and one duty chief. The department's aerial ladder truck is equipped with a 105-foot ladder (McLaughlin, pers. comm., 2019; Cosumnes CSD Fire Department 2019a). The Cosumnes CSD Fire Department also has additional apparatus devoted to wildland fire, swiftwater rescue, confined space rescue, and mass casualty incidents. Fire prevention services, including new construction plan reviews, construction inspections, arson investigation, and fire code enforcement also are provided. During 2018, the Cosumnes CSD Fire Department responded to 19,790 incidents (Cosumnes CSD Fire Department 2019a, 2019b).

The fire stations closest to the Project are (Cosumnes CSD Fire Department 2019b):

- ▶ Station 75 at 2300 Maritime Drive, approximately 0.5 mile north of the Project site;
- ▶ Station 72 at 10035 Atkins Drive, approximately 2.5 miles east of the Project site; and
- ▶ Station 74 at 6501 Laguna Park Drive, 2.8 miles northeast of the Project site.

Station 75, which would be the first-due station for the Project site, is staffed with one advanced life support engine company.

The established response time goal for the department is for the first unit to arrive on scene within 7 minutes of receipt of the 911 call in the dispatch center, 90 percent of the time. The department's current 90th percentile response time is 7 minutes and 36 seconds to fire/emergency medical service incidents. Recent growth has resulted in longer travel distances to arrive on scene, causing an increase in response times. To address the increase in response times, the department has planned a new station near Big Horn Boulevard and Poppy Ridge Road for construction in mid-2020. This new station would be more than 4 miles east of the Project site (McLaughlin, pers. comm., 2019). The planned fire station is not included as part of the Project and is not planned as a result of the Project.

An important requirement for fire suppression is adequate fire flow, which is the amount of water, expressed in gallons per minute, available to control a given fire and the length of time this flow is available. The total fire flow needed to extinguish a structural fire is based on a variety of factors, including building design, internal square footage, construction materials, dominant use, height, number of floors, and distance to adjacent buildings. Minimum requirements for available fire flow at a given building are dependent on standards set in the California Fire Code.

LAW ENFORCEMENT

California Highway Patrol

The California Highway Patrol Valley Division provides services to the south Sacramento region from the division's South Sacramento office located at 6 Massie Court, Sacramento, approximately 6.5 miles northeast of the Project site. The office patrols sections of I-5, State Route 99, U.S. Highway 50, and Business 80, as well as 500 miles of unincorporated county roadways. In addition, the office provides programs such as child restraint seat checks, smart start classes, and age well drive smart classes to keep residents safe on highways and roadways (CHP 2019).

Elk Grove Police Department

Police protection services are provided by the Elk Grove Police Department (EGPD) for areas within the City. EGPD is headquartered at 8400 Laguna Palms Way, approximately 4.5 miles east of the Project site. EGPD is divided into four divisions: the Operations Division, the Investigations Division, the Administrative Services Division, and the Support Services Division. The Operations Division (Patrol) is responsible for responding to calls for services and is made up of eight patrol teams, canine officers, school resource officers, and the crisis response team (Flynn, pers. comm., 2020; Elk Grove Police Department 2019).

At the end of 2019, EGPD was staffed with 85 uniformed sworn and nonsworn officers from the Patrol Division, Traffic Bureau, and Problem Oriented Policing Unit that responded to calls for service within the City. In 2019, EGPD received 58,875 priority 1–7 police calls for service, resulting in approximately 693 calls per officer per year. Note that calls for service and staffing related to animal services have been excluded from this analysis (City of Elk Grove Police Department 2020).

EGPD's officer-to-resident population ratio standard is 0.81 sworn police officers per 1,000 residents, and EGPD's response time goal is 5 minutes for Priority 1 calls. In 2018, EGPD's actual response time was 5.1 minutes for Priority 1 calls, and in 2019, EGPD's response time was estimated at 5.25 minutes (Flynn, pers. comm., 2020).

The Project site is located within Beat 1 of the City (west of the railroad tracks and east of I-5). Beat 1 typically has a relatively low volume of calls for service and has almost no calls during the late evening and early morning hours. Because of the low volume of calls for service in this area, officers are often called to help other beats throughout the City (Solomon and Montgomery, pers. comm., 2020).

SCHOOLS

EGUSD provides educational services, including elementary, middle, and high schools, to the City, including the Project site. The area served by EGUSD covers 320 square miles, and EGUSD serves 63,917 students in 67 schools: 42

elementary schools, nine middle schools, nine high schools, four alternative education schools, a charter school, a special education school, and an adult education school (EGUSD 2019a; California Department of Education 2019). Schools serving the Project site include Elliott Ranch Elementary School, located approximately 0.6 mile southeast of the site at 10000 East Taron Drive; Elizabeth Pinkerton Middle School, located approximately 4.5 miles east of the site at 8365 Whitelock Parkway; and Cosumnes Oaks High School, located approximately 4.5 miles east of the site at 9850 Lotz Parkway (EGUSD 2019b).

As shown in Table 3.13-1, although districtwide enrollment has steadily increased, enrollment numbers at nearby schools have decreased since a peak in enrollment in the 2016/2017 school year. Currently, each of these schools has available capacity for additional students. According to EGUSD's Facilities Master Plan 2015–2025 Update (EGUSD 2016), the residing general education student population for both Elizabeth Pinkerton Middle School and Cosumnes Oaks High School is anticipated to exceed each school's capacity by 2025. The residing general education student population for Elliott Ranch Elementary School is anticipated to decrease and would remain below the school's capacity through 2025.

Table 3.13-1 School Enrollment

School/District	Number of Students						Available Capacity?
	2014/2015	2015/2016	2016/2017	2017/2018	2018/2019	School Capacity	
Elliott Ranch Elementary School (K–6)	932	926	920	848	796	906	Yes
Elizabeth Pinkerton Middle School (7–8)	1,068	1,084	1,134	1,111	1,074	1,424	Yes
Cosumnes Oaks High School (9–12)	2,148	2,237	2,398	2,350	2,207	2,568	Yes
Elk Grove Unified School District total enrollment	62,888	62,767	63,061	63,297	63,917	—	—

Sources: California Department of Education 2019; EGUSD 2016

LIBRARIES

The Sacramento Public Library system serves the Elk Grove community and provides services at the Elk Grove Library, located at 8900 Elk Grove Boulevard, approximately 6 miles east of the Project site, and at the Franklin Community Library, located at 10055 Franklin High Road, approximately 3 miles southeast of the site. The Elk Grove Library, which was established in 1908 and relocated to the current location in 2008, provides study and meeting rooms, book collections, and public computers. The Franklin Community Library was opened in 2002 at Franklin High School. The facility, jointly managed by EGUSD and the Sacramento Public Library, provides book collections and public computers to EGUSD and the community (City of Elk Grove 2020).

PARKS AND RECREATION

The Cosumnes CSD Parks and Recreation Department provides park and recreational services to the City and maintains more than 90 parks that, together, encompass more than 1,000 acres of parks, corridors, creeks, and trails in the Elk Grove community. Several park and recreational facilities are located within approximately 0.75 mile of the Project site, including Glen R. Houde Park, George Henderson Park, and Nottoli Park, which provide athletic courts and fields, playgrounds, and picnic areas. In addition, Town Square Park, which is located 1.2 miles northeast of the Project site, provides community gardens and a rose garden (Cosumnes CSD Parks and Recreation Department 2018:60, 61).

According to *Plan for Play: Parks, Recreation and Facilities Master Plan* (Cosumnes CSD Parks and Recreation Department 2018), approximately 5.26 acres of parkland were available per 1,000 population in 2017, and planned parklands would result in a park acreage standard of less than 5 acres per 1,000 population. The master plan concluded that community needs included visitor experiences (restrooms, shade, gathering places), off-street trails, major facilities (multipurpose recreation centers and aquatic centers), sports fields, and park facilities (Cosumnes CSD Parks and Recreation Department 2018:18, 21).

3.13.3 Impacts and Mitigation Measures

METHODOLOGY

Evaluation of potential public service impacts was based on a review of documents pertaining to the Project, including the *City of Elk Grove General Plan* and *Plan for Play: Parks, Recreation and Facilities Master Plan*; consultation with appropriate public service providers, such as Cosumnes CSD Fire Department, EGPD, and EGUSD; and review of aerial photographs of the Project area and surroundings. Impacts on public services that would result from the Project were identified by comparing existing service capacity and facilities against future demand associated with Project implementation.

THRESHOLDS OF SIGNIFICANCE

A public services impact would be significant if implementation of the Project would:

- ▶ result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities or the 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 any of the public services:
 - fire,
 - police protection,
 - schools,
 - parks, and
 - other public facilities;
- ▶ 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 that might have an adverse physical effect on the environment.

ISSUES NOT DISCUSSED FURTHER

The Project would include the construction of 150 dormitory units to house 300 students and would provide 4,000 jobs at the site. The anticipated 300 students would be enrolled at the university and would not affect public school services in the region. CNU currently provides 157 jobs on the Project site; therefore, implementing the Project would result in an increase of 3,843 jobs. It is anticipated that many of these jobs would be filled by the existing local labor force and would not result in a substantial increase in the City's population. In addition, the Project would not include any housing units. Construction workers for the Project would come from the construction labor pool available in the Sacramento area and would not require any relocations. Because implementing the Project would not result in substantial student population growth and existing schools have available capacity, as described above, the Project would not affect performance objectives for schools and would not require the construction or expansion of educational facilities. The Project would be required to pay school impact fees to EGUSD. Government Code Section 65995(h) states that the payment or satisfaction of a fee, charge, or other requirement levied or imposed pursuant to Section 17620 of the Education Code is deemed to be full and complete mitigation of the impacts for the planning, use, development, or provision of adequate school facilities. This issue is not discussed further.

As discussed above, implementing the Project would not result in substantial population growth. Therefore, the Project would not affect performance objectives for libraries and other public facilities, and no additional facilities would be needed or constructed as a result of this Project. This issue is not discussed further.

The Project would provide dormitory housing for university medical students that includes a parking structure with rooftop sports facilities for student use. The Project would not include housing construction or result in a substantial increase in population growth. Therefore, the Project would not substantially increase the use of or physically affect existing parks and recreational facilities. In addition, the construction or expansion of recreational facilities that might have an adverse physical effect on the environment would not be required. This issue is not discussed further.

ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Impact 3.13-1: Result in Substantial Adverse Physical Construction-Related Impacts Associated with the Provision or the Need for New or Physically Altered Fire Facilities, to Maintain Acceptable Service Ratios and Response Times

The Project would result in several new structures, including a hospital building, offices, parking, retail buildings, and dormitories. The Cosumnes CSD Fire Department has identified the need to hire additional staff to provide fire protection services and for the hospital to include additional fire safety equipment because of its height. However, no construction or expansion of fire protection facilities would be required to service the Project. Thus, the impact related to fire facilities would be **less than significant**.

The Project involves constructing a hospital, an outpatient clinic, a medical office building, a helicopter landing site, parking structures with retail, dormitories, and sport courts. Buildings would range in height primarily between one and five aboveground levels. The hospital would be approximately 261 feet tall. The Project site is located in an urban area of Elk Grove within the Cosumnes CSD Fire Department's existing service area and would not require any changes to the department's service area boundary. Therefore, the location of the Project would not directly affect response times. In addition, the Project would be designed to comply with building and fire codes (OSHPD and FAA standards) and include appropriate fire safety measures and equipment such as fire hydrants and sprinkler systems, smoke detectors, access to the helicopter landing site, fire control features at the helicopter landing site, and fire extinguishers, and adequate access and egress for emergency vehicles would be provided. and fire extinguishers, and it would provide adequate access and egress for emergency vehicles (McLaughlin 2020). As described in Chapter 2, "Project Description," the Project design includes a dedicated access point and left-turn lane on Elk Grove Boulevard for emergency vehicles only (fire vehicles and ambulances) consistent with General Plan Policies ER-4-1 and IFP-1-10.

High-rise buildings, such as the proposed hospital building, are serviced through a combination of ladders and protected stairwells. The Cosumnes CSD Fire Department operates and staffs one aerial ladder truck with a 105-foot ladder. Additional ladder truck companies are available through the department's regional automatic/mutual aid agreement with the Sacramento Metropolitan Fire District and the City of Sacramento Fire Department (McLaughlin, pers. comm., 2019; Clark, pers. comm., 2020). In addition, stairways would be constructed in compliance with the California Building Code and would meet fire-resistance ratings.

Because of the height and capacity of the proposed hospital, an strategically-located equipment cache and/or preplumbed breathing air system may be required at the hospital and the Cosumnes CSD Fire Department would need to staff a second shift duty chief (McLaughlin, pers. comm., 2019). The Project Applicant would be required to pay all development impact fees, including the City's fire fees, as well as any additional fees for equipment required to service the Project. Such fees would be used to fund necessary equipment improvements. This would be consistent with General Plan Policies ER-4-1, ER-4-2, SAF-1-3, IFP-1-7, and IFP-1-10.

Section 6.13.03 of the City Standard Construction Specifications would require that construction of the proposed off-site improvements (emergency left-turn pocket on Elk Grove Boulevard, Sacramento Municipal Utility District distribution and substation site improvements, and wastewater conveyance facilities) include construction traffic controls and allow uninterrupted passage of emergency vehicles.

Although the Project would require the Cosumnes CSD Fire Department to hire additional staff, the department's current facilities would be adequate to serve the Project, and no construction or expansion of fire facilities that may result in physical environmental impacts would be required. Thus, this impact would be **less than significant**.

Mitigation Measures

No mitigation is required.

Impact 3.13-2: Result in Substantial Adverse Physical Construction-Related Impacts Associated with the Provision or the Need for New or Physically Altered Police Facilities, to Maintain Acceptable Service Ratios and Response Times

Implementing the Project would result in an increase in demand for police services. The Project Applicant has signed an agreement that will be up for approval by the City at the same time as consideration of this Project. This Agreement would fund on-site law enforcement services. This Agreement would assist with upholding acceptable service ratios and response times without the need for additional police facilities. Thus, the impact related to police facilities would be **less than significant**.

The Project involves constructing a hospital, an outpatient clinic, a medical office building, a helipad, a parking structures with retail, dormitories, and sport courts and would provide approximately 4,000 on-site jobs and house 300 university students. The Project site is located in the City and would receive police protection and law enforcement services from EGPD.

Implementing the Project may result in an increase in service calls for police services for a range of circumstances. Under existing conditions, few or no service calls are received from the Project location and surrounding portion of the City (Beat 1).

To estimate the number of police service calls that may be generated by the Project, data was collected for police service calls at academic medical centers and hospitals in the greater Sacramento area and at university campuses throughout the State. Based on the data collected, the average hospital bed generates 1.81 police service calls per year, and a trauma-level designation hospital generates approximately four police service calls per hospital bed per year. Therefore, it is estimated that the proposed 400-patient-bed hospital designed to operate as a Level II Trauma Center would generate approximately 1,600 calls annually (City of Elk Grove Police Department 2020).

Considering the low police service call volume at the Project location and surrounding portion of the City (Beat 1) under existing conditions, implementing the Project would result in a substantial increase in service calls that may burden Citywide police protection services. However, as discussed in Chapter 2, "Project Description," the Project Applicant would enter into an agreement with the City to fund on-site law enforcement services to address the estimated increase in police service demand (see Appendix E). The Project Applicant would provide funding for two full-time officers (80 staff hours per week) under Phase 1 operations and would increase funding to allow for up to two additional full-time officers, resulting in four full-time officers total (160 staff hours per week) based on additional phases of the Project being complete and the City determining there is a need for additional dedicated officers. Additionally, the Project Applicant would fund the purchase of a City police vehicle for CNU and provide dedicated office space and workstations at the campus for use during operations, as well as submit a detailed security plan for police department approval before beginning hospital operations. This agreement for additional officers would ensure acceptable service ratios and response times without the need of additional police facilities. This would be consistent with General Plan Policy IFP-1-10.

Although the Project would require additional police services to maintain acceptable service ratios and response times, this demand has been met through an agreement between the Project Applicant and the City to fund additional services and provide office space at the Project. Therefore, no new or physically altered police facilities that would result in substantial adverse construction-related impacts would be required, and this impact would be **less than significant**.

Mitigation Measures

No mitigation is required beyond execution and implementation of the agreement with the City to fund on-site law enforcement services to address the estimated increase in police service demand (see Appendix E).

3.14 TRANSPORTATION

This section identifies applicable regulatory requirements and describes the existing transportation system in the vicinity of the Project site. It also evaluates impacts related to the generation of vehicle miles traveled (VMT); bicycle, pedestrian, and transit facilities; transportation hazards; emergency access; and temporary construction resulting from implementation of the proposed Project.

The analysis within this section is based on the analysis and findings of the *California Northstate – Transportation Analysis Report* prepared by Fehr & Peers in May 2020, which evaluates the environmental effects of the proposed Project based on the City CEQA significance thresholds contained within the *City of Elk Grove General Plan* and the *City's Transportation Analysis Guidelines*. The *California Northstate University – Transportation Analysis Report* is included as Appendix K and provides additional detailed data, modeling, and information related to the transportation analysis.

Comments on the NOP included concerns related to roadways and intersection operations/level of service, potential hazards related to a design feature or incompatible use, roadway and intersection infrastructure improvements, heliport design and notification requirements, emergency access, temporary construction-related transportation impacts, and transportation safety (see Appendix A).

Pursuant to Senate Bill 743, Public Resources Code Section 21099, and California Code of Regulations Section 15064.3, VMT has replaced congestion as the metric for determining transportation impacts under CEQA. A project's effect on automobile delay is no longer a consideration when identifying a significant impact; therefore, the impact of the Project on delay-based traffic operations is not addressed here. Parking concerns raised in the NOP are not considered environmental impacts under CEQA because it is not an effect on the environment. However, a parking analysis is required by the *City of Elk Grove Transportation Analysis Guidelines*. Therefore, the *California Northstate University – Transportation Analysis Report* includes a parking analysis for purposes of Project design considerations and conditions of approval by the City (Appendix K). All other comments are addressed in Sections 3.14.2 and 3.14.3, below.

3.14.1 Regulatory Setting

FEDERAL

Federal Aviation Administration

Structures that may present obstructions affecting navigable air space are required to have markings and lighting as provided under the Federal Aviation Administration's (FAA's) Advisory Circular 70/7460-1L Change 2 (Obstruction Marking and Lighting). FAA has determined that the Project would not be a hazard to air navigation provided that the hospital building is marked and lighted in accordance with Chapters 4 (Light Guideline), 8 (Dual Lighting with Red/Medium-Intensity Flashing White Light Systems), and 12 (Marking and Lighting Equipment and Information) of this advisory circular (Sanders 2020). These chapters identify the following requirements:

- ▶ type of lighting to be provided on the structure: aviation red obstruction lights (flashing and/or steady burn) during nighttime and medium-intensity flashing white obstruction lighting during daytime and twilight,
- ▶ provision of obstruction lighting (two or more) during construction to be placed on the structure at each level at which permanent obstruction lighting would be recommended and construction equipment lighting provided according to the standards as they apply to permanent structures,
- ▶ control device for the lighting system that changes the light intensity when ambient light conditions change (twilight to night and night to day), and
- ▶ structure markings using approved colors (international aviation orange, white, and yellow).

Lighting for hospital heliports is regulated under FAA's Advisory Circular 150/5390-2C (Heliport Design), Chapter 4 (Hospital Heliports), Section 415 (Heliport Lighting), which provides standards for perimeter lighting, taxiways, and beacons. These standards address the use of green lighting to identify the touchdown and liftoff area, final approach and takeoff area, and flight path alignments.

STATE

The California Department of Transportation (Caltrans) is responsible for operating and maintaining the State highway system. In the vicinity of the Project site, I-5 and State Route 99 fall under Caltrans jurisdiction.

California Department of Transportation Statewide Transportation Improvement Program

The California Statewide Transportation Improvement Program (STIP) is a multiyear, Statewide, intermodal program of transportation projects that is consistent with the Statewide transportation plan and planning processes and with metropolitan plans. The STIP is prepared by Caltrans in cooperation with the metropolitan planning organizations and regional transportation planning agencies (e.g., Sacramento Area Council of Governments [SACOG]). The STIP contains all capital and noncapital transportation projects or identified phases of transportation projects for funding under the Federal Transit Act and Title 23 of the U.S. Code.

California Department of Transportation Interregional Transportation Improvement Program

Caltrans's 5-year Interregional Transportation Improvement Program is prepared pursuant to Government Code 14526, Streets and Highways Code Section 164, and the California Transportation Commission's STIP Guidelines. Regional agencies work with Caltrans to identify projects that will address improvements to the interregional transportation system and improve the movement of people, vehicles, and goods between regions.

REGIONAL

SACOG is an association that includes the Counties of El Dorado, Placer, Sacramento, Sutter, Yolo, and Yuba, as well as 22 cities, including the City of Elk Grove. As a metropolitan transportation organization, SACOG is required to prepare a long-range transportation plan (the metropolitan transportation plan) for all modes of transportation, including public transit, automobile, bicycle, and pedestrian, every 4 years for the six-county area. In addition to preparing the region's long-range transportation plan, SACOG assists in planning for transit, bicycle networks, clean air, and airport land uses.

Metropolitan Transportation Plan/Sustainable Communities Strategy

SACOG is responsible for preparing and updating the Metropolitan Transportation Plan/Sustainable Communities Strategy (MTP/SCS) and the corresponding Metropolitan Transportation Improvement Program (MTIP) for the six-county Sacramento region. In response to this requirement, SACOG completed the 2020 MTP/SCS. The purpose of the 2020 MTP/SCS is to establish regional access and identify mobility goals; identify present and future transportation needs, deficiencies, and constraints within the transportation system; analyze potential solutions; estimate available funding; and propose investments. On November 18, 2019, the SACOG Board of Directors adopted the 2020 update to the MTP/SCS.

The Congestion Management Process (CMP) and MTP/SCS are developed as a single integrated document. As part of the MTP/SCS, SACOG's CMP addresses the six-county Sacramento region and the transportation network therein. The CMP focuses on travel corridors with significant congestion and critical access and mobility needs to identify projects and strategies that meet CMP objectives. Transportation projects are nominated by local agencies and analyzed against community priorities identified through public outreach, as well as technical performance and financial constraints.

Metropolitan Transportation Improvement Program

SACOG, the federally designated metropolitan planning organization for the region, prepares and adopts the MTIP approximately every 2 years. The MTIP is a short-term listing of surface transportation projects that receive federal

funds, are subject to a federally required action, or are regionally significant. SACOG adopted the 2019–22 MTIP in December 2018 (SACOG 2018). The 2019–22 MTIP covers 4 years of programming: federal fiscal years 2019–2022. The project listing in the MTIP provides a detailed description for each individual project in the 2019–22 MTIP, including those in Sacramento County and the City of Elk Grove.

Regional Bicycle, Pedestrian and Trails Master Plan

SACOG approved the *Regional Bicycle, Pedestrian, and Trails Master Plan* in April 2015 (SACOG 2015). It envisions a complete transportation system that supports healthy living and active communities where bicycling and walking are viable and popular travel choices in a comprehensive, safe, and convenient network. The *Regional Bicycle, Pedestrian, and Trails Master Plan* is intended to guide the long-term decisions for the Bicycle and Pedestrian Funding Program. The projects included in this plan are regionally significant projects that require at least partial regional funding. This plan is not fiscally constrained, so it contains at least 20 years' worth of projects. As part of a master plan update in spring 2018, SACOG finalized an update to the planned and existing bikeway networks for use in the Project Performance Assessment data tool, a tool developed by SACOG to be used to analyze transportation investments at the project level.

LOCAL

City of Elk Grove General Plan

The most recent City General Plan was adopted in December 2019. The Mobility chapter of the General Plan contains policies designed to further the City's mobility strategy. The Mobility chapter incorporates and expands the City's complete streets policies; supports key implementation tools, such as the Bicycle, Pedestrian, and Trails Master Plan, the Transportation Analysis Guidelines, and the Climate Action Plan; and identifies measures to support alternative transportation investments, as well as transit-friendly and active transportation-friendly development (City of Elk Grove 2019a).

As detailed above, a project's effect on automobile delay is no longer a consideration when identifying a significant impact under CEQA; thus, City General Plan policies related to intersection and roadway performance are not included here. However, the *California Northstate University – Transportation Analysis Report* is included as Appendix K and addresses and analyzes the effects of the Project on intersection and roadway performance.

The following policies and standards related to transportation are relevant to the CEQA analysis of the Project:

- **Policy MOB-1-1:** Achieve State-mandated reductions in VMT by requiring land use and transportation projects to comply with the following metrics and limits. These metrics and limits shall be used as thresholds of significance in evaluating projects subject to CEQA.

Projects that do not achieve the daily VMT limits outlined below shall be subject to all feasible mitigation measures necessary to reduce the VMT for, or induced by, the project to the applicable limits. If the VMT for or induced by the project cannot be reduced consistent with the performance metrics outlined below, the City may consider approval of the project, subject to a statement of overriding considerations and mitigation of transportation impacts to the extent feasible, provided some other stated form of public objective including specific economic, legal, social, technological or other considerations is achieved by the project.

- (a) **New Development** – Any new land use plans, amendments to such plans, and other discretionary development proposals (referred to as "development projects") are required to demonstrate a 15 percent reduction in VMT from existing (2015) conditions. To demonstrate this reduction, conformance with the following land use and cumulative VMT limits is required:

- i. **Land Use** – Development projects shall demonstrate that the VMT produced by the project at buildout is equal to or less than the VMT limit of the project's General Plan land use designation, as shown in Table 6-1 [presented as Table 3.14-1 in this EIR], which incorporates the 15 percent reduction from 2015 conditions.

- ii. **Cumulative for Development Projects in the Existing City** – Development projects within the existing (2017) City limits shall demonstrate that cumulative VMT within the City including the project would be equal to or less than the established Citywide cumulative limit of 6,367,833 VMT (total daily VMT).
- iii. **Cumulative for Development Projects in Study Areas** – Development projects located in Study Areas shall demonstrate that cumulative VMT within the applicable Study Area would be equal to or less than the established limit shown in Table 6-2 [presented as Table 3.14-2 in this EIR].

Table 3.14-1 Vehicle Miles Traveled by Land Use Designation

Land Use Designation	VMT Limit (Daily Per Service Population)
Commercial and Employment Land Use Designations	
Community Commercial	41.6
Regional Commercial	44.3
Employment Center	47.1
Light Industrial/Flex	24.5
Light Industrial	24.5
Heavy Industrial	39.5
Mixed Land Use Designations	
Village Center Mixed Use	41.6
Residential Mixed Use	21.2
Public/Quasi Public and Open Space Land Use Designations	
Parks and Open Space ¹	0.0
Resource Management and Conservation ¹	0.0
Public Services	53.1
Residential Land Use Designations	
Rural Residential	34.7
Estate Residential	49.2
Low Density Residential	21.2
Medium Density Residential	20.9
High Density Residential	20.6
Other Land Use Designations	
Agriculture	34.7

Note: VMT = vehicles miles traveled.

¹ These land use designations are not anticipated to produce substantial VMT, because they have no residents and few to no employees. These land use designations therefore have no limit and are exempt from analysis.

Source: City of Elk Grove 2019a

Table 3.14-2 Study Area Total Vehicle Miles Traveled Daily Limits

Study Area	VMT Limit (Total VMT at Buildout)
North Study Area	37,622
East Study Area	420,612
South Study Area	1,311,107
West Study Area	705,243

Note: VMT = vehicles miles traveled.

Source: City of Elk Grove 2019a

- ▶ **Policy MOB-1-2:** Consider all transportation modes and the overall mobility of these modes when evaluating transportation design and potential impacts during circulation planning.
- ▶ **Policy MOB-1-3:** Strive to implement the roadway performance targets (RPT) for operations of roadway segments and intersections, while balancing the effectiveness of design requirements to achieve the targets with the character of the surrounding area as well as the cost to complete the improvement and ongoing maintenance obligations. The Transportation Network Diagram reflects the implementation of the RPT policy at a macro level; the City will consider the specific design of individual segments and intersections in light of this policy and the guidance in the Transportation Network Diagram.

To facilitate this analysis, the City shall use the following guidelines or targets. Deviations from these metrics may be approved by the approving authority (e.g., Zoning Administrator, Planning Commission, City Council).

(a) Vehicular Design Considerations – The following targets apply to vehicular mobility:

- i. **Intersection Performance** – Generally, and except as otherwise determined by the approving authority or as provided in this General Plan, the City will seek to achieve, to the extent feasible and desired, the peak-hour delay targets identified in [General Plan] Table 6-3. [See Appendix K for an analysis of Project consistency with these requirements.]
 - ii. **Roadway Performance** – Generally, and except as otherwise determined by the approving authority or as provided in this General Plan, the City will seek to achieve, to the extent feasible and desired, the average daily traffic design targets identified in [General Plan] Table 6-4. [See Appendix K for an analysis of Project consistency with these requirements.]
 - iii. **Pedestrian and Bicycle Performance** – The City will seek the lowest stress scores possible for pedestrian and bicycle performance after considering factors including design limitations and financial implications.
- ▶ **Policy MOB-3-1:** Implement a balanced transportation system using a layered network approach to building complete streets that ensure the safety and mobility of all users, including pedestrians, cyclists, motorists, children, seniors, and people with disabilities.
 - ▶ **Policy MOB-3-2:** Support strategies that reduce reliance on single-occupancy private vehicles and promote the viability of alternative modes of transport.
 - **Standard MOB-3-2.a:** Require new development to install conduits for future installation of electric vehicle charging equipment.
 - ▶ **Policy MOB-3-3:** Whenever capital improvements that alter street design are being performed within the public right-of-way, retrofit the right-of-way to enhance multimodal access to the most practical extent possible.
 - ▶ **Policy MOB-3-7:** Develop a complete and connected network of sidewalks, crossings, paths, and bike lanes that are convenient and attractive, with a variety of routes in pedestrian-oriented areas.
 - ▶ **Policy MOB-3-10:** Design and plan roadways such that the safety of the most vulnerable user is considered first using best practices and industry design standards.
 - ▶ **Policy MOB-3-13:** Continue to design streets and approve development applications in a manner that reduces high traffic flows and parking demand in residential neighborhoods.
 - ▶ **Policy MOB-3-17:** Ensure new multifamily and commercial developments provide bicycle parking and other bicycle support facilities appropriate for the users of the development.
 - ▶ **Policy MOB-4-1:** Ensure that community and area plans, specific plans, and development projects promote context-sensitive pedestrian and bicycle movement via direct, safe, and pleasant routes that connect destinations inside and outside the plan or project area. This may include convenient pedestrian and bicycle connections to public transportation.

- ▶ **Policy MOB-4-5:** Encourage employers to offer incentives to reduce the use of vehicles for commuting to work and increase commuting by active transportation modes. Incentives may include a cash allowance in lieu of a parking space and on-site facilities and amenities for employees such as bicycle storage, shower rooms, lockers, trees, and shaded seating areas.
- ▶ **Policy MOB-7-4:** Require new development projects to provide funding or to construct roadway/intersection improvements to implement the City's Transportation Network Diagram. The payment of adopted roadway development or similar fees, including the City Roadway Fee Program and the voluntary I-5 Subregional Fee, shall be considered compliant with the requirements of this policy with regard to those facilities included in the fee program, provided the City finds that the fee adequately funds required roadway and intersection improvements. If payment of adopted fees is used to achieve compliance with this policy, the City may also require the payment of additional fees if necessary to cover the fair share cost of facilities not included in the fee program.
- ▶ **Policy NR-4-4:** Promote pedestrian/bicycle access and circulation to encourage residents to use alternative modes of transportation in order to minimize direct and indirect emissions of air contaminants.
- ▶ **Policy NR-4-5:** Emphasize demand management strategies that seek to reduce single-occupant vehicle use in order to achieve State and federal air quality plan objectives.

City of Elk Grove Transportation Analysis Guidelines

The *City of Elk Grove Transportation Analysis Guidelines* (City of Elk Grove 2019b) establish the protocol for transportation analysis studies and reports based on the current state-of-the-practice in transportation planning and engineering. As detailed above, a project's effect on automobile delay is no longer a consideration when identifying a significant impact under CEQA; thus, the portions of the *Transportation Analysis Guidelines* not directly applicable to CEQA are not included here. However, the *California Northstate University – Transportation Analysis Report* is included as Appendix K and addresses and analyzes all of the required elements detailed in the *Transportation Analysis Guidelines*.

The *Transportation Analysis Guidelines* includes guidance for transportation analysis as it pertains to the City General Plan VMT policy significance thresholds (i.e., General Plan Policy MOB-1-1) for CEQA analysis of future projects. The *Transportation Analysis Guidelines* include guidance and requirements for project-level VMT analysis, including project screening, analysis methodology, significance criteria, impact assessment, and mitigation strategies.

The *Transportation Analysis Guidelines* and City General Plan specify total daily VMT and VMT per service population as the basis for VMT analysis. The following describes these two VMT metrics and their intended use:

- ▶ **VMT per service population:** Includes the sum of all vehicle miles of travel produced by individual land uses on a project site divided by the sum of total employees working on the site, residents living in the land uses, students attending classes, patients receiving care, or visitors in the project. The VMT per service population metric is used to assess a project against specific land use VMT limits. The City refers to this as the project-level VMT impact.
- ▶ **Total daily VMT:** Includes the sum of all daily vehicle miles of travel produced by all uses within the City or applicable study area (i.e., the future development areas outside of the 2019 City limits but within the General Plan Planning Area). Since the Project is located within the City limits, the Citywide cumulative VMT limit that is outlined in Policy MOB-1-1(a)(ii) is used to assess the Project. The City refers to this as the cumulative VMT impact.

The *Transportation Analysis Guidelines* also include guidelines and requirements for multimodal (bicycle, pedestrian, and transit) transportation analysis, hazards related to design, on-site circulation, and construction. As part of the bicycle and pedestrian analysis requirements and guidance, a level of traffic stress (LTS) that measures user comfort on bicycle and pedestrian facilities is required.

City of Elk Grove Bicycle, Pedestrian, and Trails Master Plan

In July 2014, the City Council adopted the *Bicycle, Pedestrian, and Trails Master Plan* (City of Elk Grove 2014), which is intended to guide and influence pedestrian, bicycle, and trail policies, programs, and development standards to make biking and walking in the City more safe, comfortable, convenient, and enjoyable for all community members. The ultimate goal of the master plan is to increase the number of persons who walk and bicycle for transportation to

work, school, and errands and for recreation. The plan identifies existing facilities, opportunities, constraints, and destination points for bicycle users and pedestrians. The *Bicycle, Pedestrian, and Trails Master Plan* is currently being updated by the City. Additionally, the Project proposes an amendment to the City's *Bicycle, Pedestrian, and Trails Master Plan* to modify the planned Class I trail along the eastern border of the Project site adjacent to West Taron Drive with connections to West Taron Drive.

City of Elk Grove Climate Action Plan

The City Climate Action Plan 2019 Update (CAP) was adopted in February 2019 by the City and was incorporated into the current General Plan. Subsequently, the CAP was updated in December 2019. The CAP includes greenhouse gas (GHG) emission reduction targets, strategies, and implementation measures developed to help the City reach these targets. CAP Measure TACM-3 (Intercity Transportation Demand Management) focuses on the implementation of transportation demand measure (TDM) strategies to reduce the use of single-occupancy vehicle trips, with a target of achieving a 15-percent reduction in local commute traffic.

City of Elk Grove Transportation Demand Management Plan Guidelines

To aid the development of TDM plans, the City developed the TDM Plan Guidelines. These guidelines identify TDM measures by category that include marketing and promotion, bike facilities, transit benefits, commuter benefits, and parking facilities. The TDM Plan Guidelines outline the requirements for each TDM plan and identify the following for each TDM measure:

- ▶ **Measure Requirements** – describes the transportation amenity being provided, the amount/frequency of the amenity, and the property owner's responsibilities. Each TDM measure is assigned a point value between 1 and 5. The higher the value, the more effective the measure is at reducing vehicle travel.
- ▶ **Compliance Requirements** – identifies the required actions and obligations of the applicant or property owners for compliance with the TDM measure during the development review phase of a project.
- ▶ **TDM Plan Annual Progress Report** – identifies the annual reporting requirement for the property owners' TDM coordinator, which includes the number of employees participating in the plan (i.e., by measure) and the commute mode share of employees, along with other performance measures that demonstrate performance.

3.14.2 Environmental Setting

This section describes the existing environmental setting, which is the baseline scenario against which Project-specific impacts are evaluated. The environmental setting for transportation includes descriptions of roadway, transit, bicycle, and pedestrian facilities.

ROADWAY SYSTEM

The roadway network serving the City consists of the following roadway classifications:

- ▶ **Principal arterials:** Principal arterials provide limited access on high-speed roads with a limited number of driveways and intersections. Principal arterials also allow bicycles, and pedestrians may be permitted in limited locations. Principal arterials are generally designed for longer trips at the county or regional level.
- ▶ **Major arterials:** Major arterials provide controlled access for all transportation modes to enter and leave the urban area. In addition, significant intra-area travel, such as between residential areas and commercial or business areas, should be served by this system. Major arterials can include sidewalks for pedestrian connections, linking land uses to transit. They may have street parking or bike lanes. Arterials range in size from two to eight lanes. Major arterials in the rural area are subject to the separate Rural Roads Improvement Standards and may have separate pedestrian pathways, but no sidewalks.

- ▶ **Minor arterials/collectors:** Minor arterials/collectors are two-lane roadways providing access to all transportation modes, with a focus on local access. Pedestrian connections link land uses to local destinations and transit. The right-of-way associated with arterials/collectors may feature medians, parking lanes, and bike lanes. Arterials/collectors in the rural area are subject to the separate Rural Roads Improvement Standards and may have separate pedestrian and multiuse pathways, but no sidewalks, and may have reduced speed requirements. This classification also includes primary and secondary residential streets.
- ▶ **Local roads:** Local roads provide direct access to most properties and provide access to the higher roadway classifications described above. They are generally designed to discourage through traffic. Local roads are typically two lanes and are designed for low vehicle speeds. In the urban area of the City, they include pedestrian sidewalks. In the rural area, there are no sidewalks.

Access to the Project site is provided by the following key roadways:

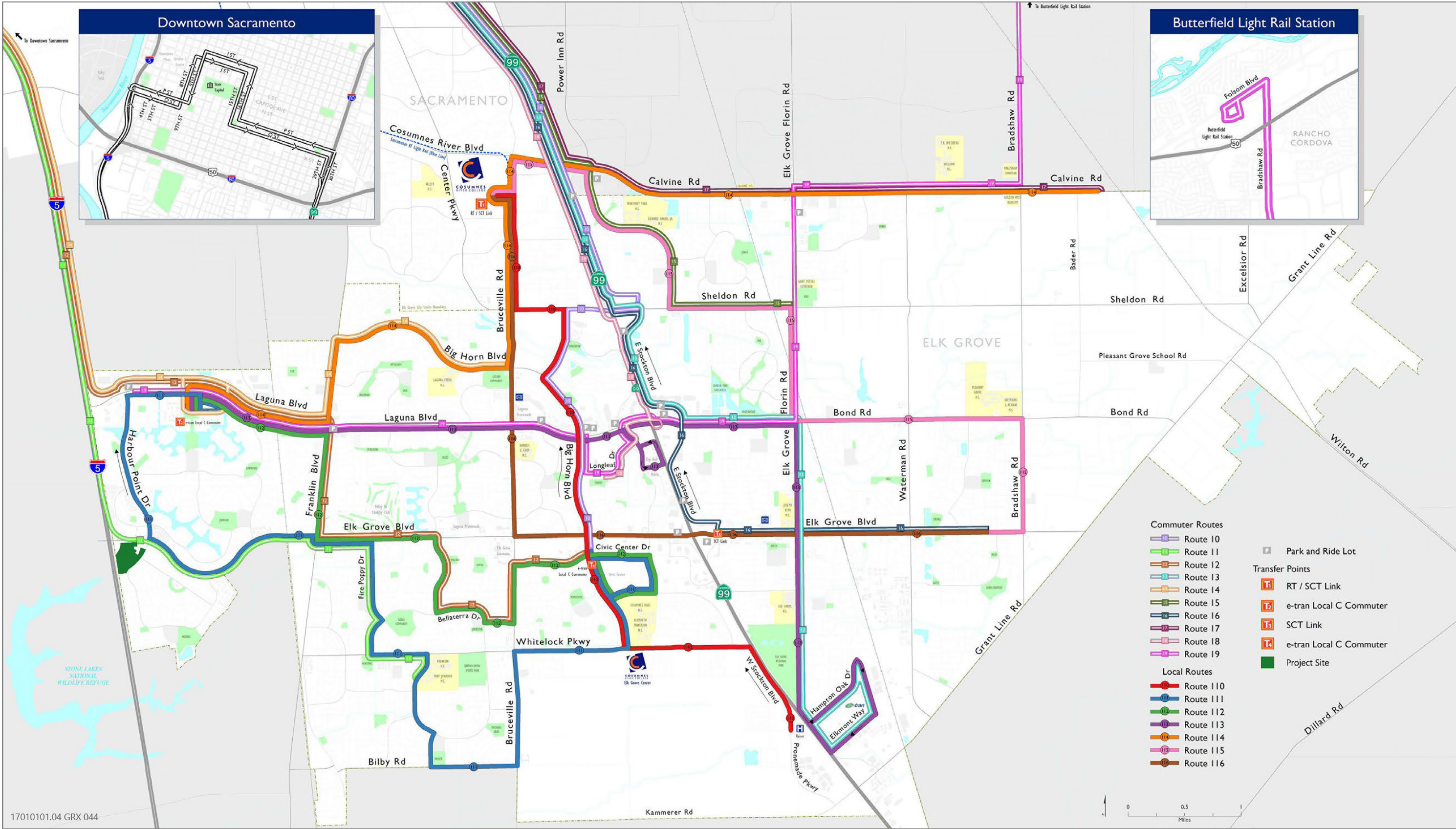
- ▶ **I-5** is a north-south freeway that traverses California and is a major national freeway that connects Mexico to Canada. Near the Elk Grove Boulevard interchange, I-5 is a four-lane freeway and transitions to a six-lane freeway north of Laguna Boulevard. The I-5 Corridor Enhancement Project, which is currently underway, includes the addition of bus and carpool lanes from south of Elk Grove Boulevard to north of Laguna Boulevard.
- ▶ **Elk Grove Boulevard** is an east-west road extending from I-5 to Grant Line Road. It has six lanes from I-5 to East Stockton Boulevard, four lanes to Elk Grove-Florin Road, and two lanes to Grant Line Road. Class II bike lanes are provided on both sides of Elk Grove Boulevard in the vicinity of the Project site.
- ▶ **West Taron Drive** is a north-south road extending from Bobbel Drive to Elk Grove Boulevard. North of Elk Grove Boulevard, it becomes Harbour Point Drive, which extends north to Laguna Boulevard. West Taron Drive is four lanes between Elk Grove Boulevard and the primary Project site access point at Riparian Drive, and two lanes south of the Project site. Class II bike lanes are provided on both sides of West Taron Drive.
- ▶ **Harbour Point Drive** is a north-south road extending from Elk Grove Boulevard to Kausen Drive, just north of Laguna Boulevard. It has four lanes and a Class II bike lane on both sides of the road.
- ▶ **Riparian Drive** is an east-west road extending from West Taron Drive to East Taron Drive. It has two lanes with a two-way left-turn lane and a Class II bike lane on both sides of the road.

TRANSIT SYSTEM

Transit within the City consists of the City e-tran fixed-route bus system, operated under contract to the City by Sacramento Regional Transit. E-tran service operates both local and commuter services, and routes are coordinated with buses, light rail, and South County Transit/Link to areas outside Elk Grove. E-tran operates seven local routes within Elk Grove and 10 commuter routes with service to downtown Sacramento and Rancho Cordova. E-tran also operates a paratransit service called e-van that addresses federal Americans with Disabilities Act (ADA) requirements for fixed-route service and primarily serves ADA-eligible passengers.

Figure 3.14-1 shows the existing e-tran system map. In the vicinity of the Project site, e-tran operates the following bus routes:

- ▶ **Route 11** is a commuter route that provides bus service between the City near Franklin High School and downtown Sacramento. In the study area, the route travels on Elk Grove Boulevard with bus stops nearest to the Project site located at the intersection of Elk Grove Boulevard and West Taron Drive/Harbour Point Drive. This route provides four inbound buses in the morning and four outbound buses in the evening, Monday through Friday.
- ▶ **Route 111** is a local route operating between Haussman Street on the northwest side of the City and Laguna Springs Drive and the nearby schools, including Cosumnes Oaks High School, Elizabeth Pinkerton Middle School, and Cosumnes River College Elk Grove Center. The Route 111 bus stops nearest to the Project site are located at the intersection of Elk Grove Boulevard and West Taron Drive/Harbour Point Drive. This route runs Monday through Friday from approximately 6:00 a.m. to 8:00 p.m., generally with 1-hour headways.



Source: City of Elk Grove 2017

Figure 3.14-1 E-Tran System Map

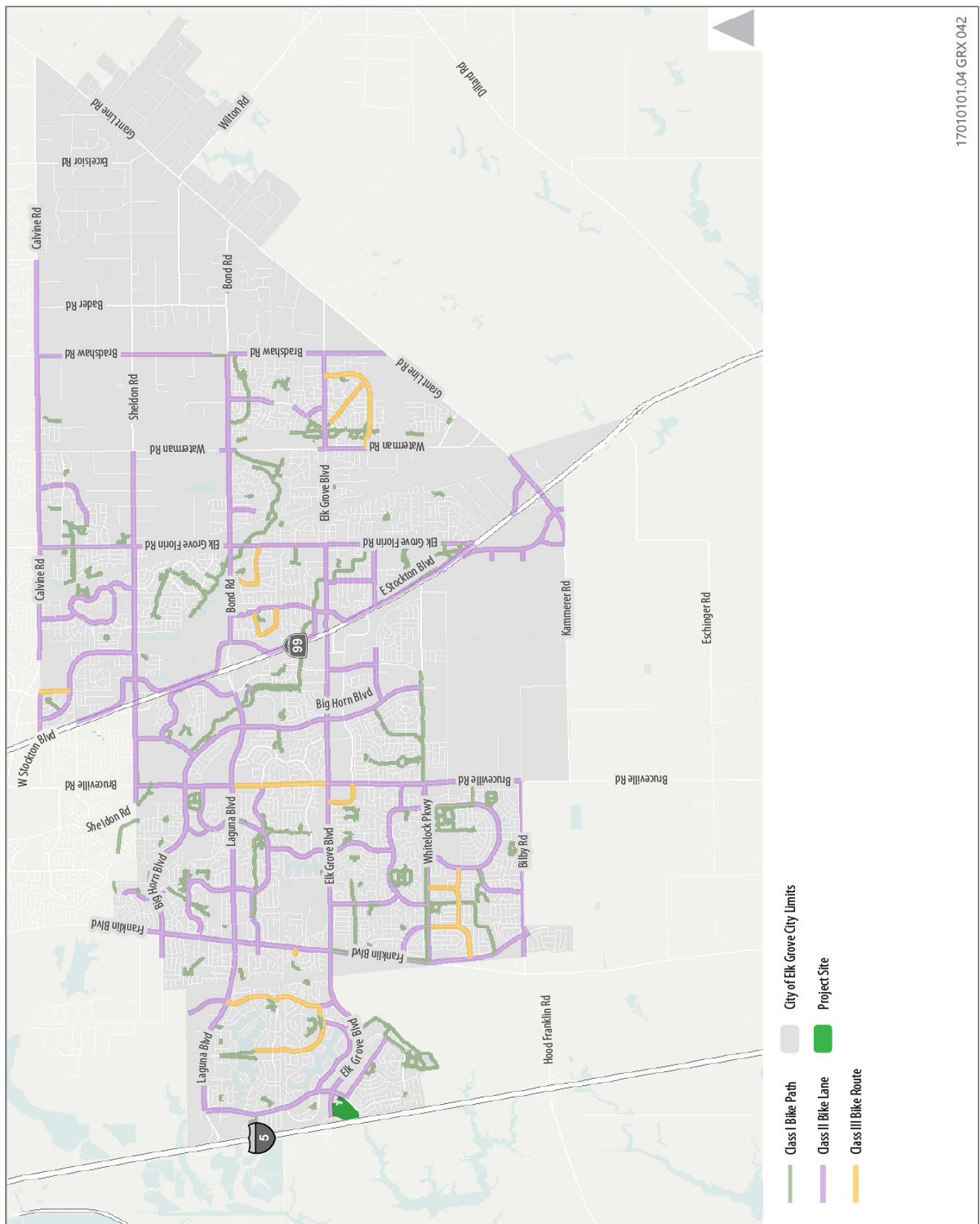
BICYCLE AND PEDESTRIAN SYSTEM

The bicycle network serving the City consists of the following bicycle facility classifications:

- ▶ **Class I Bike Paths:** Class I bike paths provide a completely separated right-of-way for the exclusive use of bicycles and pedestrians with cross-flow minimized.
- ▶ **Class II Bike Lanes:** Class II bike lanes are striped lanes for one-way bike travel on a street or highway.
- ▶ **Class III Bike Routes:** Class III bike routes provide for shared use with pedestrians or motor vehicle traffic.
- ▶ **Class IV Bikeways:** Class IV bikeways are on-street bike lanes that are physically separated from the adjacent general travel lane.

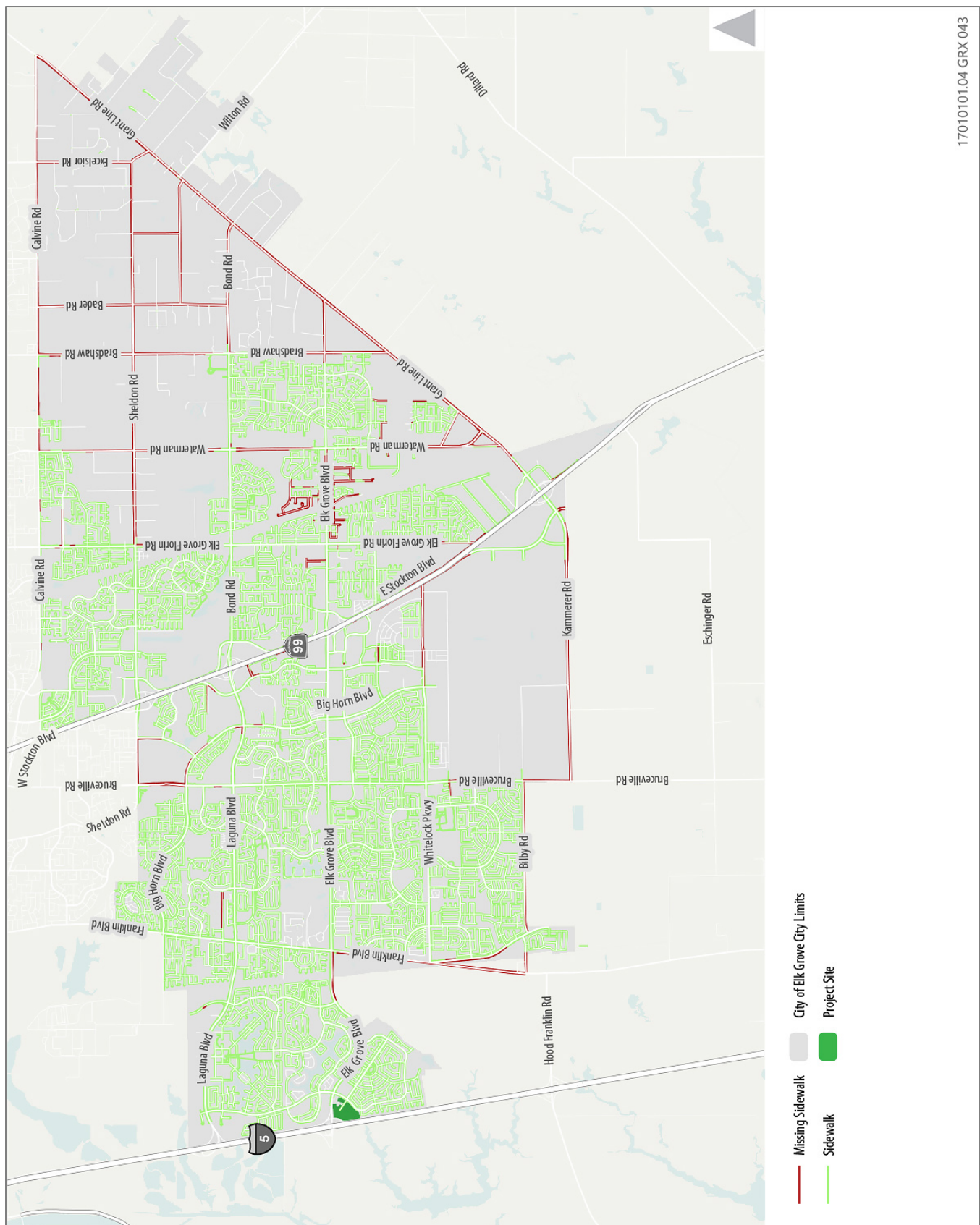
The bicycle network in the City primarily consists of Class II bicycle lanes that are striped for one-way bicycle travel. Existing bicycle facilities and sidewalk coverage are shown in Figure 3.14-2 and Figure 3.14-3, respectively.

In the vicinity of the Project site, Class II bike lanes (on-street with signage and striping) are provided in both directions on West Taron Drive, Riparian Drive, Harbour Point Drive, and Elk Grove Boulevard. Additionally, sidewalks are provided on all roadway frontages in the vicinity of the Project site, and the West Taron Drive/Riparian Drive and Elk Grove Boulevard/West Taron Drive/Harbour Point Drive intersections include pedestrian crosswalks on all legs. The Elk Grove Boulevard/Franklin Boulevard intersection has pedestrian crosswalks on the north, south, and east legs.



Source: Image produced and provided by Fehr & Peers in 2019

Figure 3.14-2 Existing Bicycle Facilities



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Source: Image produced and provided by Fehr & Peers in 2019

Figure 3.14-3 Existing Sidewalk Coverage

3.14.3 Impacts and Mitigation Measures

This section describes the analysis techniques, assumptions, and results used to identify impacts of the proposed Project on the transportation system. Transportation impacts are described and assessed, and mitigation measures are recommended for impacts identified as significant or potentially significant.

METHODOLOGY

The following methodologies were used to evaluate impacts of the Project.

Conflicts with City Circulation System Programs and Policies

The analysis compares consistency of Project transportation operations with City programs and policies set forth in the City General Plan and CAP that address the roadway system and vehicle trip reductions. As detailed above, a project's effect on automobile delay is no longer a consideration when identifying a significant impact under CEQA; thus, consistency with City General Plan policies related to intersection and roadway performance are not included here. However, the *California Northstate University – Transportation Analysis Report* is included as Appendix K and addresses the Project's impact on intersection and roadway performance and the associated consistency with City General Plan Policy MOB-1-3. As identified in Chapter 2, "Project Description," the City will condition the Project to conduct the following improvements to attain consistency with Policy MOB-1-3 (Figure 2-19):

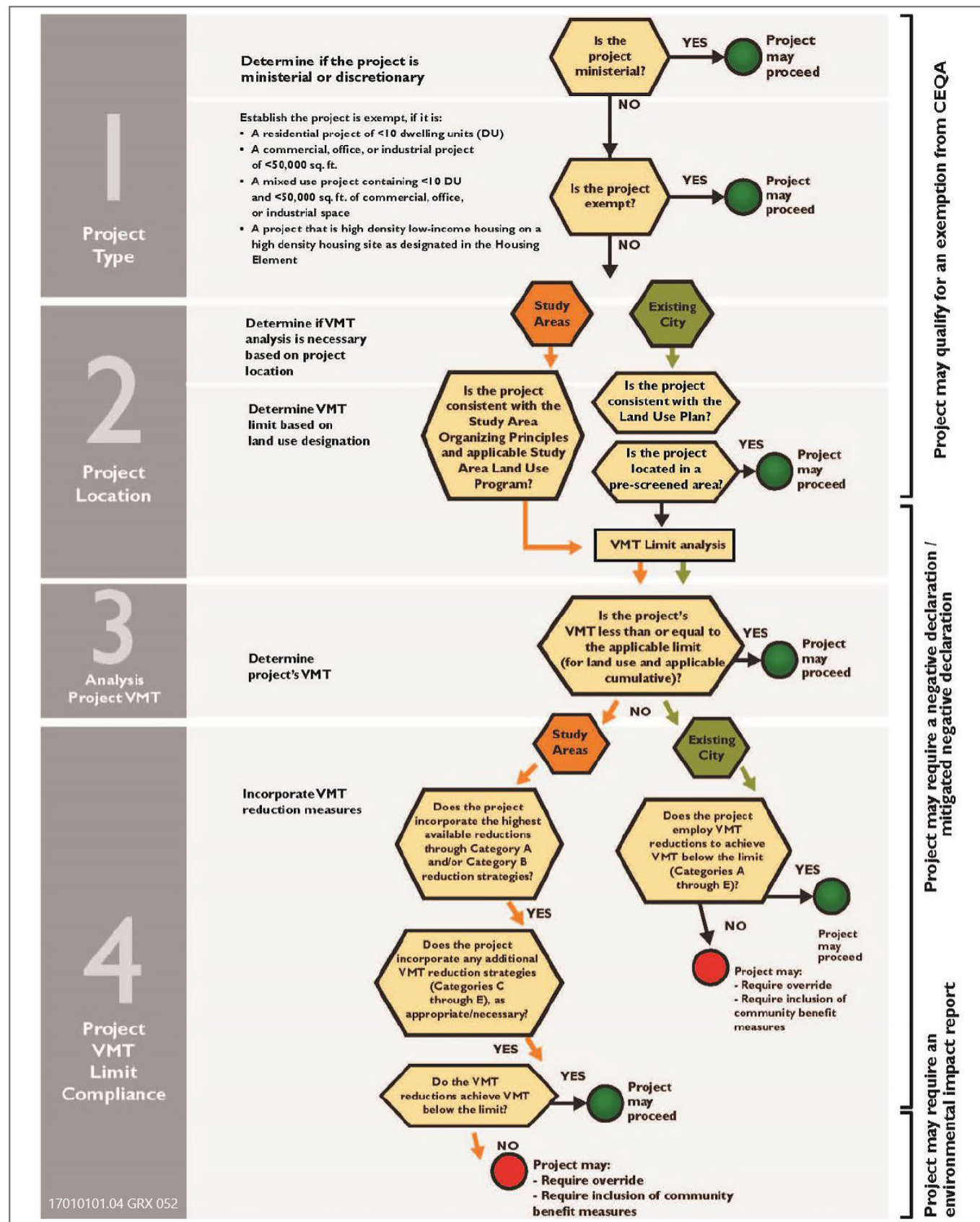
- ▶ West Taron Drive/Riparian Drive intersection: Signalize the intersection and provide two eastbound left-turn lanes. The signal will need to be installed during Phase 1 whereas the left-turn lanes will be required at buildout.
- ▶ Elk Grove Boulevard/I-5 northbound ramp intersection: Signalize the intersection at Project buildout.
- ▶ Elk Grove Boulevard/West Taron Drive/Harbour Point Drive intersection: Modify the p.m. peak-hour traffic signal cycle length to 120 seconds at Project buildout.
- ▶ Elk Grove Boulevard/Franklin Boulevard intersection: Provide three northbound left-turn lanes by converting the inside southbound travel lane to develop a third northbound left-turn lane, which will require restriping the southbound travel lanes (north of Elk Grove Boulevard through the intersection). The General Plan includes the reduction in through travel lanes on Franklin Boulevard from six to four lanes. This will require a striping adjustment on the eastbound approach to accommodate a third northbound left-turn lane. These improvements will be required at Project buildout.
- ▶ West Taron Drive/Shell gas station driveway/Chevron gas station driveway intersection: Modify the on-site design to provide a southbound right-turn pocket at Project buildout.

VMT

The City uses VMT per service population and total daily VMT as the basis for VMT analysis. The two VMT metrics and their intended application to project-level VMT analysis are described in Section 3.14.1, "Regulatory Setting," above.

The City desires to achieve a reduction in VMT and has developed a VMT analysis process for land use projects depicted in Figure 3.14-4. The VMT analysis process for land use projects detailed in Figure 3.14-4 includes the following four steps:

- ▶ **Step 1 (Project Type)** – Determine if the project is ministerial or discretionary or if the project is exempt from VMT analysis. Because its size exceeds the exemption limits, the Project is not exempt from VMT analysis.
- ▶ **Step 2 (Project Location)** – Determine if VMT analysis is necessary based on project location and determine the project's VMT limit by land use designation. The Project site would require a General Plan amendment to change land use designations from Community Commercial and Light Industrial to Employment Center. Therefore, the Project is not eligible for prescreening based on project location.
- ▶ **Step 3 (Analyze Project VMT)** – Determine the project's VMT and compare it to the VMT limit by land use designation (from Step 2) to determine if VMT mitigation is necessary.



Source: Image produced and provided by the City of Elk Grove in 2019

Figure 3.14-4 VMT Evaluation Process

- ▶ **Step 4 (Project VMT Limit Compliance)** – Identify VMT reduction mitigation measures and the significance of VMT impacts with mitigation.

Project-generated VMT was estimated using a modified version of SACOG’s 2016 SACSIM regional travel demand forecasting model developed for the analysis of the City General Plan Update (2019). Additionally, mobile-sourced data from StreetLight Data were used to obtain average trip lengths for the existing CNU school building, the existing office building (ALLDATA), the existing shopping center, and seven comparable hospitals and medical centers in the Sacramento region. Additional details related to the VMT quantification process and potential limitations of the model are included in Appendix K.

VMT Impact Analysis

The land use designation of the Project would be changed to Employment Center subsequent to the required General Plan amendment detailed above. Therefore, the Project must demonstrate that the Project-generated VMT is within both the project-level and cumulative VMT thresholds established in the General Plan such that:

1. VMT per service population at buildout is equal to or less than the VMT per service population limit of the applicable land use designation as defined in Table 6-1 of the City General Plan (presented as Table 3.14-1 in this EIR); and
2. The Project-generated VMT would not cause the City, cumulatively at General Plan buildout, to exceed the City’s established total VMT limit for its study area as defined in Table 6-2 of the City General Plan (presented as Table 3.14-2 in this EIR).

Transit Analysis

The transit analysis evaluates the Project transit demands on current capacities and demand of existing transit services provided by e-tran in the Project area.

Bicycle Analysis

The bicycle analysis addresses the relevant policies within the *City of Elk Grove General Plan* and the guidance, recommendations, and requirements of the *City of Elk Grove Transportation Analysis Guidelines*. Impacts on bicycle facilities require the analysis of bicycle LTS. “Bicycle LTS” refers to the comfort associated with operating bicycles along roadways, or the mental ease people experience while riding on them. Bicycle LTS criteria establish a “weakest link” approach because roadways are classified based on their segments with the highest LTS, assuming that only those bicyclists who are comfortable riding under the higher stress would travel on that road. The factors influencing bicycle LTS are:

- ▶ number of travel lanes,
- ▶ speed of traffic,
- ▶ number of vehicles,
- ▶ presence of bike lanes,
- ▶ width of bike lanes, and
- ▶ presence of physical barriers.

Bicycle LTS criteria span from 1 to 4, with 1 being the least stressful and 4 being the most stressful. The bicycle LTS criteria are as follows:

- ▶ **LTS 1:** Most children and elderly riders can tolerate this level of stress and feel safe and comfortable. LTS 1 roadways typically require more separation from traffic.
- ▶ **LTS 2:** This is the highest level of stress that the mainstream adult population will tolerate while still feeling safe.
- ▶ **LTS 3:** Bicyclists who are considered “enthused and confident” but still prefer having their own dedicated space for riding will tolerate this level of stress and feel safe while bicycling.

- ▶ **LTS 4:** For bicyclists, this is tolerated only by those characterized as “strong and fearless,” which comprises a small percentage of the population. These roadways have high speed limits, multiple travel lanes, limited or nonexistent bike lanes and signage, and large distances to cross at intersections.

The Fehr & Peers Streetscore+ tool was used to analyze bicycle LTS for the Project to determine compliance with City General Plan policies and Transportation Analysis Guidelines. Streetscore+ is a tool developed by Fehr & Peers to evaluate bicycle and pedestrian LTS.

Pedestrian Analysis

The pedestrian analysis addresses the relevant policies within the *City of Elk Grove General Plan* and the guidance, recommendations, and requirements of the *City of Elk Grove Transportation Analysis Guidelines*. “Pedestrian LTS” refers to the pedestrian comfort associated with a roadway or intersection. The Fehr & Peers Streetscore+ tool was used to analyze pedestrian LTS for the Project to determine compliance with City General Plan policies and Transportation Analysis Guidelines. Streetscore+ includes recommended parameters for the pedestrian environment provided by the National Association of City Transportation Officials Urban Streets Design Guide and additional considerations of comfort informed by practitioner and best practice experience.

Pedestrian Streetscore+ uses a scale that ranges from 1 to 4, with 1 being the least stressful and 4 being the most stressful. The pedestrian LTS criteria are as follows:

- ▶ **LTS 1:** Streets with this level of stress are highly comfortable, pedestrian-friendly, and easily navigable for pedestrians of all ages and abilities, including seniors and school-aged children walking unaccompanied to school. These streets provide an ideal “pedestrian-friendly” environment.
- ▶ **LTS 2:** Streets with this level of stress are generally comfortable for many pedestrians, but parents may not feel comfortable with children walking on them alone. Seniors may have concerns about the walking environment and take more caution. These streets may be part of a “pedestrian-friendly” environment where it intersects with a more auto-oriented roadway or other environmental constraints.
- ▶ **LTS 3:** Walking on streets with this level of stress is uncomfortable but possible. Minimum sidewalk and crossing facilities may be present, but barriers are also present that make the walking experience uninviting and uncomfortable.
- ▶ **LTS 4:** Walking on streets with this level of stress is very uncomfortable or even impossible. These streets have limited or no accommodation for pedestrians and are inhospitable and possibly unsafe for pedestrians.

Transportation Hazards and Emergency Access

This analysis evaluates whether Project operations could create transportation hazards or inadequate emergency access from Project site design. This analysis is based on the *California Northstate – Transportation Analysis Report* (Appendix K). The analysis also considers the potential for the hospital building and helicopter landing site to create an air navigation hazard based on FAA guidance and documentation.

Transportation Construction Analysis

The construction transportation impact analysis is based on the anticipated extent and length of time for Project construction under each of the three phases on transportation system operations and safety based on Project details provided in Chapter 2, “Project Description.”

THRESHOLDS OF SIGNIFICANCE

The significance criteria used to evaluate Project impacts on transportation under CEQA are based on Appendix G of the State CEQA Guidelines, as well as thresholds of significance adopted in the City General Plan and the City Transportation Analysis Guidelines.

The following describes the significance criteria used to identify Project-specific impacts on the transportation and circulation system for the proposed Project.

Circulation Systems

An impact on City circulation systems would be significant if implementation of the Project would:

- ▶ conflict with City General Plan and CAP programs and policies that require reductions in VMT.

VMT

An impact on VMT would be significant if implementation of the Project would:

- ▶ result in an exceedance of the VMT limit of the Project's General Plan land use designation (i.e., Employment Center) of 47.1 daily VMT per service population, as shown in Table 3.14-1, which incorporates the 15-percent reduction from 2015 conditions, or
- ▶ result in an exceedance of the established Citywide cumulative limit of 6,367,833 total daily VMT.

Transit Facilities

An impact on transit facilities would be significant if implementation of the Project would:

- ▶ create demand for public transit services above the crush load capacity that is provided or planned or
- ▶ disrupt existing or planned transit facilities and services or conflict with adopted City nonauto plans, guidelines, policies, or standards.

Bicycle Facilities

An impact on bicycle facilities would be significant if implementation of the Project would:

- ▶ disrupt existing or planned bicycle facilities or conflict with adopted City nonauto plans, guidelines, policies, or standards;
- ▶ add trips to an existing transportation facility or service (e.g., bike path) that does not meet current design standards; or
- ▶ degrade the Bicycle Streetscore LTS.

Pedestrian Facilities

An impact on pedestrian facilities would be significant if implementation of the Project would:

- ▶ fail to provide accessible and safe pedestrian connections between buildings and to adjacent streets and transit facilities;
- ▶ disrupt existing or planned pedestrian facilities or conflict with adopted City nonauto plans, guidelines, policies, or standards;
- ▶ add trips to an existing transportation facility or service (e.g., sidewalk) that does not meet current design standards; or
- ▶ degrade the Pedestrian Streetscore LTS.

Transportation Hazards Related to a Geometric Design Feature or Incompatible Uses

An impact on transportation hazards related to a geometric design feature would be significant if implementation of the Project would:

- ▶ result in designs for on-site circulation, access, and parking areas that fail to meet City or industry standard design guidelines;
- ▶ fail to provide adequate accessibility for service and delivery trucks on-site, including access to truck loading areas; or
- ▶ result in the construction of a structure that creates a hazard to air navigation.

Emergency Access

An impact on emergency access would be significant if implementation of the Project would:

- ▶ result in inadequate emergency access.

Temporary Construction Impacts

Temporary transportation construction impacts would be significant if implementation of the Project would:

- ▶ result in a temporary but prolonged impact related to lane closures; the need for temporary signals; emergency vehicles access; traffic hazards to vehicles, bicyclists, and pedestrians; damage to the roadbed; or truck traffic on roadways not designated as truck routes.

ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Impact 3.14-1: Result in a Conflict with City Circulation System Programs and Policies That Require Reductions in Local Commute Trips

Implementation of the Project would create new land uses on the Project site that would increase local vehicle trips above existing conditions. City General Plan Policy NR-4-5 and CAP Measure TACM-3 identify the need to reduce single-occupancy and local commute vehicle trips. Implementation of mitigation would reduce this impact to **less than significant**.

City General Plan Policy NR-4-5 seeks to reduce single-occupant vehicle use through the implementation of demand management strategies with the intent of achieving State and federal air quality plan objectives. Additionally, CAP Measure TACM-3 indicates that the City shall implement strategies and policies that reduce the demand for personal motor vehicle travel for intracity (local) trips in order to reduce GHG emissions. For further analysis of Project-related GHG emissions, refer to Section 3.7, "Greenhouse Gas Emissions and Climate Change."

The *California Northstate University – Transportation Analysis Report*, completed by Fehr & Peers, estimates that the Project would result in 21,106 daily external vehicle trips as compared to existing Project site operations that generate 5,808 daily external trips identified in the California Northstate University Assembly Bill (AB) 900 application (Appendix C: Appendix B). Refer to Appendix K for detailed modeling data and technical calculations. As detailed in Section 2.7, "Project Certification under Jobs and Economic Improvement through Environmental Leadership Act," the Project was certified as an eligible project under AB 900. In support of the Project's certification as an environmental leadership development project by the governor, CNU has made commitments to reduce the number of Project-generated vehicle trips by 30 percent (the City CAP aims to reduce local commute traffic by only 15 percent) through the implementation of a TDM plan. To ensure the effectiveness of this TDM Plan, the Project Applicant has committed to the monitoring of the program's performance to ensure that a 30-percent or greater reduction in trips is achieved. Refer to Appendix C for the complete AB 900 application and associated TDM analysis.

As detailed above, the Project at buildout would result in an increase in of 15,298 external daily trips and would conflict with City programs and policies that require reductions in local commute trips. However, implementation of Mitigation Measure 3.14-1 would ensure that a Project TDM plan is implemented that would reduce vehicle trips consistent with General Plan Policy NR-4-5 and CAP TACM-3 and would reduce this impact to **less than significant**.

Mitigation Measures

Mitigation Measure 3.14-1: Implement Transportation Demand Management Plan

The Project Applicant shall develop and implement the TDM Plan that was outlined in the Project's AB 900 application provided in Appendix C of the Draft EIR, which requires the Project to achieve at least 15-percent greater transportation efficiency than comparable projects in the City (30 percent reduction in trips). The TDM Plan shall be consistent with the City TDM Plan Guidelines. The following TDM measures shall be required:

- ▶ transportation marketing services,
- ▶ short-term bicycle parking,
- ▶ long-term bicycle parking,
- ▶ improved access to bike network,
- ▶ showers and locker rooms,
- ▶ on-site café,
- ▶ subsidized transit passes,
- ▶ shuttle bus service,
- ▶ carpooling program,
- ▶ guaranteed ride home, and
- ▶ parking cash-out program.

The City shall review and approve the Project TDM Plan prior to issuance of plan approval or building permit by the California Office of Statewide Health Planning and Development Facilities Development Division for the hospital building.

The Project Applicant shall be subject to annual reporting and monitoring requirements to ensure that the TDM Plan and all the associated measures are being implemented. The Project Applicant shall submit annual progress reports on implementation of the TDM Plan to the City Development Services Department beginning one year after the date of TDM Plan approval. If the Project Applicant fails to submit an annual report demonstrating implementation of the TDM Plan within 60 days following the established date for annual report submittal, an administrative citation will be issued pursuant to Municipal Code Chapter 1.12. The required items to be included in the annual progress report are:

- ▶ contact information for the Project TDM coordinator,
- ▶ sample of marketing materials provided to new employees about the TDM program,
- ▶ number of employees participating in each TDM measure offered to employees,
- ▶ commute mode share of employees at the Project site, and
- ▶ other information demonstrating implementation of specific TDM measures.

Significance after Mitigation

Less than significant.

Impact 3.14-2: Result in an Exceedance of City of Elk Grove General Plan VMT Thresholds

Project-generated VMT per service population would not result in an exceedance of the VMT per service population threshold for the Employment Center land use designation (i.e., 47.1 VMT). Further, the addition of Project-generated total daily VMT within the City would not result in an exceedance of the established Citywide limit of 6,367,833 VMT. Therefore, this impact would be **less than significant**.

VMT by Land Use Designation

As detailed in Chapter 2, "Project Description," and shown in Figure 2-2 and Figure 2-3, the proposed Project would require the General Plan land use designation for six parcels on the Project site to be changed from Community Commercial to Employment Center, and for three parcels to be changed from Light Industrial to Employment Center. Therefore, subsequent to the General Plan amendment detailed above, the Project would have a General Plan land use designation of Employment Center; thus, as shown in Table 3.14-1 and Policy MOB-1-1 of the City General Plan, the VMT limit of the Project would be 47.1 daily VMT per service population.

Project-generated VMT was modeled using a modified version of SACOG's SACSIM regional travel demand forecasting model and mobile-sourced data from StreetLight Data and is summarized in Table 3.14-3. The VMT per service population calculation for the Project did not incorporate any VMT reductions associated with the proposed multi-modal improvements or the TDM plan detailed in Mitigation Measure 3.14-1, above. Refer to Appendix K for detailed VMT modeling data and technical calculations.

Table 3.14-3 Vehicle Miles Traveled by Land Use Designation Limits – Project Buildout Conditions

Project Area	Land Use Designation	VMT Per Service Population		Limit Exceeded?
		Limit	Project	
Buildout	Employment Center	47.1	13.67	No

Note: VMT = vehicles miles traveled.

Source: Fehr & Peers 2020

As shown in Table 3.14-3, the Project's VMT per service population (i.e., employees, students, patients, and visitors) would not exceed the City's VMT threshold for the Employment Center land use designation (i.e., 47.1 VMT).

Citywide VMT Limits

As detailed above and in Policy MOB-1-1 of the City General Plan, projects within City limits are required to demonstrate that the VMT within the City, including the Project, would be equal to or less than the City's established total VMT limit of 6,367,833. The proposed Project is within the City limits; thus, using the same modeling and forecasting tools and data as detailed above, the total daily VMT of the Project at full buildout was modeled and is summarized in Table 3.14-4. The total VMT calculation for the Project did not incorporate any VMT reductions associated with the proposed multimodal improvements or the TDM plan detailed in Mitigation Measure 3.14-1, above. Refer to Appendix K for detailed VMT modeling data and technical calculations.

Table 3.14-4 Citywide Vehicle Miles Traveled Limit – Project Buildout Conditions

Development Projects in Existing City	Total VMT		Limit Exceeded?
	Limit	With Project	
Citywide	6,367,833	6,342,176	No

Note: VMT = vehicles miles traveled.

Source: Fehr & Peers 2020

As shown in Table 3.14-4, the addition of Project-generated total daily VMT would not result in the total daily Citywide VMT exceeding the established Citywide limit of 6,367,833 VMT.

Summary

As detailed above, Project-generated VMT per service population would not result in an exceedance of the VMT per service population threshold for the Employment Center land use designation (i.e., 47.1 VMT). Additionally, the increase of total daily VMT within the City resulting from implementation of the Project would not result in an exceedance of the established Citywide limit of 6,367,833 VMT. Therefore, this impact would be **less than significant**.

Mitigation Measures

No mitigation is required.

Impact 3.14-3: Impact on Transit Facilities

Based on Federal Transit Administration transit system performance data, demand for transit within the City is low. Therefore, it is anticipated that Project-generated transit demand may be accommodated by the existing transit service and that the crush load capacity of the transit system would not be exceeded. Additionally, the proposed Project would not permanently alter the physical transportation network external to the Project site such that the bus stops serving these routes would be adversely affected. Thus, this impact would be **less than significant**.

The Federal Transit Administration maintains a database of transit system performance. The City 2018 Annual Agency Profile states that local bus service had 10.1 unlinked trips per vehicle revenue hour, or about 10 passengers per hour (Fehr & Peers 2020). Generally, this level of performance is indicative of low demand and productivity. Routes performing at this level would have excess seated and standing capacity.

E-tran operates Routes 11 and 111, which have stops at the intersection of Elk Grove Boulevard and West Taron Drive/Harbour Point Drive, approximately 775 feet northeast of the Project site. The proposed Project would not permanently alter the physical transportation network external to the Project site such that the bus stops serving these routes would be adversely affected, because the existing stops are beyond the boundaries of the Project. While the proposed Project would not create demand for public transit services above the crush load capacity of the transit system, the Project would increase transit ridership and demand for transit stops near the Project site. The transit stop nearest to the Project site is the Route 111 bus stop located on the southeast corner of the intersection of Elk Grove Boulevard and West Taron Drive/Harbour Point Drive. There is an existing bus stop pad separate from the sidewalk, a transit shelter, and additional space within the existing bus stop pad to accommodate an expanded shelter. Existing continuous sidewalks and crosswalks with push-button crossing signals would connect incoming and outgoing transit riders to the Project site. Additionally, as shown in Figure 2-16, the Project would provide new on- and off-site bicycle and pedestrian facilities, thus enhancing multimodal access to the existing transit facilities and service.

Therefore, the proposed Project would not create demand for public transit services above the crush load capacity of the transit system and would not disrupt existing or planned transit facilities and services. This impact would be **less than significant**.

Mitigation Measures

No mitigation is required.

Impact 3.14-4: Impact on Bicycle Facilities

The proposed Project would provide on- and off-site bicycle facilities, including a Class I multipurpose trail along the eastern border of the Project site adjacent to West Taron Drive and secure bicycle parking areas throughout the Project site. An amendment to the City's *Bicycle, Pedestrian, and Trails Master Plan* is proposed for the Project to construct the Class I multipurpose trail along this proposed alignment. This bicycle facility would enhance the bicycle network safety and access in the vicinity of the Project site by providing an off-street alternative for some users. Additionally, the Project would not add trips to an existing transportation facility or service that does not meet current design standards and would not degrade the Bicycle Streetscore LTS that is used to determine consistency with the *City of Elk Grove Transportation Analysis Guidelines*. Therefore, this impact would be **less than significant**.

Project site amenities proposed to serve bicycle circulation are shown in Figure 2-16. At buildout, the Project site would include two connections to the existing bike path along West Taron Drive, secure bicycle parking areas in at least five locations throughout the Project site, and pedestrian walkways throughout the site connecting to adjacent neighborhoods and recreational facilities. A Class I multipurpose trail would be constructed along the eastern border of the Project site during Phases 2 and 3, from the southwest corner of Elk Grove Boulevard and West Taron Drive to the southwest corner of the Project site. An amendment to the City's *Bicycle, Pedestrian, and Trails Master Plan* is proposed for the Project to construct the Class I multipurpose trail along this proposed alignment; however, the bicycle facility would enhance the bicycle network safety and access in the vicinity of the Project site by providing an off-street alternative for some users. Additionally, all existing bicycle facilities in the vicinity of the Project site meet current design standards.

Bicycle Streetscore LTS in the vicinity of the Project site was analyzed with the addition of the proposed Project. The result of the Bicycle Streetscore LTS analysis is shown in Table 3.14-5. For detailed modeling results, see Appendix K.

Table 3.14-5 Bicycle Level of Traffic Stress

Roadway Segment/Intersection		Level of Traffic Stress	
		Current Conditions	With Project
West Taron Drive	Elk Grove Boulevard to Riparian Drive	3	3
	Riparian Drive to Ruddy Duck Way	3	3
West Taron Drive/Riparian Drive		1	1

Source: Fehr & Peers 2020

As shown in Table 3.14-5, implementation of the proposed Project would not degrade the Bicycle Streetscore LTS for any of the roadway segments or intersections analyzed.

As detailed above, although the Project proposes an amendment to the City's *Bicycle, Pedestrian, and Trails Master Plan*, it would not remove, prevent, or disrupt any future bicycle facilities planned in the City's *Bicycle, Pedestrian, and Trails Master Plan*. Therefore, implementation of the proposed Project would not disrupt any existing or planned bicycle facilities, add trips to an existing transportation facility or service (e.g., bike path) that does not meet current design standards, or degrade the Bicycle Streetscore LTS. This impact would be **less than significant**.

Mitigation Measures

No mitigation is required.

Impact 3.14-5: Impacts on Pedestrian Facilities

The proposed Project would provide on-site pedestrian facilities and would not disrupt any existing or planned pedestrian facilities City General Plan and Bicycle, Pedestrian, and Trails Master Plan. Additionally, the Project would not add trips to an existing transportation facility or service that does not meet current design standards or degrade the Pedestrian Streetscore LTS that is used to determine consistency with the *City of Elk Grove Transportation Analysis Guidelines*. Therefore, this impact would be **less than significant**.

As detailed in Section 2.4.6, "Other Project Improvements," and shown in Figure 2-16, the proposed Project would construct pedestrian walkways throughout the site, thus connecting the site to the adjacent neighborhoods and recreational facilities. This would include a Class I multipurpose trail along the eastern border of the Project site adjacent to West Taron Drive with connections to West Taron Drive that would involve an amendment to the City's Bicycle, Pedestrian, and Trails Master Plan. Additionally, existing sidewalks are provided along all the Project site street frontages, and all existing pedestrian facilities in the vicinity of the Project site meet current design standards.

Pedestrian Streetscore LTS was analyzed with the addition of the proposed Project. The result of the Pedestrian Streetscore LTS analysis is shown in Table 3.14-6. For detailed modeling results, see Appendix K.

Table 3.14-6 Pedestrian Level of Traffic Stress

Roadway Segment/Intersection		Level of Traffic Stress	
		Current Conditions	With Project
West Taron Drive	Elk Grove Boulevard to Riparian Drive	3	3
	Riparian Drive to Ruddy Duck Way	3	3
West Taron Drive/Riparian Drive		2	2

Source: Fehr & Peers 2020

As shown in Table 3.14-6, implementation of the proposed Project would not degrade the Pedestrian Streetscore LTS for any of the roadway segments or intersections analyzed.

Therefore, implementation of the proposed Project would not disrupt any existing or planned pedestrian facilities, add trips to an existing transportation facility or service that does not meet current design standards, or degrade the Pedestrian Streetscore LTS. This impact would be **less than significant**.

Mitigation Measures

No mitigation is required.

Impact 3.14-6: Substantially Increase Hazards Because of a Design Feature or Incompatible Uses

The proposed Project would be subject to, and constructed in accordance with, applicable roadway design and safety guidelines. Therefore, the Project would not increase hazards because of a roadway design feature or incompatible uses. However, the proposed hospital building and helicopter landing site may create an air navigation hazard if marking and lighting were not provided. Implementation of mitigation would reduce this impact to **less than significant**.

Access and On-Site Circulation

As detailed in Chapter 2, "Project Description," the Project would include construction of streetscape modifications to West Taron Court, modifications to existing on-site parking areas, and driveway improvements to West Taron Drive. As part of the *California Northstate University – Transportation Analysis Report*, completed by Fehr & Peers, site access and on-site circulation were analyzed, and recommendations related to the proposed parking structures, the proposed emergency vehicle access from westbound Elk Grove Boulevard, and truck circulation were proposed. Based on site plans shown in Figures 2-7, 2-14, and 2-15, the truck bays for deliveries would be located on the west side of the proposed hospital. To access the loading bays, trucks would circulate through the Project site entering/exiting by way of the southern driveway. A swept path analysis using a California Legal design vehicle and emergency vehicle turning radius shows that the Project site would adequately accommodate truck and emergency vehicle circulation. For detailed swept path analysis and emergency vehicle turn radius layouts and results, see Appendix K. Additionally, all roadway, access improvements, and additional loading bays for future Phase 2 and 3 buildings associated with development of the Project would be subject to, and constructed in accordance with, applicable City and/or industry standard roadway design and safety guidelines.

Off-Site Circulation

The *California Northstate University – Transportation Analysis Report* is included as Appendix K and addresses the Project's impact on intersection and roadway performance and the associated off-site improvements required to ensure safe and adequate performance of these facilities. As identified in Chapter 2, "Project Description," the City will condition the Project to conduct the following improvements:

- ▶ West Taron Drive/Riparian Drive intersection: Signalize the intersection and provide two eastbound left-turn lanes. The signal will need to be installed during Phase 1 whereas the left-turn lanes will be required at buildout.
- ▶ Elk Grove Boulevard/I-5 northbound ramp intersection: Signalize the intersection at Project buildout.
- ▶ Elk Grove Boulevard/West Taron Drive/Harbour Point Drive intersection: Modify the p.m. peak-hour traffic signal cycle length to 120 seconds at Project buildout.
- ▶ Elk Grove Boulevard/Franklin Boulevard intersection: Provide three northbound left-turn lanes by converting the inside southbound travel lane to develop a third northbound left-turn lane, which will require restriping the southbound travel lanes (north of Elk Grove Boulevard through the intersection). The General Plan includes the reduction in through travel lanes on Franklin Boulevard from six to four lanes. This will require a striping adjustment on the eastbound approach to accommodate a third northbound left-turn lane. These improvements will be required at Project buildout.
- ▶ West Taron Drive/Shell gas station driveway/Chevron gas station driveway intersection: Modify on-site design at the Project driveway associated with the parking garage to provide a southbound right-turn pocket at Project buildout.

In addition to the Project's impact on intersection and roadway performance on the City's roadway network, the *California Northstate University – Transportation Analysis Report* addresses vehicle queuing at the I-5/Elk Grove Boulevard interchange. The vehicle queuing analysis determines if the addition of project generated traffic to this interchange would result in off-ramp vehicle queueing that would exceed available ramp storage and extend into the off-ramp deceleration length or to the I-5 mainline. Additional details related to the queueing analysis, methodology, and results are included in Appendix K.

The queueing analysis at the I-5/Elk Grove Boulevard interchange was only conducted for the northbound off-ramp due to the southbound off-ramp terminal intersection being uncontrolled (e.g., no stop sign or traffic signal). Table 3.14-7 below shows the available vehicular storage length and estimated vehicle queues for the northbound off-ramp under Phase 1 and Phase 3 conditions.

Table 3.14-7 I-5/Elk Grove Boulevard Interchange (Northbound Off-Ramp)

Scenario	Intersection Traffic Control	Available Storage Length (Feet)	95th Percentile Queue (Feet)	
			AM	PM
Existing Plus Phase 1	Side Street Stop	875	25	50
Cumulative Plus Phase 3	Traffic Signal		200	75

Notes: Available storage length measured from stop bar at Elk Grove Boulevard to the end of the off-ramp deceleration length.

Source: Fehr and Peers 2020

As shown in Table 3.14-7, the forecasted vehicle queues would not exceed the available vehicle storage length (i.e., 875 feet) and would not extend into the off-ramp deceleration length or to the I-5 mainline. Thus, no traffic safety impacts are expected

Hospital Building and Helicopter Landing Site

As described in Chapter 2, "Project Description," the hospital building would be 261 feet in height and would include a helicopter landing site. An aeronautical study of the Project conducted by FAA (Sanders 2020) concluded that the Project would not exceed FAA obstruction standards and thus would not result in a hazard to air navigation. This finding is contingent on the hospital building being marked/lighted in accordance with Chapter 4 (Light Guideline), Chapter 8 (Dual Lighting with Red/Medium-Intensity Flashing White Light Systems), and Chapter 12 (Marking and Lighting Equipment and Information) of *FAA Advisory Circular 70/7460-Obstruction Marking and Lighting, Change 2* (Advisory Circular 70/7460-1L Change 2). FAA recommends the guidelines and standards in this advisory circular for determining the proper way to light and mark obstructions affecting navigable airspace. This advisory circular does not constitute a regulation and, in general, is not mandatory (FAA 2018). The proposed hospital building design does not include any details on building marking or lighting.

Guidance for lighting for hospital helicopter landing sites is provided under FAA's Advisory Circular 150/5390-2C (Heliport Design), Chapter 4 (Hospital Heliports), Section 415 (Heliport Lighting), which provides standards for perimeter lighting, taxiways, and beacons. These standards address the use of green lighting to identify the touchdown and liftoff area, final approach and takeoff area, and flight path alignments. The proposed hospital building design does not provide any specifications on how the helicopter landing site would be lighted for use and safety.

Summary

As detailed above, the Project would not increase hazards because of a roadway design feature or incompatible uses, and access to and circulation within the Project site would be adequate. Additionally, the project would not result in vehicle queues exceeding the existing available storage along the northbound I-5/Elk Grove Boulevard interchange off-ramp and vehicle queues would not extend into the off-ramp deceleration length or to the I-5 mainline; thus, not resulting in a roadway hazard at the I-5/Elk Grove Boulevard interchange. However, if the hospital building and helicopter landing site do not include marking and lighting consistent with FAA guidance, the Project may result in a hazard to air navigation. Implementation of Mitigation Measure 3.14-6 would require that the helicopter landing site proposed as part of the Project satisfy all the FAA guidelines for design and lighting and all the marking and lighting

recommendations related to air navigation obstruction. Therefore, implementation of this mitigation measure would reduce the potentially significant impact on hazards related to a design feature or incompatible uses to **less than significant**.

Mitigation Measures

Mitigation Measure 3.14-6: Provide Marking and Lighting Consistent with FAA Requirements

The Project Applicant shall incorporate marking and lighting specifications into the final engineering and design plans. The marking and lighting for the hospital and the proposed helicopter landing site shall be consistent with FAA Advisory Circular 150/5390-2C (Heliport Design), Chapter 4 (Hospital Heliports), and Section 415 (Heliport Lighting), and navigation lighting shall be consistent with FAA Advisory Circular 70/7460-1L Change 2 (Obstruction Marking and Lighting). The Project Applicant shall provide plans, permits, and documentation demonstrating compliance and required approvals from FAA and the California Department of Transportation Division of Aeronautics to City Development Services Department prior to operation of the hospital and helicopter landing site. Additionally, the Project Applicant shall file FAA Form 7460-2, Notice of Actual Construction or Alteration, any time the Project is abandoned or within 5 days after the construction reaches its greatest height.

Significance after Mitigation

Less than significant.

Impact 3.14-7: Result in Inadequate Emergency Access

Implementation of the Project would result in additional Project site access points. Additionally, the internal circulation network and any changes to the external circulation network would be subject to review by the City and Cosumnes Community Services District Fire Department, thus ensuring that the Project would be designed to meet all applicable emergency access and design standards. Therefore, adequate emergency access would be provided. This impact would be **less than significant**.

The Project site is located within an existing suburban area close to emergency services and would provide additional vehicular access points. This would include a dedicated emergency vehicle access point from westbound Elk Grove Boulevard (Figure 2-19) that would provide a more direct access into the hospital portion of the site. A swept path analysis using a California Legal emergency vehicle turning radius shows that the Project site would adequately accommodate emergency vehicle circulation. For detailed emergency vehicle turn radius layouts and results, see Appendix K.

Additionally, changes to Project site access points, the internal circulation network, and the external circulation network would be subject to review by the City and responsible emergency service agencies, thus ensuring that the Project would be designed to meet all applicable emergency access and design standards. Therefore, adequate emergency access would be provided. This impact would be **less than significant**.

Mitigation Measures

No mitigation is required.

Impact 3.14-8: Result in Temporary but Prolonged Construction Transportation Impacts

Construction of the proposed Project would occur adjacent to and within the public roadway right-of-way; thus, it would likely require temporary lane closures and may result in unexpected slowing of vehicular traffic if not properly planned and managed. Additionally, the hauling of heavy machinery (e.g., bulldozers, excavators) and operation of large trucks associated with construction activities may necessitate travel along roadways not designated as truck routes and may potentially cause damage to the roadbed. Therefore, construction of the Project may potentially result in temporary but prolonged construction transportation impacts. Implementation of mitigation would reduce this impact to **less than significant**.

The proposed Project would include construction, redesign, and alteration of existing vehicular access points to the Project site. Additionally, off-site transportation improvements would include constructing a left-turn pocket on westbound Elk Grove Boulevard that would be restricted to emergency vehicle use, restriping the southbound travel lanes at the Elk Grove Boulevard/Franklin Boulevard intersection, and modifying on-site design to provide a southbound right-turn pocket at the West Taron Drive/Shell gas station driveway/Chevron gas station driveway intersection.

Off-site wastewater infrastructure improvements would be required along Riparian Drive between West Taron Drive and East Taron Drive within the roadway right-of-way. Electrical distribution improvements along West Taron Drive, Elk Grove Boulevard, and Franklin Boulevard may also require temporary closure of traffic lanes. Therefore, construction may include disruptions to the transportation network in the vicinity of the Project site, including the possibility of temporary lane closures, street closures, sidewalk closures, and bikeway closures.

Heavy vehicles would access the Project site and may need to be staged on-site for construction. Equipment and materials would be temporarily staged in a manner to avoid interfering with the operation of uses on-site or adjacent to the Project site. Construction traffic impacts would be localized and temporary, and staging area would be available to the construction contractor on the Project site, reducing the need for use of streets and other active areas. However, construction activities may potentially result in temporary but prolonged lane closures.

As described above, off-site construction would occur adjacent to and within the public roadway right-of-way; thus, it would likely require temporary lane closures and may result in unexpected slowing of vehicular traffic if not properly planned and managed. The hauling of heavy machinery (e.g., bulldozers, excavators) and operation of large trucks associated with construction activities may necessitate travel along roadways not designated as truck routes and may potentially cause damage to the roadbed. Therefore, construction of the Project may potentially result in temporary but prolonged construction transportation impacts. Implementation of Mitigation Measure 3.14-8 would require coordination between the construction contractor and the City and would require that the construction contractor prepare and implement a temporary traffic control plan that meets with the approval of the City. Under the plan, construction-related transportation impacts would be avoided through the management of construction activities in a manner that would retain partial roadway access and/or schedule construction outside of the a.m. and p.m. peak traffic conditions; allow emergency vehicle access; delineate construction zones in a manner that protects vehicles, bicyclists, and pedestrians; and repair damage to the roadway. Thus, implementing Mitigation Measure 3.14-8 would mitigate temporary traffic hazards. Implementation of this mitigation measure would reduce this potentially significant impact to **less than significant**.

Mitigation Measures

Mitigation Measure 3.14-8: Prepare and Implement a Temporary Traffic Control Plan

Prior to construction of each Project phase, the construction contractor shall coordinate with the City Traffic Engineering Section of the Public Works Department to determine the required process, permits, and approvals. Additionally, the construction coordinator shall prepare a temporary traffic control plan to the satisfaction of the City Traffic Engineering Section of the Public Works Department. The temporary traffic control plan shall at a minimum:

- ▶ describe the proposed work zone;
- ▶ delineate construction areas in a manner that protects vehicles, bicyclists, and pedestrians;
- ▶ describe applicable detours and lane closures;
- ▶ describe appropriate tapers and lengths, signs, and spacing;
- ▶ identify appropriate channelization devices and spacing;
- ▶ identify work hours and workdays;
- ▶ identify proposed speed limit changes if applicable;
- ▶ describe the signalized and nonsignalized intersections that would be affected by the work;

- ▶ describe the trucks that would be used during construction, including the number and size of the trucks used per day, their expected arrival and departure times, their general weight and size, and circulation patterns;
- ▶ identify all staging areas;
- ▶ require that access to all nearby parcels be maintained;
- ▶ present a strategy/plan with the City to address how potential Project-related pavement damage will be addressed;
- ▶ provide a description and/or documentation of the pavement conditions along the roadways used to access the site before the commencement of construction and at the conclusion of construction;
- ▶ coordinate with the City to determine how any potential pavement damage directly resulting from construction of the Project would be mitigated; and
- ▶ require that adequate emergency vehicle access to all surrounding parcels and properties be maintained at all times.

Significance after Mitigation

Less than significant.

3.15 UTILITIES AND SERVICE SYSTEMS

This section evaluates the availability of existing utility and infrastructure systems (water, stormwater, wastewater, solid waste, energy, and telecommunications) to serve the Project and the impact of the Project on these systems. The analysis is based on documents obtained from the City of Elk Grove and the Sacramento Regional County Sanitation District (Regional San), Sacramento County Water Agency (SCWA), representatives from the City, Sacramento Municipal Utility District (SMUD), and Pacific Gas and Electric Company (PG&E).

Comments were received from residents in response to the NOP. Commenters noted that the Draft EIR should identify any utility facility expansions and improvements by Project phase. Commenters also requested details on utility operation during a 200-year flood event and evaluation of water supply impacts related to compliance with Senate Bill (SB) 610, the SCWA Groundwater Management Plan, and the Sustainable Groundwater Management Act. These issues are considered below. The reader is referred to Chapter 2, "Project Description," and Appendix B for proposed on- and off-site utility improvements, Section 3.5, "Energy," for estimated energy demands of the Project, and Section 3.9, "Hydrology and Water Quality," for further analysis of water quality, groundwater, and flooding impacts.

3.15.1 Regulatory Setting

FEDERAL

Safe Drinking Water Act

As mandated by the Safe Drinking Water Act (Public Law 93-523), passed in 1974, the U.S. Environmental Protection Agency (EPA) regulates contaminants of concern to domestic water supply. Such contaminants are defined as those that pose a public health threat or alter the aesthetic acceptability of the water. These types of contaminants are regulated by EPA's primary and secondary maximum contaminant levels (MCLs). MCLs and the process for setting these standards are reviewed every 3 years. Amendments to the Safe Drinking Water Act enacted in 1986 established an accelerated schedule for setting drinking water MCLs. EPA has delegated responsibility for California's drinking water program to the State Water Resources Control Board Division of Drinking Water (SWRCB-DDW). SWRCB-DDW is accountable to EPA for program implementation and for adoption of standards and regulations that are at least as stringent as those developed by EPA.

NPDES Stormwater Permit for Discharges from Small Municipal Separate Storm Sewer Systems

The Municipal Stormwater Permitting Program regulates stormwater discharges from municipal separate storm sewer systems (MS4s). Stormwater is runoff from rain or snowmelt that runs off surfaces such as rooftops, paved streets, highways, or parking lots and can carry with it pollutants such as oil, pesticides, herbicides, sediment, trash, bacteria, and metals. The runoff can then drain directly into a local stream, lake, or bay. Often, the runoff drains into storm drains that eventually drain untreated runoff into a local waterbody.

The City of Elk Grove is a MS4 co-permittee with the Cities of Citrus Heights, Folsom, Galt, Rancho Cordova, and Sacramento and the County of Sacramento. National Pollutant Discharge Elimination System (NPDES) permits are issued for 5-year terms. The current region-wide permit (Order No. R5-2016-0040) adopted by the Central Valley Regional Water Quality Control Board (RWQCB) in June 2016 allows each permittee to discharge urban runoff from MS4s in its respective municipal jurisdiction and requires Phase I MS4 permittees to enroll under the region-wide permit as their current individual permits expire. Regional MS4 permit activities are managed jointly by the Sacramento Stormwater Quality Partnership, which consists of the seven jurisdictions covered by the permit.

Under the permit, each permittee is also responsible for ensuring stormwater quality management plans are developed and implemented that meet the permit's discharge requirements. Under the 2016 permit, measures include implementation of stormwater quality management plan that demonstrate how new development would

incorporate low-impact development (LID) design in projects. The permit also includes requirements for addressing total maximum daily loads (TMDLs). The City Department of Public Works is responsible for ensuring its specific MS4 permit (Order No. R5-2016-0040-005) requirements are implemented. Compliance with the MS4 permit is regulated through Chapter 15.12, Stormwater Management and Discharge Control, of the Elk Grove Municipal Code.

STATE

Urban Water Management Plan

In 1983, the California Legislature enacted the Urban Water Management Planning Act (UWMPA) (California Water Code Sections 10610–10656). The UWMPA states that every urban water supplier that provides water to 3,000 or more customers, or that provides more than 3,000 acre-feet (af) of water annually, should make every effort to ensure the appropriate level of reliability in its water service sufficient to meet the needs of its various categories of customers during normal, dry, and multiple dry years. This effort includes the adoption of an urban water management plan (UWMP) by every urban water supplier and an update of the plan every 5 years on or before December 31 of every year ending in a five or zero. The UWMPA has been amended several times since 1983, with the most recent amendment occurring with SB 318 in 2004. With the passage of SB 610 in 2001, additional information is required to be included as part of an urban water management plan if groundwater is identified as a source of water available to the supplier. An urban water supplier is required to include in the plan a description of all water supply projects and programs that may be undertaken to meet total projected water use. The UWMPA and SB 610 are interrelated; the UWMP is typically relied upon to meet the requirements of SB 610.

Groundwater Management Act

The Groundwater Management Act was first introduced in 1992 as Assembly Bill (AB) 3030, and has since been modified by Senate Bill (SB) 1938 in 2002, AB 359 in 2011, and the Sustainable Groundwater Management Act (SGMA) (SB 1168, SB 1319, and AB 1739) in 2014. The intent of the acts is to encourage local agencies to work cooperatively to manage groundwater resources within their jurisdictions and to provide a methodology for developing a groundwater management plan.

SGMA became law on January 1, 2015, and applies to all groundwater basins in the State (Water Code Section 10720.3). By enacting the SGMA, the legislature intended to provide local agencies with the authority and the technical and financial assistance necessary to sustainably manage groundwater within their jurisdiction (Water Code Section 10720.1).

Pursuant to the SGMA, any local agency that has water supply, water management, or land use responsibilities within a groundwater basin may elect to be a “groundwater sustainability agency” for that basin (Water Code Section 10723). The Sacramento Central Groundwater Authority (SCGA) has notified DWR that it has elected to become a groundwater sustainability agency pursuant to Water Code Section 10723.8 and that it intends to undertake sustainable groundwater management in an area roughly coincident with the Sacramento Valley Groundwater Basin, South American Subbasin.

California Water Code

Division 6, Part 2.10 (1995) of the California Water Code (Water Code) requires coordination between land use lead agencies and public water purveyors. The purpose of this coordination is to ensure that prudent water supply planning has been conducted and that planned water supplies are adequate to meet both existing demands and demands of planned development.

Water Code Sections 10910–10915 (inclusive) require land use lead agencies to (1) identify the responsible public water purveyor for a proposed development project and (2) request a water supply assessment (WSA) from the responsible purveyor. The objective of a WSA is to demonstrate the sufficiency of a purveyor's water supplies to satisfy the water demands of a proposed development project while still meeting the current and projected water demands of existing customers. Water Code Sections 10910–10915 delineate specific information that must be included in a WSA.

California Safe Drinking Water Act

The SWRCB-DDW is responsible for implementing the federal Safe Drinking Water Act (SDWA) and its updates, as well as California statutes and regulations related to drinking water. State primary and secondary drinking water standards are promulgated in California Code of Regulations (CCR) Title 22, Sections 64431–64501.

The California Safe Drinking Water Act was passed in 1976 to build on and strengthen the federal SDWA. The act authorized the California Department of Health Services to protect the public from contaminants in drinking water by establishing maximum contaminant levels that are at least as stringent as those developed by EPA, as required by the federal SDWA.

NPDES Permit for the Sacramento Regional Water Treatment Plant

The quality of the effluent that can be discharged to waterways in the Sacramento area by the Sacramento Regional Wastewater Treatment Plant (SRWTP) is established by the Central Valley RWQCB through waste discharge requirements (WDRs) that implement the NPDES permit. WDRs are updated at least every 5 years. A new permit must be issued in the event of a major change or expansion of the facility. In April 2016, the Central Valley RWQCB issued Order No. R5-2016-0020, NPDES No. CA 0077682, to Regional San for its Sacramento Regional Wastewater Treatment Plant (SRWTP), which treats wastewater from its service area before discharging the treated effluent to the Sacramento River. The water quality objectives established in the Central Valley RWQCB Basin Plan are protected, in part, by Order No. R5-2016-0020, NPDES No. CA 0077682. Currently, the SRWTP is permitted for a discharge of up to 181 million gallons per day (mgd) of treated effluent to the Sacramento River.

California Integrated Waste Management Act

To minimize the amount of solid waste that must be disposed of in landfills, the State Legislature passed the California Integrated Waste Management Act of 1989 (Assembly Bill [AB] 939) (Chapter 1095, Statutes of 1989), effective January 1990. According to AB 939, all cities and counties were required to divert 25 percent of all solid waste from landfill facilities by January 1, 1995, and 50 percent by January 1, 2000. Through other statutes and regulations, this 50 percent diversion rate also applies to State agencies. In order of priority, waste reduction efforts must promote source reduction, recycling and composting, and environmentally safe transformation and land disposal. In 2018, per capita disposal rates for Elk Grove (3.3 pounds per day [lb/day] per capita) are below the target disposal rates established by AB 939 (5.9 lb/day per capita) (CalRecycle 2019a).

In 2011, AB 341 (Chapter 476, Statutes of 2011) modified the act and directed the California Department of Resources Recycling and Recovery (CalRecycle) to develop and adopt regulations for mandatory commercial recycling. The resulting Mandatory Commercial Recycling Regulation (2012) requires that on and after July 1, 2012, certain businesses that generate 4 cubic yards or more of commercial solid waste per week must arrange recycling services. To comply with this requirement, businesses may either separate recyclables and self-haul them or subscribe to a recycling service that includes mixed waste processing. AB 341 also established a Statewide recycling goal of 75 percent; the 50 percent disposal reduction mandate still applies for cities and counties under AB 939.

California Building Energy Efficiency Standards (Title 24, Part 6)

The energy consumption of new nonresidential buildings in California is regulated by the California Energy Code (CCR Title 24 Part 6). The California Energy Code was established by the California Energy Commission (CEC) in 1978 in response to a legislative mandate to create uniform building codes to reduce California's energy consumption and as provide energy efficiency standards for residential and nonresidential buildings. CEC updates the California Energy Code every 3 years with more stringent design requirements for reduced energy consumption, which results in the generation of fewer greenhouse gas (GHG) emissions.

The 2019 California Energy Code, which was adopted by CEC on May 9, 2018, applies to projects constructed after January 1, 2020. Nonresidential buildings constructed after that date are anticipated to consume 30 percent less energy as compared to nonresidential buildings constructed under the 2016 California Energy Code, primarily through prescriptive requirements for high-efficiency lighting. The Energy Code is enforced through the local plan check and building permit process. Local government agencies may adopt and enforce additional energy standards

for new buildings as reasonably necessary related to local climatologic, geologic, or topographic conditions, provided that these standards exceed those provided in the California Energy Code.

LOCAL

Sacramento Central Groundwater Authority

The Sacramento Central Groundwater Authority (SCGA) manages groundwater in the Central Basin portion of the South American Subbasin. The SCGA was formed in 2006 through a joint powers agreement signed by the Cities of Elk Grove, Folsom, Rancho Cordova, and Sacramento and the County of Sacramento. Among its many purposes, the SCGA is responsible for managing the use of groundwater in the Central Basin to ensure long-term sustainable yield and for facilitating a conjunctive use program. The framework for maintaining groundwater resources in the Central Basin is the SCWA Groundwater Management Plan, which includes specific goals, objectives, and an action plan to manage the basin. The plan also prescribes a well protection program to protect existing private domestic wells and agricultural well owners from declining groundwater levels resulting from increased groundwater pumping due to new development in the basin (SCWA 2016a).

SCGA is preparing a Groundwater Sustainability Plan for submittal to DWR by January 31, 2022.

Water Forum Agreement

The Water Forum is made up of a diverse group of businesses, agricultural leaders, environmentalists, citizen groups, water managers, and local governments from Sacramento, Placer, and El Dorado counties. These stakeholders came together in 2000 to form an agreement for water management with the goals of providing a reliable and safe water supply for the region's economic health through the year 2030 and preserving the fishery, wildlife, recreation, and aesthetic values of the lower American River. The Water Forum Agreement was formalized through a Memorandum of Understanding whereby all signatories agreed to carry out the actions specified for them. SCGA relied on the negotiated volume of groundwater production referred to in the Water Forum Agreement as the basis for the groundwater yield thresholds described in the Alternative Submittal discussed above.

Sacramento County Water Agency Zone 40 Water Supply Master Plan

The Water Forum Agreement is the foundation for the Zone 40 Water Supply Master Plan (WSMP), which was adopted in February 2005 by the Sacramento County Water Agency. The Zone 40 WSMP describes available water supply and makes recommendations to meet future water demands in Zone 40 through 2030 through implementation of a regional conjunctive use program that balances the use of groundwater, surface water, and recycled water supplies. SCWA prepared amendments to the 2005 Zone 40 WSMP to address the sufficiency of water supply for the West Jackson, Jackson Township, and NewBridge projects (SCWA 2016b, cited in City of Elk Grove 2018). The existing City limits are within the boundaries of the Zone 40 WSMP, but the West and South Study Areas are not located in the buildout area identified in this plan.

Sacramento County Water Agency Zone 40 2016 Water Supply Infrastructure Plan

In 2006, SCWA prepared the Water Supply Infrastructure Plan (WSIP), which identified the water supply infrastructure needs necessary to support buildout of Zone 40. SCWA updated the plan in 2016 to reflect changes in the Zone 40 water supply portfolio, adoption of the Sacramento County General Plan, and completion of the Freeport Regional Water Project. The 2016 WSIP (includes water demand factors, growth projections, and estimates of projected water demand and supply (SCWA 2016b, cited in City of Elk Grove 2018). It also identifies recommended infrastructure types, locations, and timing to meet future demand through buildout. The West and South Study Areas are not located within the buildout area of the 2016 WSIP.

Sacramento Area Sewer District Standards and Specifications

The Sacramento Area Sewer District's (SASD) Standards and Specifications establish minimum standards for the SASD public sewer collection system. These standards apply to planning, design, construction, and rehabilitation of the public sewer collection system that SASD operates and maintains, require SASD's approval, or are installed within

existing or new public rights-of-way or easements. The standards ensure SASD assets are consistently designed and constructed. The Standards and Specifications were approved by the SASD Board of Directors on March 13, 2019.

Sacramento Regional County Sanitation District

Regional San 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. The district owns, operates, and is responsible for the collection, trunk, and interceptor sewer systems throughout the county, as well as the Sacramento Regional Wastewater Treatment Plant (SRWTP) located west of Elk Grove.

Regional San sets forth requirements for use of its wastewater collection and treatment system, provides for the enforcement of these requirements, establishes penalties for violations, and establishes the rates and fees for users of the district's sewer facilities.

City of Elk Grove General Plan

The following City General Plan (2019) policies are applicable to the Project. The reader is referred to Section 3.9, "Hydrology and Water Quality," for a discussion of groundwater and water quality General Plan policies.

- ▶ **Policy LU-3-33:** Ensure infrastructure and facilities are planned and designed to meet projected future demands.
- ▶ **Policy LU-3-34:** Ensure backbone infrastructure and facility improvements are installed concurrent with projected development demands to meet adopted City or agency service standards or adopted work level standards.
- ▶ **Policy LU-5-12:** Integrate sustainable stormwater management techniques in site design to reduce stormwater runoff and control erosion, during and after construction.
- ▶ **Policy ER-2-17:** Require all new development projects to incorporate runoff control measures to minimize peak flows of runoff and/or assist in financing or otherwise implementing comprehensive drainage plans.
- ▶ **Policy ER-2-18:** Drainage facilities shall be properly maintained to ensure their proper operation during storms.
- ▶ **Policy NR-3-4:** Ensure adequate water supply is available to the community by working with water providers on facilities, infrastructure, and appropriate allocation.
- ▶ **Policy NR-3-9:** Reduce the amount of water used by residential and nonresidential uses by requiring compliance with adopted water conservation measures.
- ▶ **Policy NR-3-10:** Promote the use of greywater systems and recycled water for irrigation purposes.
- ▶ **Policy NR-3-13:** Advocate for native and/or drought-tolerant landscaping in public and private projects.
 - **Standard NR-3-13.a:** Require the planting of native and/or drought-tolerant landscaping in landscaped medians and parkway strips to reduce water use and maintenance costs.
- ▶ **Policy ER-6-8:** Continue to participate in the Sacramento Stormwater Quality Partnership to educate and inform the public about urban runoff pollution, work with industries and businesses to encourage pollution prevention, require construction activities to reduce erosion and pollution, and require developing projects to include pollution controls that will continue to operate after construction is complete.
- ▶ **Policy INF-1-1:** Water supply and delivery systems shall be available in time to meet the demand created by new development.
 - **Standard INF-1-1.a:** The following shall be required for all subdivisions to the extent permitted by State law:

Proposed water supply and delivery systems shall be available at the time of tentative map approval to the satisfaction of the City. The water agency providing service to the project may use several alternative methods of supply and/or delivery, provided that each is capable individually of delivering water to the project.

The agency providing water service to the subdivision shall demonstrate prior to the City's approval of the Final Map that sufficient capacity shall be available to accommodate the subdivision plus existing development,

and other approved projects in the same service area, and other projects that have received commitments for water service.

Off-site and on-site water infrastructure sufficient to provide adequate water to the subdivision shall be in place prior to the approval of the Final Map or their financing shall be assured to the satisfaction of the City, consistent with the requirements of the Subdivision Map Act.

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

- ▶ **Policy INF-1-2:** Require that water flow and pressure be provided at sufficient levels to meet domestic, commercial, industrial, and firefighting needs.
- ▶ **Policy INF-1-3:** Protect the quality and quantity of groundwater resources, including those which serve households and businesses which rely on private wells. The City shall support and participate in local efforts to implement the State's Sustainable Groundwater Management Act.
- ▶ **Policy INF-1-4:** Work with Regional San and SCWA to expand recycled water infrastructure for residential, commercial, industrial, and recreational facilities and support the use of reclaimed water for irrigation wherever feasible.
- ▶ **Policy INF-2-1:** Sewage conveyance and treatment capacity shall be available in time to meet the demand created by new development.
 - **Standard INF-2-1.a:** The following shall be required for all development projects, excluding subdivisions:

Sewer/wastewater treatment capacity shall be available at the time of project approval.

All required sewer/wastewater infrastructure for the project shall be in place at the time of project approval, or shall be assured through the use of bonds or other sureties to the City's satisfaction.
- ▶ **Policy CIF-1-1:** Facilitate recycling, reduction in the amount of waste, and reuse of materials to reduce the amount of solid waste sent to landfill from Elk Grove.
- ▶ **Policy CIF-1-2:** Reduce municipal waste through recycling programs and employee education.
 - **Standard CIF-1-2.a:** Recycle waste materials for all municipal construction and demolition projects.
- ▶ **Policy CIF-1-3:** Encourage businesses to emphasize resource efficiency and environmental responsibility and to minimize pollution and waste in their daily operations.
- ▶ **Policy CIF-2-2:** Require that new utility infrastructure for electrical, telecommunication, natural gas and other services avoid sensitive resources, be located so as to not be visually obtrusive, and, if possible, be located within roadway rights-of-way or existing utility easements.
- ▶ **Policy CIF-2-3:** To minimize damage to roadways and reduce inconvenience to residents and businesses, the City shall seek to coordinate roadway utility efforts so that they are installed in a single operation whenever possible. Multiple installations, in which separate utilities are installed at different times and/or in different trenches, are specifically discouraged.
- ▶ **Policy CIF-2-4:** Maintain, improve, and modernize existing facilities and services when necessary to meet the needs of Elk Grove residents and businesses.
- ▶ **Policy IFP-1-10:** Except when prohibited by state law, the City will endeavor to ensure that sufficient capacity in all public services and facilities will be available on time to maintain desired service levels and avoid capacity shortages, traffic congestion, or other negative effects on safety and quality of life.

City of Elk Grove Storm Drainage Master Plan

The City's comprehensive Storm Drain Master Plan identifies drainage concepts for upgrading the existing storm drainage and flood control collection system. The plan identifies and analyzes existing drainage deficiencies throughout the City, provides a range of drainage concepts for the construction of future facilities required to serve the City at buildout of the existing General Plan, and establishes criteria for selecting and prioritizing projects. The plan may also be used for the development of a capital drainage financing program (City of Elk Grove 2011).

City of Elk Grove Source Reduction and Recycling Element

The City Source Reduction and Recycling Element implements AB 939 and consists of policies and programs designed to achieve the State's waste reduction mandates. The element projects the amount of disposal capacity needed to accommodate the waste generated within the City for a 15-year period.

City of Elk Grove Municipal Code

Municipal Code Chapter 14.10: Water Efficient Landscape Requirements

Municipal Code Chapter 14.10 identifies water management practices and water waste prevention for existing landscapes. It specifies requirements for planning, designing, installing, maintaining, and managing water efficient landscapes in new construction and rehabilitated projects.

Municipal Code Chapter 15.12: Stormwater Management and Discharge Control

Municipal Code Chapter 15.12 provides authority to the City for inspection and enforcement related to control of illegal and industrial discharges to the City storm drainage system and local receiving waters. It also addresses the requirement for best management practices (BMPs) and regulations to reduce pollutants in the City's stormwater.

Municipal Code Title 30: Solid Waste Management

Municipal Code Chapter 30.50 identifies requirements for commercial hauling such as required qualifications, vehicle specifications, and transportation specifications. Chapter 30.70 identifies requirements related to debris reduction, reuse, and recycling for new construction and demolition projects in the City. Specifically, Chapter 30.70 identifies requirements to recycle or divert no less than 65 percent of construction material and complete a waste management plan. Chapter 30.90 identifies space allocation and enclosure design guidelines for trash and recycling. For example, guidelines are provided for location and dimension of commercial trash and recycling enclosures.

3.15.2 Environmental Setting

WATER SUPPLY

SCWA (2019) prepared a WSA for the Project in accordance with Water Code Sections 10910–10915 (please refer to Appendix L). The discussion below summarizes the information in the referenced WSA.

SCWA supplies retail water to portions of unincorporated Sacramento County, the City of Rancho Cordova, and the City of Elk Grove and is made up of zones for drainage and long-range planning purposes, and zones for planning, design, and construction of major water supply facilities that benefit each zone (City of Elk Grove 2018). The Project is located in the Zone 40 potable water service area, which comprises the Mather Sunrise and Laguna Vineyard public water systems. The Mather Sunrise system consists of the Zone 40 North Service Area. The Laguna Vineyard water system consists of both the Zone 40 Central Service Area and South Service Area. The Project is in the Zone 40 South Service Area.

The Project is accounted for in the current Sacramento County Water Agency UWMP, which describes SCWA's existing and projected water demands through 2040 (SCWA 2019). Therefore, the UWMP serves as the base document for the Project's WSA. The water demand growth shown in the UWMP is based on the estimated gallons per capita per day (GPCD) target and the projected population growth. Establishing a GPCD target is a requirement for the UWMP in

accordance with the Water Conservation Act of 2009 (SB x7-7) so that each purveyor achieves a 20 percent reduction in water use by 2020. The target for SCWA is determined to be 236 gallons per capita per day in the 2015 UWMP.

With the population projection and the established GPCD target, the UWMP estimates the water demands for SCWA's service areas in 5-year increments for the 20-year projection (2020 to 2040) (see Table 3.15-1).

Table 3.15-1 Water Demands for SCWA Service Areas in Five-Year Increments – Normal Year (af/year)

	2020	2025	2030	2035	2040
RETAIL					
Zone 40	41,312	48,881	56,816	64,786	72,921
Arden Park Vista	3,630	3,527	3,412	3,315	3,315
East Walnut Grove	132	133	132	133	133
Hood	62	60	59	57	57
Northgate 880	1,264	1,168	1,148	1,131	1,131
Southwest Tract	21	21	21	21	21
Retail Subtotal	46,421	53,790	61,588	69,443	77,578
RECYCLED/RAW WATER	1,700	1,700	1,700	1,700	1,700
Retail + Recycled/Raw Water	48,121	55,490	63,288	71,143	79,278

Source: SCWA 2019

The water demands for single dry and multiple dry water years are listed in Table 3.15-2. The water supply allocation from the Central Valley Project (CVP) supply in 2015 was a historical low. The CVP allocation for the 3-year period from 2013 to 2015 was also the lowest historical 3-year sequence. The UWMP identifies 2013 as an average year and 2015 as a single dry year. For the drought period 2013–2015, 2013 is identified as the first year of multiple dry years, 2014 as the second year, and 2015 as the third year.

Table 3.15-2 SCWA Zone 40 Water Demands in Five-Year Increments in Normal, Single Dry, and Multiple Dry Years (af/year)

Water Year	2020	2025	2030	2035	2040
Normal Year (see Table 7-4 of UWMP)	48,121	55,490	63,288	71,143	79,278
Single Dry Year (see Table 7-6 of UWMP)	48,121	55,490	63,288	71,143	79,278
Multiple Dry Year 1 (see Table 7-8 of UWMP)	48,121	55,490	63,288	71,143	79,278
Multiple Dry Year 2 (see Table 7-8 of UWMP)	48,121	55,490	63,288	71,143	79,278
Multiple Dry Year 3 (see Table 7-8 of UWMP)	48,121	55,490	63,288	71,143	79,278

Source: SCWA 2019

The Project's water demands, as part of the Zone 40 water demand, will ultimately be met by conjunctive use of groundwater and surface water and a small portion of recycled water, as described in the WSMP and UWMP. Water demands do not change between normal and dry year conditions because water supplies are assured during these water year conditions (see Appendix L). SCWA currently exercises, and will continue to exercise, its rights as a groundwater appropriator to extract groundwater from the groundwater basin (Central Basin) underlying Zone 40 for delivery to its customers. As described in Section 3.15.1, "Regulatory Setting," SCGA is preparing a Groundwater Sustainability Plan for submittal to DWR by January 31, 2022.

SCWA has a remediated groundwater supply of 8,900 acre-feet per year (af/year) in accordance with the terms and conditions in the agreement entitled "Agreement between Sacramento County, SCWA, and Aerojet-General Corporation with Respect to Transfer of GET Water" dated May 18, 2010. This remediated groundwater supply is diverted by SCWA from the Sacramento River at Freeport along with SCWA's surface water supplies.

A greater proportion of groundwater is used in the Central Service Area and South Service Area of Zone 40. There is also some groundwater pumping in other SCWA service areas outside of Zone 40. The UWMP identifies SCWA's groundwater availability in the next 20 years, as shown in Table 3.15-3.

Table 3.15-3 SCWA Projected Groundwater Supply Availability (af/year)

	2020	2025	2030	2035	2040
Groundwater	47,000	47,000	52,000	62,000	62,000
Remediated Groundwater	8,900	8,900	8,900	8,900	8,900
Total	55,900	55,900	60,900	70,900	70,900

Source: SCWA 2019

Surface Water

The SCWA conjunctive use program includes the delivery of surface water within the Zone 40 boundaries as part of a comprehensive program to maintain the long-term, regional balance of the groundwater basin. The UWMP uses the terms "purchased water" and "surface water" to describe surface water supply. DWR defines purchased water as water purchased from other suppliers, including non-self-supplied surface water. Surface water is defined by DWR as self-supplied water that is drawn from streams, lakes, and reservoirs.

Purchased Water

SCWA has two sources of purchased surface water supplies, as described below.

1. Central Valley Project

The Central Valley Project water supply consists of the CVP contracts held by SCWA. One contract, referred to as the SMUD contract, is for 30,000 acre-feet annually. Most of the CVP water is diverted at the Freeport diversion on the Sacramento River and treated at the Vineyard surface water treatment plant. Occasionally, some of the CVP supplies are diverted from the Sacramento River and treated at the City's Sacramento River surface water treatment plant and delivered to SCWA at the Franklin Intertie.

SCWA entered into a contract in April 1999 with the U.S. Bureau of Reclamation (Reclamation) for 15,000 af/year of CVP supplies pursuant to Public Law 101-514. This contract is often referred to as "Fazio Water" in recognition of the efforts by Congressman Vic Fazio to secure this contract. The 15,000 af/year is available for SCWA through the Freeport diversion or Franklin Intertie.

SCWA's total CVP supply is subject to reductions in dry years. The water supply allocations are defined by Reclamation on a year-to-year basis and are expressed as a percentage of either the contract amount or the amount of average use. For the 21-year period from 1995 to 2015, the lowest allocation was in 2015 when it reduced to health and safety levels of 55 gallons per capita per day. Due to SCWA's abundant groundwater supplies, SCWA took no CVP water with that allocation.

The water supply allocations are based on a draft policy that defines water shortage terms and conditions. Reclamation initiated the development of a Municipal and Industrial (M&I) Water Shortage Policy in 1992, with several proposals prepared through 2001. The 2001 draft water shortage policy states that Reclamation would reduce M&I water to a contractor once irrigation water allocations are reduced below 75 percent of the contract amount. Reclamation has a provision in the draft policy for a minimum M&I shortage allocation of 75 percent that is applied to the last 3 years of historical use with certain adjustments, although the actual allocation in 2014 was 75 percent, and in 2015 the allocation was 25 percent of the use during the previous three unconstrained years ultimately ending with health and safety levels. In 2010, Reclamation convened several workshops that will lead to the development of an environmental impact statement that could potentially modify the existing policy or develop a new policy. This process has not been completed.

2. City of Sacramento's American River Place of Use Water Supply

A portion of Zone 40 lies within the City of Sacramento's American River Place of Use (POU). The City of Sacramento has a pre-1914 water right to the American River with a POU boundary that extends beyond the city's

boundary and includes a portion of Zone 40. The amount of water available to serve the POU area within Zone 40 is estimated to be 9,300 af/year. SCWA is planning for the future wholesale delivery of American River water within the POU. A connection would be constructed to supply the portion of Zone 40 in the POU area, with the timing based on when the supply is actually needed.

The City of Sacramento's diversions from the American River at the Fairbairn Water Treatment Plant are reduced when American River flows are less than the Hodge Flow Criteria, which would likely result in no POU water being available for SCWA in these circumstances. The City of Sacramento may decide to divert water during these restricted times at its Sacramento River diversion, although additional infrastructure might need to be constructed by the City of Sacramento to be able to convey this water to SCWA. It might be possible for SCWA to divert the POU water at the Freeport diversion. Given the uncertainty of the availability of POU water during dry periods, a supply allocation of zero percent is assumed for dry years and 100 percent for normal climate years.

Surface Water Rights

SCWA has an appropriative water supply that is self-supplied surface water drawn from the Sacramento River. In February 2008, SWRCB approved SCWA's appropriative right permit application to divert water from the American and Sacramento rivers (Permit 21209). The amount of appropriated water available for use could range up to 71,000 af/year in wet years, primarily during the winter months. This water would be diverted at the Freeport diversion on the Sacramento River and the City of Sacramento's diversion structure. Since SCWA's demands are low in the winter months, it is possible that not all of this supply could be used without the ability to store the water.

Contract documents, agreements, and applications for appropriative water and CVP water supplies are available for review. Table 3.15-4 shows all the surface water entitlements, water rights, and water services contracts to meet the buildout water demand.

Table 3.15-4 Surface Water Supply Entitlements, Water Rights, and Water Service Contracts to Meet SCWA Buildout Water Demand (af/year)

Water Supply Sources	Description	Wholesaler Supplied (Yes/No)	Status of Contract, Permit, and Agreement	Quantity (af/year)
Purchased Water	Wholesaler – (City of Sacramento) to serve portion of Zone 40 in City of Sacramento's American River POU	yes	Planned	9,300
Purchased Water	Supplier-produced surface water to serve Zone 40: U.S. Bureau of Reclamation – CVP Supply (SMUD and Fazio Water)	yes	Existing	45,000
Surface Water	Supplier-produced surface water to serve Zone 40: Appropriative Water – SWRCB Permit 21209	no	Existing	71,000
Total	—	—	—	125,300

Source: SCWA 2019

Table 3.15-5 presents the quantities of surface water supply pursuant to these water rights and contract entitlements in 5-year increments from 2020 to 2040. The projected volume takes into consideration facility constraints and hydrological constraints.

Table 3.15-5 Projected Reasonably Available Surface Water Supply in Five-Year Increments (af/year)

Water Supply	Description	2020	2025	2030	2035	2040
Purchased Water	Wholesaler – (City of Sacramento) to serve portion of Zone 40 in City of Sacramento's American River POU	0	0	0	0	0
Purchased Water	Supplier-produced surface water to serve Zone 40: U.S. Bureau of Reclamation – CVP Supply (SMUD and Fazio Water)	21,300	21,300	21,300	21,300	21,300
Surface Water	Supplier-produced surface water to serve Zone 40: Appropriative Water – SWRCB Permit 21209	4,000	4,000	4,000	4,000	4,000
Total		25,300	25,300	25,300	25,300	25,300

Source: SCWA 2019

WATER SUPPLY INFRASTRUCTURE

The Project site receives water supply through an existing 12-inch-diameter pipeline within West Taron Drive. Other water distribution facilities in the area include groundwater well facilities adjacent to the Project site to the south and at the intersection of Riparian Drive and Waterfowl Drive. On-site water distribution facilities consist of 10- and 12-inch-diameter pipelines (Wood Rogers 2020a)

STORMWATER

The Project site drains to an existing storm drain pipeline along West Taron Drive at four locations. The upstream end of this pipeline is adjacent to the Project site southwest of the West Taron Drive and Elk Grove Boulevard intersection and is 15 inches in diameter. This pipeline diameter increases to 36 inches at the southern portion of the site and flows southwest. This drainage pipeline receives runoff from West Taron Drive and a portion of Riparian Drive to the southeast, in addition to runoff from the Project site. The pipeline ultimately outfalls to a detention basin south of the Project site (see Appendix H for drainage details).

WASTEWATER TREATMENT

Treatment of wastewater generated by the City of Elk Grove is provided by the SRWTP located on 900 acres of a 3,550-acre site west of Elk Grove between I-5 and Franklin Boulevard, north of Laguna Boulevard. Another 2,650 acres serve as a "bufferland" between the SRWTP and nearby residential areas. Regional San owns and operates the SRWTP and provides wastewater treatment services to approximately 1.6 million residential, industrial and commercial customers throughout unincorporated Sacramento County; the cities of Citrus Heights, Elk Grove, Folsom, Rancho Cordova, Sacramento, and West Sacramento; and the communities of Courtland and Walnut Grove.

An upgrade of the SRWTP is currently under way. The upgrade, known as the EchoWater Project, must be built by 2023 to meet new water quality requirements that were issued by the Central Valley RWQCB as part of Regional San's 2010 NPDES permit. The requirements are designed primarily to help protect the Delta ecosystem downstream by removing most of the ammonia and nitrates and improving the removal of pathogens from wastewater discharge. The upgrade will include deployment of new treatment technologies and facilities, and will increase the quality of effluent discharged into the Sacramento River and ensure that the SRWTP discharge constituents are below permitted discharge limits specified in the NPDES permit. Flows to the SRWTP have decreased as a result of water conservation efforts over the last 10 years. Further, adequate capacity for wastewater is anticipated well into the future. Flows in 2014 were approximately 141 mgd, compared to the current permitted capacity of 181 mgd. It is not anticipated that Regional San will need to consider further improvements to the SRWTP until after 2050 (Regional San 2014).

WASTEWATER COLLECTION AND CONVEYANCE

SASD provides wastewater collection and conveyance services in the urbanized unincorporated area of Sacramento County, in the cities of Citrus Heights, Elk Grove, and Rancho Cordova, and in a portion of the cities of Sacramento and Folsom. SASD owns, operates, and maintains a network of 107 pump stations and approximately 80 miles of pressurized force main pipes (SASD 2017). SASD trunk sewer pipes function as conveyance facilities to transport the collected wastewater flows to the Regional San interceptor system. The existing City trunk line extends southeast from the SRWTP influent diversion structure to Laguna Boulevard, then parallel to State Route (SR) 99 along East Stockton Boulevard, extending close to the southern City boundary.

The SASD currently serves the Project site through a series of sewer mains, collectors, and a trunk line that connects to a 10-inch and 12-inch force main to a Regional San interceptor (Wood Rogers 2020b).

SOLID WASTE COLLECTION AND DISPOSAL

Solid waste generated by commercial developments is served by registered commercial haulers, county-authorized recyclers, and hazardous waste materials handlers. Solid waste generated in the City is taken to a variety of landfills (City of Elk Grove 2018). Table 3.15-6 shows landfills used by the City and the permitted and remaining capacities of those landfills. As shown, most of the landfills serving City waste haulers have over 70 percent remaining capacity.

Table 3.15-6 Disposal Facilities and Remaining Capacities

Facility	Total Estimated Permitted Capacity (in cubic yards)	Total Estimated Capacity Used		Remaining Estimated Capacity		Estimated Closure Year
		Cubic Yards	Percentage	Cubic Yards	Percentage	
Altamont Landfill & Resource Recovery (01-AA-0009)	124,400,000	59,000,000	47.4%	65,400,000	52.6%	2025
Recology Hay Road (48-AA-0002)	37,000,000	6,567,000	17.7%	30,433,000	82.3%	2077
Bakersfield Metropolitan SLF (15-AA-0273)	53,000,000	20,191,740	38.1%	32,808,260	61.9%	2046
Foothill Sanitary Landfill (39-AA-0004)	138,000,000	13,000,000	9.4%	125,000,000	90.6%	2082
Forward Landfill, Inc. (39-AA-0015)	51,040,000	28,940,000	56.7%	22,100,000	43.2%	2020
Keller Canyon Landfill (07-AA-0032)	75,018,280	11,609,870	15.5%	63,408,410	91%	2030
L and D Landfill Co. (34-AA-0020)	6,031,055	1,931,055	32%	4,100,000	84.5%	2023
North County Landfill (39-AA-0022)	41,200,000	5,800,000	14.1%	35,400,000	85.9%	2048
Potrero Hills Landfill (48-AA-0075)	83,100,000	69,228,000	83.3%	13,872,000	16.7%	2048
Sacramento County Landfill (Kiefer) (34-AA-0001)	117,400,000	4,500,000	3.8%	112,900,000	96.2%	2064

Sources: CalRecycle 2019b, 2019c, 2019d, 2019e, 2019f, 2019g, 2019h, 2019i, 2019j, 2019k

ENERGY

Electricity

The Sacramento Municipal Utility District provides all electric services in Elk Grove. SMUD is an independent operator of power and generates, transmits, and distributes electricity to an approximately 900-square-mile area with 10,473 miles of power lines located mostly in Sacramento County and small portions of Placer and Yolo counties. SMUD currently provides electricity to the Project site from existing underground 12-kilovolt (kV) facilities that would remain and are connected to SMUD's existing underground 12-kV facilities along Elk Grove Boulevard and West Taron Drive.

Natural Gas

Natural gas is supplied to the Project site by PG&E through local transmission lines that are supplied via a large natural gas transmission pipeline located within Elk Grove Boulevard.

TELECOMMUNICATIONS

Telecommunication (e.g., phone and internet) facilities are provided to the Project site through existing underground infrastructure facilities along the site's frontage with West Taron Drive.

3.15.3 Impacts and Mitigation Measures

METHODOLOGY

The evaluation of utility extension and service impacts is based on review of the Project infrastructure technical studies referenced in Section 3.15.2, "Environmental Setting," the WSA, published information and reports, and consultation with utility service providers. The impact analysis considers whether there is adequate capacity to serve the Project and whether infrastructure impacts would be required that could result in physical environmental impacts. The reader is referred to Section 3.5, "Energy," for estimated energy demands of the Project and to Section 3.9, "Hydrology and Water Quality," for further analysis of water quality, groundwater, and flooding impacts.

THRESHOLDS OF SIGNIFICANCE

A utilities and service systems impact would be significant if implementation of the Project would:

- ▶ require or result in the relocation or construction of new or expanded water, wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects;
- ▶ result in insufficient water supplies available to serve the Project and reasonably foreseeable future development during normal, dry, and multiple dry years;
- ▶ 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;
- ▶ generate solid waste in excess of State or local standards or in excess of the capacity of local infrastructure;
- ▶ negatively affect the provision of solid waste services or impair the attainment of solid waste reduction goals; or
- ▶ fail to comply with federal, State, and local management and reduction statutes and regulations related to solid waste.

ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Impact 3.15-1: Environmental Impacts from Expansion of Infrastructure

The Project would include the construction of off-site improvements to electrical distribution facilities and wastewater conveyance pipelines that would result in significant environmental impacts. Implementation of mitigation measures identified in this EIR would mitigate these impacts with the exception of visual character and construction noise. This impact would be **significant and unavoidable**.

As described in Chapter 2, "Project Description," the Project would include the expansion of off-site electrical distribution facilities and wastewater conveyance pipelines. As shown in Figure 2-21, these off-site improvements would occur along West Taron Drive, Riparian Drive, Elk Grove Boulevard, and Franklin Boulevard. The impacts of these improvements are addressed as part of the Project in the following impact discussions. The reader is referred to Sections 3.1 through 3.11 for further details regarding these impacts.

- ▶ Impact 3.1-1: Visual character impacts from Project construction activities. No feasible mitigation is available to mitigate this impact, so the impact would be significant and unavoidable.

- ▶ Impact 3.2-2: Construction air quality impacts. Implementation of Mitigation Measures 3.2-2a and 3.2-2b would reduce this impact to a less-than-significant level.
- ▶ Impact 3.3-1: Construction impacts on biological resources. Implementation of Mitigation Measures 3.3-1a and 3.3-1b would reduce this impact to a less-than-significant level.
- ▶ Impact 3.4-1: Archaeological resource impacts from construction. Implementation of Mitigation Measures 3.4-1a and 3.4-1b would reduce this impact to a less-than-significant level.
- ▶ Impact 3.4-2: Tribal cultural resource impacts from construction. Implementation of Mitigation Measures 3.4-1a and 3.4-1b would reduce this impact to a less-than-significant level.
- ▶ Impact 3.4-3: Human remain impacts from construction. Implementation of Mitigation Measure 3.4-3 would reduce this impact to a less-than-significant level.
- ▶ Impact 3.6-4: Paleontological resource impacts from construction. Implementation of Mitigation Measure 3.6-4 and 3.4-1b would reduce this impact to a less-than-significant level.
- ▶ Impact 3.7-1: Greenhouse gas emissions from construction and operation of the Project. Implementation of Mitigation Measures 3.7-1a and 3.7-1b would reduce this impact to a less-than-significant level.
- ▶ Impact 3.11-1: Construction noise impacts. Implementation of Mitigation Measure 3.11-1 would assist in reducing this impact, but the impact would be significant and unavoidable.

Mitigation Measures

As noted above and in Section 3.1, "Aesthetics," and Section 3.11, "Noise and Vibration," there are no feasible mitigation measures to address these impacts. Therefore, this impact is **significant and unavoidable**.

Significance after Mitigation

Significant and unavoidable.

Impact 3.15-2: Sufficient Water Supplies

Based on the WSA for the Project, prepared by SCWA, there is sufficient water to meet the demands of the Project during normal, single, and multiple dry years. This impact would be **less than significant**.

The Project's water supply demand at buildout would be 325.7 af/year. Initial water demands would be met predominantly with groundwater. SCWA would exercise its right as a groundwater appropriator to extract groundwater from the basin for delivery to the Project; surface water would be from existing entitlements diverted from the Sacramento River and treated at the water treatment plant. In the long term, the water demands of the Project would be met in accordance with the conjunctive use program (SCWA 2019).

SCWA determined that it has identified sufficient water supplies to meet the water demands of the Project over the next 20 years during normal, single dry, and multiple dry years. SCWA made this determination based on the information in the WSA and on the following specific facts:

- ▶ SCWA's conjunctive use program is a sustainable water supply program that provides a 100 percent reliable water supply while protecting environmental values and stabilizing the groundwater basin underlying Zone 40. As described in Section 3.15.1, "Regulatory Setting," SCGA is preparing a Groundwater Sustainability Plan for submittal to DWR by January 31, 2022.
- ▶ SCWA's conjunctive use program was extensively analyzed and documented in the WSMP, the Final EIR for the 2002 WSMP (certified in February 2006), the Final EIR for the Water Forum Agreement (certified in 1999), and the Water Forum Agreement. All these documents have been subjected to thorough technical peer review and public scrutiny.
- ▶ A financing plan for SCWA's conjunctive use program for constructing facilities required for delivering groundwater and surface water to the Project has been approved by the SCWA Board through its adoption of the WSMP, Bond Feasibility Reports, and the Sacramento County Water Agency Code.

The UWMP demonstrates that SCWA's total projected water supplies during normal, single dry, and multiple dry water years meet the proposed water demands over the next 20 years, as shown in Table 3.5-7.

Table 3.15-7 Zone 40 Water Supply Sufficiency Analysis in Five-Year Increments (af/year)

Water Year	2020	2025	2030	2035	2040
Normal Year (see Table 7-4, UWMP)					
Total Supply	82,900	82,900	87,900	97,900	97,900
Total Demand	48,121	55,490	63,288	71,143	79,278
Sufficiency (Supply Minus Demand)	34,779	27,410	24,612	26,757	18,622
Single Dry Year (see Table 7-6, UWMP)					
Total Supply	70,200	70,500	74,600	83,600	83,800
Total Demand	48,121	55,490	63,288	71,143	79,278
Sufficiency (Supply Minus Demand)	22,079	15,010	11,312	12,457	4,522
Multiple Dry Year (1) (see Table 7-8, UWMP)					
Total Supply	77,900	77,900	81,900	90,900	90,900
Total Demand	48,121	55,490	63,288	71,143	79,278
Sufficiency (Supply Minus Demand)	29,779	22,410	18,612	19,757	11,622
Multiple Dry Year (2) (see Table 7-8, UWMP)					
Total Supply	77,900	77,900	81,900	90,900	90,900
Total Demand	48,121	55,490	63,288	71,143	79,278
Sufficiency (Supply Minus Demand)	29,779	22,410	18,612	19,757	11,622
Multiple Dry Year (3) (see Table 7-8, UWMP)					
Total Supply	70,200	70,500	74,600	83,600	83,800
Total Demand	48,121	55,490	63,288	71,143	79,278
Sufficiency (Supply Minus Demand)	22,079	15,010	11,312	12,457	4,522

Source: SCWA 2019

The WSA documents all required information specifically delineated in Water Code Sections 10910–10915 (see Appendix L). It demonstrates that SCWA's water supplies are sufficient to satisfy the water demands of the currently proposed Project while still meeting the current and projected water demands of existing customers in the next 20 years. If there are significant changes to land uses for the proposed Project in the future, this WSA may need to be revisited and updated accordingly. Impacts related to water supply would be **less than significant**.

Mitigation Measures

No mitigation is required.

Impact 3.15-3: Impacts to Available Wastewater Treatment Capacity

The proposed Project's would have a wastewater generation of approximately 0.24 mgd and would result in 0.17 percent increase over existing wastewater treatment volumes. This would be within the SRWTP's permitted capacity of 181 mgd. Therefore, the Project's wastewater generation would be accommodated within the existing and planned treatment capacity of the SRWTP. This impact is considered **less than significant**.

The Project is estimated to generate approximately 0.24 mgd ADWF. Regional San treats an average of 141 million gallons of wastewater per day. The proposed Project's wastewater generation would be an approximately 0.17 percent increase over existing wastewater treatment volumes. It is not anticipated that Regional San will need to consider

further improvements to the SRWTP until after 2050 (Regional San 2014). Therefore, the Project's wastewater generation may be accommodated within the existing and planned treatment capacity of the SRWTP. This impact is considered **less than significant**.

The reader is referred to Chapter 2, "Project Description," for Project proposed wastewater conveyance improvements to accommodate Project wastewater conveyance flows.

Mitigation Measures

No mitigation is required.

Impact 3.15-4: Impacts to Solid Waste Facilities and Compliance with Regulations Related to Solid Waste

The Project would include uses that would increase the generation solid waste, including municipal solid waste, medical waste, and radioactive waste. Waste generated at the Project site may be accommodated by several permitted haulers, and wastes would be hauled to a permitted landfill for disposal as selected by the hauler. There is substantial remaining capacity in the landfills serving local waste haulers, with an average remaining capacity of more than 70 percent. Therefore, because the Project would not generate solid waste in excess of State or local standards or in excess of the capacity of the local infrastructure, negatively impact the provisions of solid waste services, or impact the attainment of solid waste reduction goals, this impact would be **less than significant**.

The Project would include uses that would increase the generation solid waste, including municipal solid waste, medical waste, and radioactive waste. Several laws and regulations at the federal, State, and local levels affect the management of hazardous materials and hazardous wastes. In California, EPA has granted most enforcement authority over federal hazardous materials regulations to the California Environmental Protection Agency. In turn, the State has granted authority to the Sacramento County Department of Public Health (SCDPH) to enforce most regulations pertaining to hazardous materials in the City of Elk Grove. Two types of hazardous waste would be generated by the Project: medical waste and radioactive waste. These waste streams would be managed as described below. The reader is referred to Section 3.8, "Hazards and Hazardous Materials," for further discussion of the handling of hazardous waste.

- ▶ **Medical Waste Management.** Medical wastes are generated or produced as a result of diagnosis, treatment, or immunization of humans and the production or testing of biologicals, and are either biohazardous waste or sharps waste. Cultures, blood and blood products, tissues, and body parts are considered medical wastes. The transportation and disposal of medical wastes at the CNU Medical Center Project will be closely regulated under the California Medical Waste Management Program with regulatory oversight by SCDPH. The program includes requirements for facilities that generate large quantities of medical waste, waste haulers, containment and storage of medical waste, and enforcement.
- ▶ **Radioactive Waste Management.** Pursuant to the federal Atomic Energy Act requiring states to assume responsibility for the use, transportation, and disposal of low-level radioactive material and for the protection of the public from radiation hazards, the Radiological Health Branch (RHB) of the California Department of Health Services administers the Radiation Control Law, which governs the use, transportation, and disposal of radioactive material and radiation-producing equipment. Radioactive material regulations require registration of sources of ionizing radiation, licensing of radioactive material, and protection against radiation exposures. RHB also regulates the transportation of radioactive materials and the disposal of radioactive wastes. The regulations specify appropriate use and disposal methods for radioactive substances, as well as worker safety precautions and health monitoring programs. Radioactive materials at the CNU Medical Center Project will be managed under a Radioactive Material License issued by RHB. The medical center will also obtain a Medical Waste Permit as a large quantity medical waste generator with on-site treatment as part of the Regulated Medical Waste Management Program, overseen by SCDPH.
- ▶ **Construction Waste.** Demolition of existing development on the Project site would consist of removal of commercial, retail, and restaurant space along with the associated parking lots occupying 2501, 2505, 2509/2513,

and 2525 West Taron Court. A parking lot associated with 9650 West Taron Drive would also be removed. However, the City's construction diversion rate is estimated at over 50 percent (City of Elk Grove 2018). Therefore, implementation of the City's existing recycling programs and associated regulations would reduce the volume of generated wastes to be disposed of in landfills. In addition, Elk Grove Municipal Code Section 30.70.030(E) requires that all projects recycle or divert at least 65 percent of the material collected at the construction site, not including excavated soil and land clearing debris. Excavated soil and land clearing debris are required to be 100 percent recycled under Section 30.70.030(E). Thus, to the extent feasible, concrete and other construction materials would be recycled. The remainder would be disposed of in a local landfill. As shown in Table 3.15-6, adequate capacity to accept waste is available at various nearby landfills due to available capacity of over 50 percent for eight listed landfills and estimated closure dates extending to 2082 (Foothill Sanitary Landfill).

Using assumptions included in the Elk Grove General Plan EIR, new residents (i.e., dorm residents) are assumed to generate a total of 5.9 pounds of waste per resident per day and new jobs would generate 11.4 pounds of waste per employee per day. Waste generation rates for the hospital were based on posted assumptions on CalRecycle's website of 16 pounds per bed per day at a hospital. (CalRecycle 2019I). As shown in Table 3.15-8, projected solid waste generation associated with the Project would be 9,812 tons per year.

Table 3.15-8 Projected Solid Waste Generation

Projection	Disposal Rate	Annual Disposal Rate	Project Waste Generation
300 resident dorm	5.9 lbs/resident/day	1.08 tons/resident	324 tons/year
4,000 employees	11.4 lbs/employee/day	2.08 tons/employee	8,320 tons/year
400 patient beds	16 lbs/bed	2.92 tons/bed	1,168 tons/year
Total Projected Solid Waste Generation			9,812 tons/year

Source: Compiled by Ascent Environmental in 2020

The Project Applicant would prepare a waste management plan (WMP), as required for generators that utilize hospital medical infectious waste. The Project would be responsible for the proper identification, segregation, and management of all waste streams. The purpose of the WMP is to outline opportunities for waste reduction and identify wastes that may be recycled rather than incinerated.

Table 3.15-9 shows the composition of a typical hospital waste stream.

Table 3.15-9 Composition of a Typical Hospital Solid Waste Stream

Waste Type	Percentage
Paper	54
Organics (including yard waste)	19
Plastics	15
Metals	3
Glass	2
Other (including disposable diapers)	7

Source: DHS 2017

Municipal solid waste, recyclable materials, and compostable food waste would be separated on site and collected by a contracted waste hauler. Waste generated at the Project site may be hauled by several permitted haulers, and wastes would be hauled to a permitted landfill for disposal as selected by the hauler. As shown in Table 3.15-6, there is substantial remaining capacity in the landfills serving local waste haulers, with an average remaining capacity of more than 70 percent. Therefore, the proposed Project would be served by solid waste management companies and landfills with sufficient capacity to serve the future development. The Project would be required to comply with all applicable solid waste regulations identified above, which would be ensured through the development review process. Therefore, because the Project would not generate solid waste in excess of State or local standards or in

excess of the capacity of the local infrastructure, negatively impact the provisions of solid waste services, or impact the attainment of solid waste reduction goals, this impact would be **less than significant**.

Mitigation Measures

No mitigation is required beyond federal, State, and City regulations that address solid waste handling, recycling and diversion requirements identified above.

4 CUMULATIVE IMPACTS

4.1 INTRODUCTION TO THE CUMULATIVE ANALYSIS

This Draft EIR provides an analysis of cumulative impacts of the proposed CNU Medical Center Project, as required by Section 15130 of the State CEQA Guidelines. The goal of such an exercise is twofold: first, to determine whether the overall long-term impacts of all such projects would be cumulatively significant, and second, to determine whether the incremental contribution to any such cumulatively significant impacts of the Project would be “cumulatively considerable” (and thus significant). (See State CEQA Guidelines Sections 15130[a]–[b], Section 15355[b], Section 15064[h], and Section 15065[c]; and *Communities for a Better Environment v. California Resources Agency* [2002] 103 Cal. App. 4th 98, 120.) In other words, the required analysis intends first to create a broad context in which to assess 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 all projects is itself significant (i.e., “cumulatively considerable”).

Cumulative impacts are defined in State CEQA Guidelines Section 15355 as “two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts.” A cumulative impact occurs from “the change in the environment which results from the incremental impact of the project when 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” (State CEQA Guidelines Section 15355[b]).

4.2 CUMULATIVE IMPACT ANALYSIS METHODOLOGY

Consistent with State CEQA Guidelines Section 15130, the discussion of cumulative impacts in this Draft EIR focuses on significant and potentially significant cumulative impacts. Section 15130(b) of the State CEQA Guidelines provides, in part, the following:

[t]he discussion of cumulative impacts shall reflect the severity of the impacts and their likelihood of occurrence, but the discussion need not provide as great detail as is provided for the effects attributable to the project alone. The discussion should be guided by the standards of practicality and reasonableness, and should focus on the cumulative impact to which the identified other projects contribute rather than the attributes of other projects which do not contribute to the cumulative impact.

A proposed project is considered to have a significant cumulative effect if:

- ▶ the cumulative effects of development without the project are not significant and the project’s additional impact is substantial enough, when added to the cumulative effects, to result in a significant impact, or
- ▶ the cumulative effects of development without the project are already significant and the project contributes measurably to the effect.

The term “measurably” is subject to interpretation. The standards used herein to determine measurability are that the impact must be noticeable to a reasonable person or must exceed an established threshold of significance (defined throughout the resource sections in Chapter 3 of this Draft EIR). This cumulative analysis also assumes that all mitigation measures identified in Chapter 3 to mitigate Project impacts are adopted and implemented and that all elements of the design-build performance criteria that would minimize environmental effects are implemented.

The State CEQA Guidelines (Section 15130) identify two basic methods for establishing the cumulative environment in which the project is to be considered: the use of a list of past, present, and probable future projects or the use of adopted projections from a general plan, other regional planning document, or a certified EIR for such a planning document. This analysis uses a combination of the list and planning document approach, as described further below.

4.2.1 Geographic Scope

The geographic area that may be affected by the Project and is appropriate for a cumulative impact analysis varies depending on the environmental resource topic, as presented in Table 4-1.

Table 4-1 Geographic Scope of Cumulative Impacts

Resource Topic	Geographic Area
Aesthetics	Project site and City General Plan planning area
Air Quality	Sacramento Valley Air Basin and Sacramento County within the jurisdiction of the Sacramento Metropolitan Air Quality Management District, and immediate Project vicinity (pollutant emissions that are localized)
Biological Resources	Greater Project area vicinity, including adjacent migration and movement corridors
Cultural and Tribal Cultural Resources	City and surrounding Sacramento Valley region (historical resources), former territory of the Nisenan and Plains Miwok (archaeological resources, human remains, and tribal cultural resources)
Energy	Sacramento Municipal Utility District (SMUD) and Pacific Gas and Electric Company (PG&E) service areas
Geology and Soils	Flood terraces of the Sacramento River and its tributaries within the Riverbank and Modesto geologic formations (unique paleontological and geological resources)
Greenhouse Gas Emissions and Climate Change	Global/Statewide
Hazards and Hazardous Materials	City
Hydrology and Water Quality	South Stone Lake–Snodgrass Slough watershed for surface waters and the central South American Subbasin for groundwaters
Land Use and Planning	City and immediate Project vicinity
Noise	Project site and immediate vicinity
Population, Employment, and Housing	City
Public Services	Local service areas (e.g., Cosumnes Community Services District Fire Department and Elk Grove Police Department)
Transportation	City and City General Plan planning area
Utilities and Service Systems	Local service areas (e.g. Sacramento County Water Agency, Sacramento Regional County Sanitation District, Sacramento Area Sewer District) and service areas for landfills that serve the City, SMUD, and PG&E)

Source: Compiled by Ascent Environmental in 2020

4.3 CUMULATIVE SETTING

4.3.1 Regional Planning Environment

City of Elk Grove General Plan

The 2019 *City of Elk Grove General Plan* is a broad framework for planning the future of the City. It is the official policy statement of the City Council that is used to guide the private and public development of the City in a manner to gain the maximum social and economic benefit to the citizens. The planning area for the General Plan includes both land within City boundaries (37 square miles, or 23,453 acres) and lands outside the City in unincorporated Sacramento County to the south and east (12.2 square miles, or 7,795 acres) in four study areas.

Development within the current City limits is anticipated to generate a maximum of 72,262 dwelling units, 233,406 residents, and 81,784 jobs. Assuming future annexation and development of the study areas, buildout under the 2019

General Plan would result in a maximum of 102,865 dwelling units, 332,254 residents, and 122,155 jobs (City of Elk Grove 2019:Table 3-2). The EIR for the General Plan analyzes the full development potential of the General Plan Land Use Diagram, including the study areas, compared to existing (2015) conditions (City of Elk Grove 2018).

4.3.2 Related Projects

A list of probable future projects is provided below. Probable future projects are those in the Project vicinity that have the possibility of interacting with the Project to generate a cumulative impact (based on proximity and construction schedule) and either:

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

Past and present projects in the vicinity are also considered as part of the cumulative analysis because they contribute to the existing conditions upon which the Project's and probable future projects' environmental effects are considered.

Table 4-2 briefly summarizes reasonably foreseeable projects within approximately 5 miles of the Project site in the City of Elk Grove, the City of Sacramento, and unincorporated Sacramento County with the potential to contribute to the cumulative condition. The approximate locations of the related projects are provided in Figure 4-1.

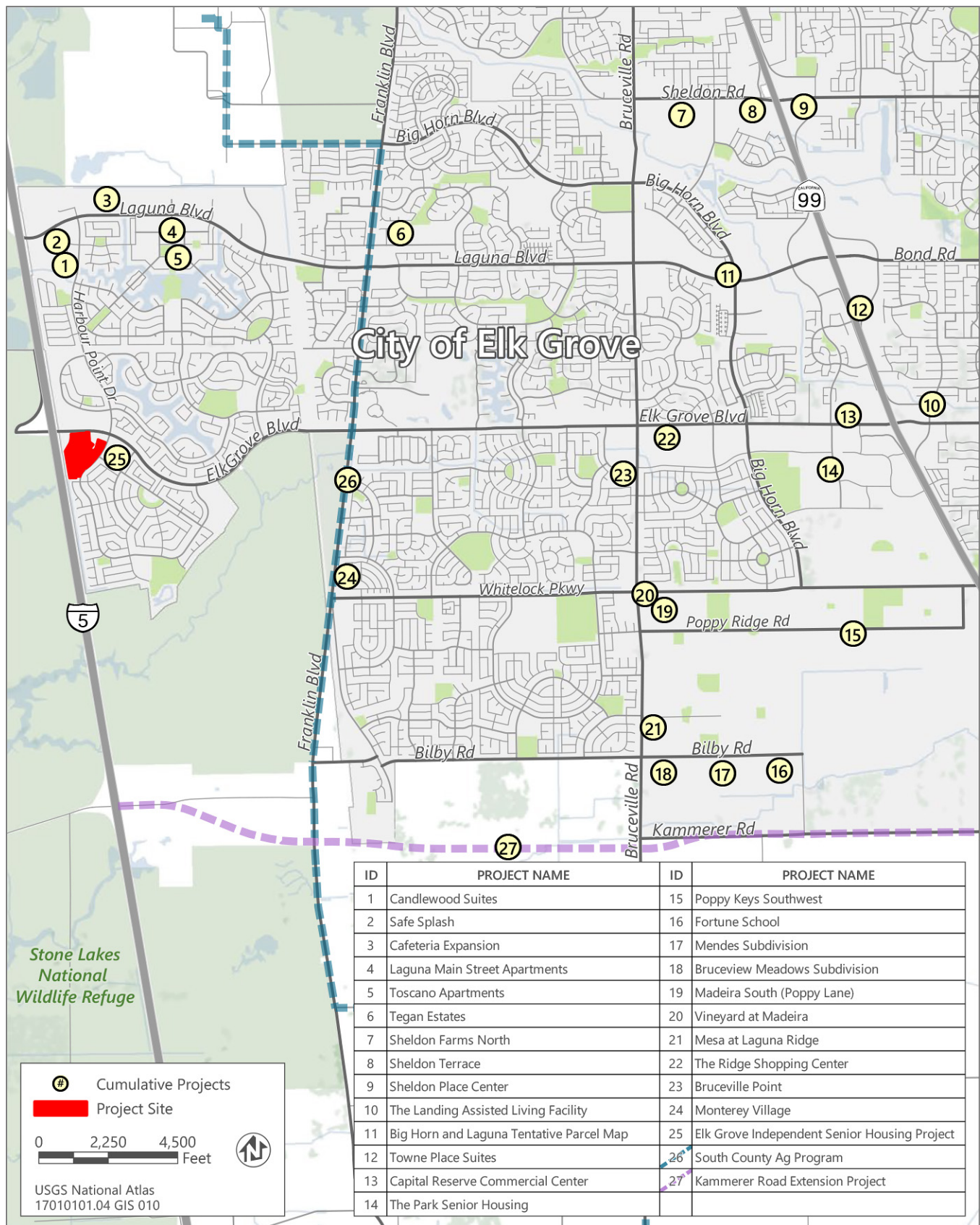
Table 4-2 Related Projects

#	Project	Location	Description	Status
1	Candlewood Suites	9180 Klagge Court, Elk Grove	104-room hotel	In plan review
2	Safe Splash	2260 Longport Court, Elk Grove	6,756-sq.-ft. swim lesson facility	Completed
3	Cafeteria Expansion	2521 Laguna Boulevard, Elk Grove	9,817-sq.-ft. kitchen and cafeteria with unattached 2,436-sq.-ft. patio. Addition to the existing Apple campus	Approved
4	Laguna Main Street Apartments	Laguna Main Street and Vaux Avenue, Elk Grove	150-unit apartment complex	In plan review
5	Toscano Apartments	Mumfort Court, Elk Grove	206-unit apartment complex	In plan review
6	Tegan Estates	5201 Teagan Road, Elk Grove	39 residential parcels on 12 acres	Subdivision request in plan review
7	Sheldon Farms North	South of Sheldon Road between Bruceville Road and Lewis Stein Road, Elk Grove	79 acres with up to 391 single-family residential units, 5 acres with up to 126 multifamily residential units, 5 acres of commercial, and 10 acres of parks and open space	Subdivision request in plan review
8	Sheldon Terrace	South of Sheldon Road west of State Route 99, Elk Grove	Up to 175 new homes	Under construction
9	Sheldon Place Center	Southwest corner of Sheldon Road and East Stockton Boulevard, Elk Grove	78,800-sq.-ft. shopping center with restaurant, hotel, retail, and gas station	Under construction
10	The Landing Assisted Living Facility	871 East Stockton Boulevard, Elk Grove	Elderly care facility with 48 memory care units, 107 assisted living units, and 50 independent living cottages on a 10-acre site	Under construction

#	Project	Location	Description	Status
11	Big Horn and Laguna Tentative Parcel Map	Big Horn Boulevard, Elk Grove	Request to subdivide a 2-acre parcel into two lots for future commercial development	Subdivision request in plan review
12	TownePlace Suites	West of East Stockton Boulevard between Bond Road and Elk Grove Boulevard, Elk Grove	Four-story, 112-room, 63,56-sq.-ft. hotel	Under construction
13	Capital Reserve Commercial Center	Oak Reserve Lane, Elk Grove	Four new single-story commercial buildings totaling 27,100 sq. ft.	Under construction
14	The Park Senior Housing	Southwest corner of Laguna Springs Drive and Civic Center Drive, Elk Grove	105-unit elderly care facility on 11-acre site	Under construction
15	Poppy Keys Southwest	South of Poppy Ridge Road, Elk Grove	267 single-family residential lots on 61 acres	Subdivision request in plan review
16	Fortune School	Bilby Road and McMillan Road, Elk Grove	Charter school for 800 students	Approved
17	Mendes Subdivision	Bilby Road, Elk Grove	216 single-family residential lots, two office lots, a school, and park on 80 acres	Tentative map approved
18	Bruceview Meadows Subdivision	10425 Bruceville Road, Elk Grove	332 single-family homes	Under construction
19	Madeira South (Poppy Lane)	North and South of Poppy Ridge Road, Elk Grove	460 single-family homes	Under construction
20	Vineyard at Madeira	Bruceville Road, Elk Grove	Shopping center that includes 189,035 sq. ft. of retail floor area	Partially complete
21	Mesa at Laguna Ridge	10371 Bruceville Road, Elk Grove	180-multifamily-unit apartment complex	Under construction
22	The Ridge Shopping Center	Southwest corner of Bruceville Road and Elk Grove Boulevard, Elk Grove	230,00 sq. ft. of commercial in 14 buildings over 24 acres	Partially complete
23	Bruceville Point	9730 Backer Ranch Road, Elk Grove	163,832-sq.-ft., three-story elderly care facility with 20 rooms for memory care and 117 for assisted living	Under construction
24	Monterey Village	Whitelock Parkway east of Franklin Boulevard, Elk Grove	Compact lot homes	Under construction
25	Elk Grove Independent Senior Living	2730 Elk Grove Boulevard	142 residential dwelling units on 5.1 acres	Under review
26	South County Ag Program	Southwestern Elk Grove and Sacramento County, between Sacramento Regional Wastewater Treatment Plant and the Cosumnes River.	Program to deliver recycled water to irrigate agriculture and habitat conservation, as well as groundwater recharge; includes a new transmission line to convey recycled water from the Sacramento Regional Wastewater Treatment Plant to agricultural lands in southern Sacramento County	In environmental review
27	Kammerer Road Extension Project	Kammerer Road, near the City of Elk Grove's southern boundary	Widen and extend Kammerer Road from State Route 99 to Interstate 5	Approved
28	EchoWater Project	8521 Laguna Station Road, Elk Grove	Major upgrades to Sacramento Regional County Sanitation District's wastewater treatment plant, including 20 separate construction projects	Under construction

Note: sq. ft. = square feet.

Sources: Compiled by Ascent Environmental in May 2020 based on review of City of Elk Grove 2020, Sacramento County 2020, City of Sacramento 2020, and Regional San 2020



Source: Adapted by Ascent Environmental in 2020

Figure 4-1 Related Projects

4.4 ANALYSIS OF CUMULATIVE IMPACTS

As indicated above, CEQA requires that an EIR include an assessment of the cumulative impacts that could be associated with project implementation. This assessment involves examining project-related effects on the environment in the context of similar effects that have been caused by past or existing projects, as well as the anticipated effects of future projects. An EIR must discuss the cumulative impacts of a project when its incremental effect will be cumulatively considerable. Although project-related impacts may be individually minor, the cumulative effects of these impacts, in combination with the impacts of other projects, could be significant under CEQA and must be addressed (CEQA Guidelines, Section 15130[a]). Section 15130(a)(3) states that an EIR may determine that a project's contribution to a significant cumulative impact will be rendered less than cumulatively considerable, and thus not significant, if a project is required to implement or fund its fair share of a mitigation measure or measures designed to alleviate the cumulative impact. Section 15130(b) indicates that the level of detail of the cumulative analysis need not be as great as for the project impact analyses; that it should reflect the severity of the impacts and their likelihood of occurrence; and that it should be focused, practical, and reasonable.

The following sections contain a discussion of the cumulative effects anticipated from implementation of the CNU Medical Center Project, together with related projects and planned development, for each of the environmental issue areas evaluated in this Draft EIR. The analysis herein analyzes whether, after implementation of Project-specific mitigation that minimize environmental effects, the residual impacts of the Project would cause a cumulatively significant impact or would contribute considerably to existing or anticipated (without the Project) cumulatively significant effects. Where the Project would so contribute, additional mitigation is recommended where feasible.

Aesthetics

The geographic context for cumulative impacts related to aesthetics is confined to those areas that would be visible in the landscape in the vicinity of the Project. For a project to contribute to a cumulative impact with respect to visual resources or aesthetics, the project would need to be visible within the same views or viewshed as other contributing projects, with the combination of multiple projects within the views creating an adverse visual effect. The City General Plan EIR identified visual character and lighting/glare impacts from buildout of the City and planning area as cumulatively considerable and significant and unavoidable (City of Elk Grove 2019).

Aesthetic impacts related to visual character and quality impacts and light and glare identified for the Project are summarized below. As discussed in Section 3.1, "Aesthetics," implementing the Project would not result in impacts on scenic vistas or scenic resources (scenic roadways and highways) and would therefore not combine to create considerable changes and cumulative effects on visual resources. Therefore, impacts related to scenic vistas or scenic resources are not discussed further.

Impact 4-1: Contribute to Cumulative Visual Character Impacts

As identified in Impact 3.1-1, the Project would result in a significant and unavoidable visual character impact because of its height and massing. Although this Project would not further expand the urban footprint of the City, the hospital's height (approximately 261 feet) would create a new urban feature in the skyline of the City that would be visible beyond the immediate area surrounding the Project site. There are no buildings of this exact height in the City or its planning area. The next largest buildings are the planned Wilton Rancheria Casino Resort (12-story and 302-room hotel) and the planned Dignity Health Hospital (6-story and 303-bed hospital). This change in the visual character of the City would further contribute to the significant cumulative visual character impacts identified in the City General Plan EIR. The Project's contribution to substantial changes to the visual character or quality of public views **would be cumulatively considerable and significant and unavoidable**.

Mitigation Measures

No feasible mitigation measures are available to mitigate the substantial alteration of the Project site's visual character as proposed associated with the height of the proposed hospital and its alteration of the City skyline.

Project design alternatives associated with height are considered in Chapter 5, "Alternatives." This impact **would be cumulatively considerable and significant and unavoidable**.

Impact 4-2: Contribute to Cumulative Light and Glare Impacts

Continued urbanization of the region introduces additional sources of nighttime light and glare. Overall, continued development increases skyglow and other nighttime illumination within the region. Although new development projects in the City are required to comply with the design guidelines and with Municipal Code Chapter 23.56 for lighting standards and General Plan Standard LU5-4.a, which reduce light and glare impacts, the adverse effects of adding new light and glare sources within the City contribute to the cumulative impact. The Project would increase ambient light levels and would introduce a unique and tall source of new lighting from the exterior and interior lighting of the 261-foot hospital building and the helicopter landing site. This Project lighting impact **would be cumulatively considerable and significant and unavoidable** in addition to anticipated cumulative lighting impacts for the City.

Mitigation Measures

Mitigation Measure 3.1-3 would avoid daytime glare through the use of nonreflective materials consistent with City Design Guideline 11 Chapter 5B. Although the use of curtains/blinds would reduce the extent of building interior lighting at night, it would not eliminate all light sources, such as building entry features and the helicopter landing site. Because of the height and mass of the hospital building, no feasible mitigation measures are available to offset the Project's contribution to lighting impacts. This impact **would be cumulatively considerable and significant and unavoidable**.

Air Quality

The geographic context for cumulative impacts related to air quality is regional for criteria air pollutant and ozone precursors and includes the Sacramento Valley Air Basin and Sacramento County within the jurisdiction of the Sacramento Metropolitan Air Quality Management District (SMAQMD), and the context is local for toxic air contaminants and odors. Cumulative development in the region will continue to increase the concentration of pollutants from construction activities, traffic, natural gas combustion in buildings, area sources, and stationary sources, but this increase would be partially offset by State and federal policies that set emissions standards for mobile and nonmobile sources.

The City General Plan EIR identified cumulative air quality impacts from buildout of the City and planning area as cumulatively considerable and significant and unavoidable (City of Elk Grove 2019).

Toxic air contaminants (TACs), carbon monoxide, and odor are localized impacts for the Project area. There are no existing or planned land uses adjacent to the Project that would be a large stationary sources of local TACs or odors. Implementation of Mitigation Measure 3.2-4 would mitigate and offset the Project's contribution to TAC impacts and the Project would not create a new odor source. SMAQMD's CEQA Guide, CO emissions are "predominately generated in the form of mobile-source exhaust from vehicle trips.... These vehicle trips occur throughout a paved network of roads, and therefore, associated exhaust emissions of [CO] are not generated in a single location where high concentrations could be formed" (SMAQMD 2020:4-7). A CO impact is not anticipated unless an intersection experience more than 31,600 vehicles per hour. Cumulative traffic volumes at intersections near the Project would not exceed 31,600 vehicle per hour (see Appendix K). The reader is referred to Section 3.2, "Air Quality."

Impact 4-3: Contribute to Cumulative Conflicts with or Obstruction of Implementation of an Applicable Air Quality Plan

In accordance with SMAQMD guidance, the Project was evaluated qualitatively for consistency with the most recently adopted air quality plan in the region. Specifically, the Project was compared to the growth assumptions used to form the applicable air quality plan, outlined in the Sacramento Regional 8-Hour Ozone Attainment and Reasonable Further Progress Plan. The Project was determined to be consistent. Therefore, the Project's contribution to conflicts with or obstruction of an applicable air quality plan **would not be cumulatively considerable**.

Mitigation Measures

No mitigation is required.

Impact 4-4: Contribute to Cumulative Construction Air Pollutant or Precursor Emissions

SMAQMD's thresholds of significance apply at the project level and are cumulative in nature; that is, they identify the level of project-generated emissions above which impacts would be cumulatively considerable. Thus, they represent the level at which emissions of a given project would impede the air basin from achieving ambient air quality standards, considering anticipated growth and associated emissions in the region.

Sacramento County and the Sacramento Valley Air Basin are in nonattainment for ozone and respirable particulate matter (PM₁₀) with respect to the California ambient air quality standards (CAAQS) and for ozone and fine particulate matter (PM_{2.5}) with respect to the national ambient air quality standards (NAAQS). Construction activities in the region would emit additional particulate matter and ozone precursors that may conflict with attainment efforts in the county. Because the region is in nonattainment, the existing cumulative condition is adverse, and any additional emissions would exacerbate that condition. However, SMAQMD has established construction emission thresholds for development projects that determine whether that particular project's emissions would be cumulatively considerable. As detailed in Section 3.2, "Air Quality," Project construction emissions of oxides of nitrogen (NO_x) may exceed the applicable mass emission threshold established by SMAQMD. Mitigation Measure 3.2-2a requires the incorporation of construction emission control practices that would reduce emissions. Although this mitigation measure would reduce NO_x emissions, the level of NO_x emissions would still exceed the applicable threshold. With the addition of Mitigation Measure 3.3-2b, the Project would be required to pay a mitigation fee into SMAQMD's off-site mitigation program. With payment of the appropriate off-site mitigation fee, construction-generated emissions of NO_x would be reduced to a less-than-significant level, and Project contributions to cumulative construction air quality impacts would be offset. All other criteria air pollutants would remain below the SMAQMD thresholds. Therefore, the Project's construction-related contribution to criteria air pollutant or precursor emissions **would not be cumulatively considerable**.

Mitigation Measures

No mitigation is required.

Impact 4-5: Contribute to Cumulative Long-Term Operational Criteria Air Pollutant or Precursor Emissions

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

PM₁₀ and PM_{2.5} have similar regional cumulative impacts when particulates are entrained in the air and build to unhealthy concentrations over time. Operational PM₁₀ and PM_{2.5} are less likely to result in local cumulative impacts because operational sources of PM₁₀ and PM_{2.5} tend to be spread throughout the region (i.e., vehicles traveling on roads), not concentrating at one receptor.

SMAQMD has established operational emission criteria thresholds for individual projects beyond which a particular project's emissions would be cumulatively considerable. A project that operates below the threshold levels is generally considered not to contribute to a cumulatively significant air quality impact, and those that operate above the thresholds would contribute to a cumulative impact.

As noted above, the Project is consistent with applicable local air quality plans designed to reduce regional emissions. Nonetheless, overall emissions associated with the Project would increase over existing conditions. The analysis included in Impact 3.2-3 shows that operation of the Project would result in the generation of additional ROG, NO_x, and PM₁₀, which are criteria air pollutants and precursors that form the basis for the region's nonattainment status and the existing adverse cumulative condition in the air basin. Implementation of Mitigation Measures 3.2-3a, 3.2-3b,

and 3.2-3c would reduce the Project's ROG, NO_x, PM₁₀, and PM_{2.5} emissions from area, energy, and mobile sources, and although the Project would not conflict with the policies and strategies included in the *Sacramento Regional 8-Hour Ozone Attainment and Reasonable Further Progress Plan* or the *2015 Triennial Progress Report (2017 SIP Revisions)* to address attainment of the NAAQS and CAAQS for ozone, respectively, the Project still would exceed SMAQMD's project-level operational emissions threshold. Therefore, the Project's contribution to a net increase in long-term operational criteria air pollutant and precursor emissions that form the basis for the region's nonattainment status **would be cumulatively considerable and significant and unavoidable**.

Mitigation Measures

Although Mitigation Measures 3.2-3a, 3.2-3b, and 3.2-3c would reduce operational emissions to the extent feasible, long-term emissions would not be fully offset. Project operations may contribute to the nonattainment status of the Sacramento Valley Air Basin with respect to the NAAQS and CAAQS. This impact **would be cumulatively considerable and significant and unavoidable**.

Biological Resources

The geographic context for cumulative impacts related to biological resources is the greater Project vicinity, including adjacent migration and movement corridors in the area. The Project site is surrounded by urban and residential development and is bordered by the Stone Lakes National Wildlife Refuge. The overall trend of urban and suburban development in the area has been ongoing for the past 10–15 years, and conversion of undeveloped and agricultural land will continue throughout the region within the vicinity of the Project. Development in the vicinity of the Project can be placed into two categories: (1) commercial and residential development and (2) roadway construction and widening. Several projects will include conversion of agricultural land, while others involve development on land that has been previously developed (see Table 4-2). Past development in the region, including conversion of natural land to suburban uses, has resulted in a substantial loss of native habitat. The overall effect of this land conversion on special-status plants and wildlife and on sensitive habitat has been decidedly negative. Therefore, the cumulative condition for special-status species and sensitive habitats in the vicinity of the Project is already adverse.

The City General Plan EIR identified cumulative biological resource impacts from buildout of the City and planning area as cumulatively considerable and significant and unavoidable (City of Elk Grove 2019).

As discussed in Section 3.3, "Biological Resources," implementing the Project would not result in impacts on special-status plants, sensitive natural communities or riparian habitat, or State-protected or federally protected wetlands and therefore would not combine to create considerable changes to and cumulative effects on biological resources. Therefore, impacts on special-status plants, sensitive natural communities or riparian habitat, and State-protected or federally protected wetlands are not discussed further.

Impact 4-6: Contribute to Cumulative Impacts on Biological Resources

Project construction activities (e.g., demolition, operation of vehicles and equipment, presence of construction crews) may produce levels of noise, nighttime lighting, and novel visual stimulus that may result in disturbance to wildlife species in the vicinity of the Project site. Construction of the related projects presented in Table 4-2 would result in similar conditions during construction activities, and impacts on special-status wildlife species in the vicinity of those projects would be the same as or similar to those described in Section 3.3, "Biological Resources," of this EIR.

As described in Section 3.3, Project construction may result in impacts on Swainson's hawk, white-tailed kite, burrowing owl, and other nesting birds. Implementation of Mitigation Measures 3.1-3, 3.3-1a, 3.3-1b, 3.3-2b, 3.3-2c, 3.3-2d, and 3.3-2e would offset Project impacts under cumulative conditions through preconstruction protection measures (surveys and avoidance of identified species) and modifications in the hospital building design and helicopter operations. Therefore, the Project's contribution to substantial effects on special-status wildlife or habitat **would not be cumulatively considerable**.

Mitigation Measures

No mitigation is required.

Cultural and Tribal Cultural Resources

The cumulative context for the cultural resources analysis considers a broad regional system of which the resources are a part. The geographic context for cumulative impacts related to historical resources is the City of Elk Grove and surrounding Sacramento Valley region, where common patterns of historic-era settlement have occurred over roughly the past two centuries. The geographic context for cumulative archaeological resources, human remains, and tribal cultural resources is the former territory of the Nisenan and Plains Miwok (also Mi-wuk).

Because all significant cultural resources are unique and nonrenewable members of finite classes, meaning there are a limited number of significant cultural resources, all adverse effects erode a dwindling resource base. The loss of any one archaeological site may affect the scientific value of others in a region because these resources are best understood in the context of the entirety of the cultural system of which they are a part. The cultural system is represented archaeologically by the total inventory of all sites and other cultural remains in the region. As a result, a meaningful approach to preserving and managing cultural resources must focus on the likely distribution of cultural resources, rather than on a single project or parcel boundary.

Proper planning and appropriate mitigation can help to capture and preserve knowledge of such resources and can provide opportunities for increasing our understanding of the past environmental conditions and cultures by recording data about sites discovered and preserving artifacts found. Federal, State, and local laws are also in place that protect these resources in most instances. Even so, it is not always feasible to protect these resources, particularly when preservation in place would make projects infeasible, and for this reason the cumulative effects of past and present projects in the City of Elk Grove and greater Sacramento region may result in a potentially significant cumulative impact on cultural resources.

The City General Plan EIR identified cumulative cultural resource impacts from buildout of the City and planning area as less than cumulatively considerable through the implementation of adopted mitigation measures (City of Elk Grove 2019).

As discussed in Section 3.4, "Cultural and Tribal Cultural Resources," implementing the Project would not result in impacts on the built -environment historical resources and therefore would not combine to create considerable changes in and cumulative effects on the built-environment historical resources. Therefore, impacts related to the built-environment historical resources are not discussed further.

Impact 4-7: Contribute to Cumulative Impacts on Archaeological Resources, Tribal Cultural Resources, and Human Remains

Although there are various laws and regulations directed at the protection of archaeological and tribal cultural resources, as well as human remains, these resources have been, and will continue to be, damaged or destroyed over time. With implementation of Mitigation Measures 3.4-1a, 3.4-1b, 3.4-2a, 3.4-2b, and 3.4-3, the Project's contribution to cumulative archaeological and tribal cultural resources would be offset through the identification and protection of discovered resources. Thus, the Project's contribution to substantial effects related to archaeological and tribal cultural resources, including human remains, **would not be cumulatively considerable**.

Mitigation Measures

No mitigation is required.

Energy

The geographic area considered for cumulative impacts related to energy use includes the Sacramento Municipal Utility District (SMUD) and Pacific Gas and Electric Company (PG&E) service areas. SMUD and PG&E employ various programs and mechanisms to support the provision of electricity and natural gas services to new development and recoup costs of new infrastructure. Connection fees are typically charged through standard billing for services.

Several other currently planned and approved projects identified in Table 4-2 would also receive electricity service from SMUD and natural gas service from PG&E. These projects would also consume energy related to transportation

(i.e., gasoline and diesel consumption for passenger vehicles, trucks, buses, and other vehicles) and construction. These projects would be required to implement energy efficiency measures in accordance with the California Energy Code to reduce energy demand from buildings and would likely implement transportation demand management considerations to reduce vehicle trips and miles traveled, which would reduce fuel consumption. There is no evidence to suggest that implementation of development would result in a significant cumulative energy impact related to the wasteful or inefficient use of energy.

The City General Plan EIR identified less than cumulatively considerable energy impacts from buildout of the City and planning area (City of Elk Grove 2019).

Impact 4-8: Contribute to Cumulative Energy Impacts

Impact 3.5-1 concludes that the Project would not result in the wasteful or inefficient use of energy and that transportation-related fuel consumption would be 30 percent less than for a comparable project through Implementation of Mitigation Measure 3.5-1a would require the Project to obtain LEED Gold certification, Mitigation Measure 3.5-1b would require the Project to achieve at least 15-percent greater transportation efficiency than comparable projects in the City (30 percent reduction in trips), and Mitigation Measure 3.5-1c would require Project compliance with California Energy Code Tier 1 standards. Because implementing the Project would not result in the wasteful or inefficient use of energy, the Project's contribution to cumulative energy use **would not be cumulatively considerable**.

Mitigation Measures

No mitigation is required.

Geology and Soils

The impacts related to geology and soils are not cumulative in nature. For example, impacts related to seismic shaking, erosion and loss of topsoil, and expansive soils relate only to project structures or the individual project site. However, paleontological resources can be thought of as areawide resources, and their loss at multiple sites may result in a cumulative impact. The geographic setting for cumulative effects on paleontological resources is the flood terraces of the Sacramento River and its tributaries within the Riverbank and Modesto geologic formations. These formations consist of older quaternary alluvium and have produced significant paleontological finds. Although excavation and development have occurred across this formation, paleontological resources have been protected and preserved when found, and no existing adverse cumulative condition exists.

The City General Plan EIR identified cumulative paleontological resource impacts from buildout of the City and planning area as less than cumulatively considerable through the implementation of adopted mitigation measures (City of Elk Grove 2019).

Impact 4-9: Contribute to Cumulative Disturbance to or Loss of Paleontological Resources

Implementation of the Project in combination with other projects would result in construction and ground disturbance. Some projects may include excavation of previously undisturbed sediments that may contain unique paleontological resources. As discussed in Impact 3.6-4, implementing the Project would include excavation beyond the depth of existing disturbance at the site and may enter undisturbed Riverbank Formation geology (excavations for infrastructure and building basements). Mitigation Measure 3.6-4 would require paleontological monitoring for deep excavations, which would ensure that excavations are completed in a manner that preserves potential paleontological resources and would offset the Project's contribution to cumulative paleontological resources. Thus, the Project's contribution to substantial effects related to disturbance to or loss of unique paleontological resources, sites, or unique geologic features **would not be cumulatively considerable**.

Mitigation Measures

No mitigation is required.

Greenhouse Gas Emissions and Climate Change

Climate change is a global problem. Greenhouse gases (GHGs) are global pollutants, unlike criteria air pollutants and toxic air contaminants, which are pollutants of regional and local concern. Whereas most pollutants with localized air quality effects have relatively short atmospheric lifetimes (approximately 1 day), GHGs have long atmospheric lifetimes (1 year to several thousand years). GHGs persist in the atmosphere long enough to be dispersed around the globe. Although the lifetime of any GHG molecule depends on multiple variables and cannot be determined with any certainty, it is understood that more carbon dioxide (CO₂) is emitted into the atmosphere than is sequestered by ocean uptake, vegetation, and other forms of sequestration. Of the total annual human-caused CO₂ emissions, approximately 55 percent are estimated to be sequestered through ocean and land uptake every year, averaged over the last 50 years, whereas the remaining 45 percent of human-caused CO₂ emissions remain stored in the atmosphere (IPCC 2013:467).

No single project alone would measurably contribute to an incremental change in the global average temperature or to global or local climates or microclimates. From the standpoint of CEQA, GHG impacts relative to global climate change are inherently cumulative.

The City General Plan EIR identified cumulative GHG impacts from buildout of the City and planning area as cumulatively considerable and significant and unavoidable by 2050 (City of Elk Grove 2019).

Impact 4-10: Contribute to Cumulative Impacts Related to Greenhouse Gas Emissions and Climate Change

As described in Section 3.7, "Greenhouse Gas Emissions and Climate Change," the discussion of GHG emissions associated with the Project for Impacts 3.7-1 and 3.7-2 is inherently a cumulative impact analysis. GHG emissions from one project cannot, on their own, result in changes in climatic conditions; therefore, the emissions from one project must be considered in the context of their contribution to cumulative global emissions. Implementation of Mitigation Measures 3.7-1a and 3.7-1b would ensure that the Project offsets its increase in GHG emissions, which would not conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing GHG emissions. Therefore, the Project's contribution to substantial effects related to GHG emissions **would not be cumulatively considerable**.

Mitigation Measures

No mitigation is required.

Hazards and Hazardous Materials

In the cumulative condition, development of the City may result in increased use of potentially hazardous materials. Facilities that use hazardous materials would be required to obtain permits and comply with appropriate regulatory agency standards designed to avoid hazardous waste releases. The storage, use, disposal, and transport of hazardous materials are extensively regulated by various federal, State, and local agencies; therefore, construction companies and businesses that would handle any hazardous substances would be required by law to implement and comply with these hazardous materials regulations. Development of the City would increase the extent of population that would need to be accommodated for emergency response and evacuation.

The City General Plan EIR identified less than cumulatively considerable hazard and wildland fire impacts from buildout of the City and planning area (City of Elk Grove 2019).

As discussed in Section 3.8, "Hazards and Hazardous Materials," implementing the Project would have no impact on existing or proposed schools associated with the handling or emission of hazardous materials; no potential to create a significant hazard to the public or the environment from known contamination on or near the Project site; no impact associated with exposing future employees to potential safety hazards or excessive noise generated by established aviation uses in the area; and no potential to increase wildland fire on or near the Project site. Therefore,

implementation of the Project would not combine with other related projects to create cumulative impact under these impact areas.

Impact 4-11: Contribute to Cumulative Impacts Related to Creation of a Hazard through the Routine Transport, Use, or Disposal of Hazardous Materials, Including Reasonably Foreseeable Upset or Accidents during Construction and Operation

As described in Impacts 3.8-1 and 3.8-2, construction and operation of the Project would result in an increase in hazardous materials used, stored, and transported in the area. However, these activities are subject to local, State, and federal regulations that would offset potential impacts through containment, storage, and disposal standards designed to protect public health and environment. Thus, the Project's contribution to substantial effects related to hazardous materials **would not be cumulatively considerable**.

Mitigation Measures

No mitigation is required.

Impact 4-12: Contribute to Cumulative Impacts Related to Impairment of or Physical Interference with an Adopted Emergency Response or Emergency Evacuation Plan.

As described in Impact 3.8-3, the Project site would be designed to permit access by emergency service providers during operation without impairing evacuation or emergency response. The proximity of the Project site to I-5 would facilitate patient evacuation if required. Therefore, the Project's contribution to potential cumulative impacts related to emergency response and emergency evacuation plans **would not be cumulatively considerable**.

Mitigation Measures

No mitigation is required.

Hydrology and Water Quality

The geographic context for hydrology and water quality effects is the South Stone Lake–Snodgrass Slough watershed for surface waters and the central South American Subbasin for groundwaters.

Like many watersheds in California's Central Valley, the South Stone Lake–Snodgrass Slough watershed has been heavily modified by agricultural and urban development (USFWS 2007). Natural floodplains were confined by levees to allow agricultural development of rich floodplain soils, and urban development followed behind. Contaminants such as heavy metals and pesticides have been found in the waters of North and South Stone Lakes (USFWS 2007). In addition, the South Stone Lake–Snodgrass Slough watershed is a tributary watershed to the Sacramento River and the Sacramento–San Joaquin Delta (Delta), which have been adversely affected by historic mining discharges and ongoing discharges from agricultural, industrial, and urban uses. Water quality protections first put into place in the 1990s have been effective at reducing pollutants in the Delta and its tributaries; however, the water quality of Delta waterways and the Sacramento River remains impaired, resulting in an existing cumulative adverse condition related to surface water quality.

Groundwater quality in the central South American Subbasin is generally good (SCWA 2016); however, a portion of the northeastern side of the subbasin has been contaminated with industrial pollutants. Intensive groundwater pumping and remediation are conducted at the spill sites to prevent contaminated groundwater from spreading and mixing with the general aquifer. Intensive groundwater extraction over the past 60 years has resulted in a lowering of groundwater elevations centered near Elk Grove. Groundwater elevations in the subbasin have been monitored and extraction limited since the Water Forum Agreement in 2000. Although groundwater elevations have recovered to some extent, the problem persists, resulting in an existing cumulative adverse condition related to groundwater elevations.

The City General Plan EIR identified less than cumulatively considerable water quality and flooding impacts from buildout of the City and planning area (City of Elk Grove 2019). However, the General Plan EIR identified a

cumulatively considerable and significant and unavoidable impact on groundwater resources from future water supply demands that may result in impacts on surface water features (City of Elk Grove 2019).

Impact 4-13: Contribute to Cumulative Water Quality Impacts

Implementing the Project and other development projects would result in construction and ground disturbance that would increase the potential for soil erosion and sediment pollution of waterways. The equipment required for construction would use fuel, solvents, lubricants, and other potentially hazardous materials that may degrade surface water and groundwater quality through accidental spills. However, the Project and other foreseeable development would also be required to comply with Central Valley Regional Water Quality Control Board (Central Valley RWQCB) National Pollutant Discharge Elimination System (NPDES) permit conditions that include preparation of a stormwater pollution prevention plan and a hazardous materials spill response plan. Improvement plans provided to the City prior to authorization for each construction phase would be required to conform to provisions of Municipal Code Chapter 16.44 (Land Grading and Erosion Control) and Chapter 15.12 (Drainage Control) that are in effect at the time of submittal and that include water quality control measures, such as the use of filter fences, fiber rolls, erosion control blankets, mulch, temporary drainage swales, settling basins, and fuel spill containment features. This would offset the Project's construction-related contribution to cumulative water quality impacts. Thus, the Project's contribution to cumulative construction water quality impacts would not be cumulatively considerable.

Continued urban development creates the potential for accidental discharge of household or commercial products, improper use of pesticides, and runoff carrying oil and roadway residue. The Project and other regional development projects would create new urban areas and may increase the potential for contaminated urban runoff to reach surface waters and groundwaters, degrading water quality and affecting beneficial uses. The Central Valley RWQCB works to protect water quality from urban runoff through NPDES programs for municipal stormwater and industrial uses.

The Project and the cumulative projects would be required to meet the conditions of the Sacramento Region Stormwater Quality Design Manual, which implements the Central Valley RWQCB municipal NPDES permits. These permit conditions apply to projects within the Cities of Elk Grove and Sacramento, as well as projects permitted by Sacramento County. Low-impact development (LID) design measures have been well studied by governmental and research institutions and, when properly implemented, can substantially reduce water quality degradation when compared with conventional stormwater management systems. Examples of minimum LID measures include isolation requirements for fueling areas and waste disposal areas, disconnection of impervious surfaces to allow infiltration of runoff on-site, identification signs and marking on storm drains to discourage improper use, and stormwater filtration and treatment where applicable. Each development project would be required to demonstrate compliance with LID measures as a condition of permit approval. In addition, the Project would exceed the City's stormwater requirements through infiltration of the 95th percentile storm on-site. Implementation of Mitigation Measure 3.9-6 would require that generator fuel storage be protected by dry floodproofing and all other fuel and chemical storage be elevated outside of the 200-year floodplain to avoid water quality impacts during flood events. The reader is referred to Section 3.9, "Hydrology and Water Quality," for further details on water quality controls.

Thus, the Project's contribution to cumulative water quality impairments from urban runoff **would not be cumulatively considerable**.

Mitigation Measures

No mitigation is required.

Impact 4-14: Contribute to Cumulative Impacts Related to Drainage and Flooding

As discussed in Impact 3.9-4, implementing the Project would result in a reduction in total impervious surfaces at the site, which would reduce the volume of stormwater runoff generated. Project LID features would reduce peak stormwater flows below existing flow conditions at all off-site drainage connection points (1- to 14-cubic-feet-per-second reductions from existing flow conditions).

As addressed in Impact 3.9-5, the CNU Medical Drainage Study (Wood Rodgers 2020) modeling results established that the Project's potential changes in the 200-year floodplain elevation would be negligible.

Therefore, the Project's contribution to cumulative increases in drainage flows and flooding **would not be cumulatively considerable**.

Mitigation Measures

No mitigation is required.

Impact 4-15: Contribute to Cumulative Groundwater Impacts

Increased groundwater extraction to support new development may deplete groundwater resources. The Project and the cumulative development projects listed in Table 4-2 would increase the demand for potable water in the Sacramento County Water Agency (SCWA) and Elk Grove Water District service areas. The cumulative development projects are consistent with the City General Plan (City of Elk Grove 2018). In the 2015 Urban Water Management Plan, SCWA projects that demand for potable water within its service area would increase by more than 53,251 acre-feet per year by 2040 (SCWA 2016). The majority of this increase (approximately 48,515 acre-feet per year) would occur within the Laguna Vineyard, Mather Sunrise, and Zone 40 service areas, which coincides with the Project area and the service area for the cumulative projects. SCWA indicates that it intends to meet the proposed increase in demand exclusively through increased groundwater extraction (surface water and other supplies are held constant) (SCWA 2016). SCWA is currently working to expand its groundwater production capacity to meet anticipated demand.

In contrast to the cumulative development projects described above, the South County Ag Program is a cumulative water management project that would distribute municipal recycled water to replace up to 50,000 acre-feet per year of groundwater extraction for agriculture (Regional San 2020). The combination of reduced groundwater extraction and groundwater recharge is expected to raise groundwater levels within the central South American Subbasin by 20–30 feet. This program is currently in environmental review but, if implemented, may help balance the projected increase in groundwater extraction for urban development. Water deliveries under the program are expected to start in 2024 (Regional San 2020).

Implementing the Project and the cumulative development projects listed in Table 4-2 would result in increased extraction of groundwater, which may further deplete groundwater resources. The Project may result in additional water demands and associated groundwater impacts beyond what was considered in the City General Plan EIR because it would increase the amount of water demand beyond existing Project site conditions. The increase in overall groundwater demand would be balanced in part by the reduction in pumping anticipated through the South County Ag Program. Overall, the implementation of the cumulative projects described above would result in a net increase in groundwater extraction. As discussed in Section 3.9, "Hydrology and Water Quality," the California Department of Water Resources (DWR) has not approved a groundwater sustainability plan for the South American Subbasin because, among other deficiencies, DWR was unable to verify that the groundwater yield thresholds established by SCWA would prevent adverse effects on groundwater (DWR 2019). The Sacramento Central Groundwater Authority is now preparing a Groundwater Sustainability Plan for submittal to DWR by January 31, 2022. Under current conditions, no safe pumping yield has yet been established for the South American Subbasin, and existing groundwater extraction levels may be contributing to adverse conditions (DWR 2019). These adverse conditions may include reductions in surface water flows and associated aquatic and biological resources for the Sacramento River, Cosumnes River, and other surface water features that obtain flows from alteration of surface water and groundwater interaction. Until a safe yield has been established, any large increase in groundwater extraction may be considered an adverse effect. Thus, the Project's contribution to cumulative groundwater impacts **would be cumulatively considerable and significant and unavoidable**.

Mitigation Measures

The Project has incorporated a thorough water use efficiency and conservation strategy, including compliance with the City water conservation strategy to reduce the water demands of the Project. Landscape irrigation would also comply with the Chapter 14.10 (Water Efficient Landscape Requirements) of the City Municipal Code. In addition, the Project would be constructed with recycled water infrastructure ("purple pipe") throughout the site to facilitate future

connection to recycled water supplies when these become available. No further mitigation is possible to reduce the water demand of the Project while meeting Project objectives. Therefore, the Project's contribution to substantial effects related to groundwater depletion and recharge **would be cumulatively considerable and significant and unavoidable**.

Land Use and Planning

The geographic context for cumulative impacts related to land use consists of the City and immediate Project vicinity. The cumulative projects listed in Table 4-2 would contribute to further development within the City, in many cases intensifying urban development through infill.

The City General Plan EIR identified no cumulatively considerable land use impacts from buildout of the City and planning area (City of Elk Grove 2019).

The Project would not physically divide the existing community, because it would be located on the western edge of the City within an existing developed site. Therefore, the Project would not combine to create considerable changes to and cumulative effects on the cohesiveness of the existing community. This impact is not discussed further.

Impact 4-16: Contribute to Cumulative Impacts Related to Conflicts with a Land Use Plan, Policy, or Regulation Adopted for the Purpose of Avoiding or Mitigating an Environmental Effect

As described under Impact 3.10-2, the Project would be consistent with City General Plan policies and Municipal Code requirements, which provide environmental mitigation with the application of mitigation measures identified in Sections 3.1 through 3.15 of this EIR.

The Sacramento Area Council of Governments' (SACOG's) recently adopted 2020 Metropolitan Transportation Plan/Sustainable Communities Strategy (MTP/SCS) also includes the Project area in the Established Community type (SACOG 2019). The 2020 MTP/SCS forecasts about 6,290 new housing units and 8,500 new employees in the Established Community type in the City. SACOG has determined that the Project is consistent with the land use, density, intensity, and related policies of the MTP/SCS.

Therefore, the Project's land use plan and regulation conflicts **would not be cumulatively considerable**.

Mitigation Measures

No mitigation is required.

Noise and Vibration

The geographic context for cumulative impacts related to noise is the local Project vicinity. The City General Plan EIR identified traffic noise impacts from buildout of the City and planning area as cumulatively considerable and significant and unavoidable (City of Elk Grove 2019).

As discussed in Section 3.11, "Noise and Vibration," implementing the Project would not result in the exposure of people to excessive noise levels associated with airport activity; adverse vibration effects on off-site receptors, buildings, or infrastructure; new noise sources associated with fire drills; or an increase in vehicle noise or new stationary noise sources. Therefore, the Project would not combine to create considerable changes and cumulative impacts related to these issues, and these impacts are not discussed further.

Impact 4-17: Contribute to Cumulative Construction Noise Impacts

Cumulative impacts from construction-generated noise may result if other future planned construction activities were to take place close to the Project site and cumulatively combine with construction noise from the Project. The Elk Grove Independent Senior Housing Project (5.1 acres and 142 units) is proposed east of the Project site at the southeast corner of Elk Grove Boulevard and West Taron Drive (Figure 4-1). As discussed in Impact 3.11-1, Project construction activities would involve the use of heavy-duty construction equipment occurring over an approximately 10-year period and may combine with construction of the Elk Grove Independent Senior Housing Project to

simultaneously affect the same residential receptors near the south corner of West Taron Drive and Riparian Drive. Project construction noise impacts were determined to be significant and unavoidable, even with implementation of Mitigation Measure 3.11-1 (construction noise controls), as discussed in Impact 3.11-1. This impact **would be cumulatively considerable and significant and unavoidable**.

Mitigation Measures

Implementation of Mitigation Measure 3.11-1 would ensure that noise exposure from on-site construction at off-site noise-sensitive receptors would be minimized. However, City noise standards may still be exceeded because construction of the Project and the Elk Grove Independent Senior Housing Project would occur close to the same noise-sensitive receptors. Mitigation Measure 3.11-1 would assist in decreasing exposure to the construction-generated noise contributions of the Project, but it is not expected to fully offset Project construction noise contributions to cumulative noise impacts. Therefore, this impact **would be cumulatively considerable and significant and unavoidable**.

Impact 4-18: Contribute to Cumulative Stationary Noise Impacts

Cumulative impacts related to on-site operational and stationary noise sources are site-specific, dissipate with distance from the source, and typically result in cumulative impacts only when Project-generated noise is located close to other off-site noise sources. Existing development close to the Project site does not include substantial noise sources that affect nearby sensitive receptors, and future projects would not be located close enough to the Project site for on-site operational and stationary noise to combine with other off-site noise sources to create substantial levels of noise that would affect nearby sensitive receptors. Additionally, as discussed in Impact 3.11-2, implementing Mitigation Measures 3.11-2a, 3.11-2b, and 3.11-2c would reduce noise levels from on-site operational noise sources. Therefore, noise impacts associated with on-site operational activities, including amphitheater event noise, as discussed in Impacts 3.11-2 and 3.11-3 **would not be cumulatively considerable**.

Mitigation Measures

No mitigation is required.

Impact 4-19: Contribute to Cumulative Noise Impacts from Ambulance Sirens and Helicopter Events

As explained under Impact 3.11-4, the Project design would enable ambulances to access the Project site without traveling along West Taron Avenue, thereby minimizing noise levels at residences located along the east side of West Taron Avenue, which is also the area most likely to be adversely affected by helicopter landings and takeoffs at the hospital. Also, as explained in the Helicopter Noise Report and discussed under Impact 3.11-5, the Project proposes to minimize helicopter flights over and near residential areas, and where flights must take place near residential areas, the flight paths would be positioned over I-5 to minimize the perceived noise exposure (SM&W 2020:2). Nonetheless, residences along Elk Grove Boulevard would be exposed to single-event noise exposure levels (SENELs) that exceed the 65-decibel (dB) threshold. However, noise generated by emergency response activity is exempt from the City's noise standards, and other projects near the Project site are not anticipated to harbor unique activities that generate SENELs. For these reasons, sleep disturbance events (i.e., awakenings) caused by Project-related ambulance siren noise events and Project-related helicopter noise events would not combine with SENELs from other past, present, and reasonably foreseeable projects to cause a significant cumulative impact. Therefore, the Project's contribution to noise impacts from ambulance sirens and helicopter events **would not be cumulatively considerable**.

Mitigation Measures

No mitigation is required.

Impact 4-20: Contribute to Cumulative Traffic Noise Impacts

Table 4-3 summarizes traffic noise levels along roadway segments serving the Project site under existing and cumulative conditions and the associated incremental increases.

Table 4-3 Summary of Modeled Traffic Noise Levels

Roadway Segment	L _{dn} at Nearest Residential Land Use (Exterior, dB) ¹				Applicable Incremental Noise Standard (dB)	Incremental Increase from Existing Conditions (dB)		Incremental Increase from Cumulative-No-Project Conditions (dB)	
	Existing Conditions	Cumulative -No-Project Conditions	Cumulative-Plus-Phase-1-Buildout	Cumulative -Plus-Full Buildout		Cumulative -Plus-Phase-1-Buildout	Cumulative -Plus-Full Buildout	Cumulative -Plus-Phase-1-Buildout	Cumulative -Plus-Full Buildout
Interstate 5 from Hood Franklin Road to Elk Grove Boulevard	66.3	68.0	68.0	68.0	1.5	1.7	1.7	0	0
Interstate 5 from Elk Grove Boulevard to Laguna Boulevard	67.0	68.6	68.7	68.8	1.5	1.6	1.7	0.1	0.2
Elk Grove Boulevard from Interstate 5 to West Taron Drive/Harbour Point Drive	59.5	60.8	61.0	61.4	5	1.5	1.9	0.2	0.6
Elk Grove Boulevard from West Taron Drive/Harbour Point Drive to Franklin Boulevard	61.5	62.3	62.7	63.2	3	1.2	1.7	0.4	0.9
Elk Grove Boulevard from Franklin Boulevard to Bruceville Road	62.2	63.0	63.3	63.6	3	1.1	1.4	0.3	0.6
Harbour Point Drive from Elk Grove Boulevard to Laguna Boulevard	63.7	65.0	65.0	65.1	3	1.3	1.4	0	0.1
West Taron Drive from Riparian Drive to Elk Grove Boulevard ²	63.4	64.7	67.0	69.4	NA ²	3.6	6.0	2.3	4.7
West Taron Drive from Ruddy Duck Way to Riparian Drive	54.4	54.4	54.6	54.7	5	0.1	0.3	0.2	0.3
Riparian Drive from West Taron Drive to Waterfowl Drive	49.8	51.1	52.1	53.1	5	2.3	3.3	1.0	2.0
Franklin Boulevard from Elk Grove Boulevard to Laguna Boulevard	59.8	61.7	61.8	62.0	5	2.0	2.2	0.1	0.3
Franklin Boulevard from Laguna Boulevard to Whitelock Parkway	56.4	58.3	58.5	58.7	5	2.0	2.3	0.2	0.4

Notes: dB = decibel; L_{dn} = day-night average sound level.

¹ Noise levels account for attenuation provided by existing structures that would block the line of sight between the modeled roadway segment and nearest residential land uses.

² Modeled traffic noise levels 50 feet from edge of the segment on West Taron Drive from Riparian Drive to Elk Grove Boulevard are presented for disclosure purposes only. Traffic noise levels along this roadway segment are not subject to any of the incremental noise increase standards established by General Plan Policy N-2-2 because, under existing conditions, there are no residential land uses along this roadway segment. This parcel, however, is zoned medium density residential, which allows for the future development of multi-family residential units. If multi-family

residential units are developed on this parcel then, pursuant to General Plan Policies N-1 and N-2, the design of this development should comply with the exterior and interior noise standards in Table 3.11-3 (i.e., 60 dB L_{dn} at outdoor activity areas and an interior noise standard of 40 dB L_{dn}). Design measures to comply with these noise standards may include, but are not limited to, including a sound barrier along the road, setting back outdoor activity areas from the road, placing buildings between the road and outdoor activity areas to act as a noise barrier, and/or including more noise insulation to protect interior noise levels.

Refer to Appendix I for all traffic noise modeling input data and output results.

Source: Noise levels modeled by Ascent Environmental in 2020

As shown in Table 4-3, under Cumulative-Plus-Phase-1-Buildout conditions and Cumulative-Plus-Full-Buildout conditions, the Project's contribution to Cumulative-Plus-Full-Buildout conditions (cumulative base conditions) would be less than 1.5 dB under both Cumulative-Plus-Phase-1-Buildout conditions and Cumulative-Plus-Full-Buildout conditions. General Plan Policy N-2-2 establishes an incremental noise increase threshold of 1.5 dB L_{dn} (day-night average sound level) because base noise levels exceed 65 dB L_{dn} . Noise level changes below 1.5 dB would not be perceptible as identified in Section 3.11, "Noise and Vibration." Therefore, the Project's contribution to this cumulative impact **would not be cumulatively considerable**.

Mitigation Measures

No mitigation is required.

Population, Employment, and Housing

The geographic context for cumulative impacts related to population, employment, and housing is confined to the City. As discussed above, assuming future annexation and development of the study areas, buildout under the 2019 General Plan would result in a maximum of 102,865 dwelling units, 332,254 residents, and 122,155 jobs. The City is actively striving to increase employment opportunities to improve the balance of housing to employment opportunities within the City.

As discussed in Section 3.12, "Population, Employment, and Housing," implementing the Project would involve redevelopment of an existing commercial site and would not displace people or housing and thus would not necessitate the construction of replacement housing elsewhere. Therefore, the Project would not combine to create considerable changes and cumulative effects related to the construction of replacement housing. This impact is not discussed further.

Impact 4-21: Contribute to Cumulative Inducement of Unplanned Growth

As described in Impact 3.12-1, the Project would result in a net increase of approximately 3,843 CNU jobs. The nature of some of the employment opportunities would change from service and industrial jobs to opportunities for high-paid, highly skilled physicians and nurses. It is assumed that the employment opportunities at the existing business establishments would be either incorporated into the Project or relocated elsewhere in the City. Therefore, the Project may increase the employment opportunities in the City. This is consistent with General Plan Policy ED-2-5: Support the creation and retention of jobs that provide sustainable wages and benefits. The direct addition of 3,843 jobs would represent approximately 3 percent of the 122,155 jobs anticipated with buildout of the General Plan and would not be expected to exceed the City's development capacity. SACOG's recently adopted 2020 MTP/SCS also includes the Project area in the Established Community type. The 2020 MTP/SCS forecasts about 6,290 new housing units and 8,500 new employees in the Established Community Type in the City. In comparison to the 2020 MTP/SCS, the Project would account for approximately 2 percent of total new housing units and approximately 47 percent of total new employees in the Established Community Type in Elk Grove by 2040. Hospitals and medical centers are generally considered public and office uses in SACOG's forecast; therefore, the Project is consistent with the land use assumptions for the Established Community Type in the 2016 MTP/SCS. SACOG has determined that the Project is consistent with the land use, density, intensity, and related policies of the MTP/SCS (Appendix C). Thus, the Project's impacts related to inducement of substantial unplanned population growth **would not be cumulatively considerable**.

Mitigation Measures

No mitigation is required.

Public Services

The geographic context for cumulative impacts related to public services includes the Cosumnes Community Services District (CSD) Fire Department and Elk Grove Police Department (EGPD) service areas, including the City.

Implementation of previously approved, proposed, or reasonably foreseeable projects in the service areas of the Cosumnes CSD Fire Department and EGPD would result in increased demand for fire protection, emergency medical response, and police protection services. The increase in demand would result in the need for additional facilities, and these impacts would be cumulatively considerable. However, development projects are subject to property taxes and development impact fees. These fees, as well as other funding sources, allow for the expansion of the Cosumnes CSD Fire Department and EGPD staff, equipment, and facilities to accommodate future demand. In addition, each development project will be subject to CEQA review of project-level impacts, as well as applicable regulations to reduce impacts.

The City General Plan EIR identified less than cumulatively considerable public service impacts from buildout of the City and planning area (City of Elk Grove 2019).

As discussed in Section 3.13, "Public Services," implementing the Project would not affect public schools such that construction or expansion of educational facilities would be required, would not affect libraries and other public facilities such that additional libraries or public facilities would be needed or constructed, and would not substantially increase the use of or physically affect existing parks and recreational facilities such that construction of new parks and recreational facilities would be required. Therefore, the Project would not combine to create considerable changes and cumulative effects related to educational, library, parks, recreational, or other public facilities. These impacts are not discussed further.

Impact 4-22: Contribute to Cumulative Impacts on Fire Protection and Emergency Medical Response Facilities

As described under Impact 3.13-1, implementation of the Project would result in increased demand for fire protection and emergency medical response services from the Cosumnes CSD Fire Department. The Project would offset its service impacts through the provision of an additional aerial ladder truck. The Project Applicant would be required to pay all development impact fees, including the City's fire fees. Such fees would be used to fund necessary equipment improvements. The Project would also be subject to property taxes and assessment that would support expansion of the Cosumnes CSD Fire Department to provide the necessary services. Thus, the Project's impacts related to expansion of fire protection and emergency medical response facilities **would not be cumulatively considerable**.

Mitigation Measures

No mitigation is required.

Impact 4-23: Contribute to Cumulative Impacts on Police Protection Facilities

As described under Impact 3.13-2, implementation of the Project would result in increased demand for police protection services from EGPD. The Project Applicant has signed an agreement for consideration of the City Council to fund on-site law enforcement services to address the estimated increase in police service demand and offset the Project's impact. The Project Applicant shall provide on-site facilities for law enforcement officers assigned to the Project. Thus, the Project's impacts related to expansion of police protection facilities **would not be cumulatively considerable**.

Mitigation Measures

No mitigation is required.

Transportation

The geographic context for cumulative impacts related to transportation is the City and the planning area. While the City General Plan EIR identified no cumulatively considerable impacts related to transit, bicycle, pedestrian, and traffic safety, vehicle miles travel impacts from buildout of the City and planning area were identified cumulatively considerable and significant and unavoidable because the effectiveness of VMT reductions strategies is not certain. In addition, disruptive changes occurring in transportation, such as transportation network companies (i.e., Uber, Lyft), autonomous vehicles, Mobility as a Service (i.e., ride-sharing, carsharing), Amazon (increased deliveries), may increase VMT (City of Elk Grove 2019:3.15-60).

Impact 4-24: Contribute to Cumulative Impacts on Vehicle Miles Traveled

The discussion of vehicle miles traveled (VMT) impacts associated with the Project for Impact 3.14-2 is inherently a cumulative impact analysis as it compares the Project to City General Plan VMT standards associated with buildout of the City. As detailed under Impact 3.14-2, implementation of the Project would not result in the Project-generated VMT per service population threshold for the Employment Center land use designation (i.e., 47.1 VMT) or the total daily VMT threshold within the City Limits (i.e., 6,367,833 VMT) that was established as part of the City General Plan adoption being exceeded. Therefore, the Project's contribution to substantial effects related to VMT **would not be cumulatively considerable**.

Mitigation Measures

No mitigation is required.

Impact 4-25: Contribute to Cumulative Impacts on Transit, Bicycle, and Pedestrian Facilities

As described under Impact 3.14-3, implementation of the proposed Project would not create demand for public transit services above the crush load capacity of the transit system and would not disrupt existing or planned transit facilities and services. Additionally, as described under Impact 3.14-4 and Impact 3.14-5, implementation of the proposed Project would not disrupt any existing or planned bicycle or pedestrian facilities, add trips to an existing bicycle or pedestrian transportation facility or service that does not meet current design standards, or degrade the bicycle or pedestrian Streetscore level of traffic stress. Thus, the Project's impacts related to transit, bicycle, and pedestrian facilities would not create a cumulative impact and **would not be cumulatively considerable**.

Mitigation Measures

No mitigation is required.

Impact 4-26: Contribute to Cumulative Construction-Related Transportation Impacts

Cumulative impacts from Project-generated construction effects on transportation may result if other future planned construction activities were to take place close to the Project site and cumulatively combine to exacerbate the construction-related transportation impacts of the Project. The Elk Grove Independent Senior Housing Project (5.1 acres and 142 units) is proposed east of the Project site at the southeast corner of Elk Grove Boulevard and West Taron Drive (Figure 4-1). As discussed in Impact 3.14-8, Project construction activities would occur adjacent to and within the public roadway right-of-way; thus, it would likely require temporary lane closures and may result in unexpected slowing of vehicular traffic if not properly planned and managed. Additionally, the hauling of heavy machinery (e.g., bulldozers, excavators) and operation of large trucks associated with construction-related activities may necessitate travel along roadways not designated as truck routes and may potentially cause damage to the roadbed. Therefore, if construction of the Project were to occur simultaneously with the Elk Grove Independent Senior Housing Project, the construction-related transportation impacts of the two projects may combine to exacerbate construction-related transportation impacts from the Project and create a significant cumulative impact.

Implementation of Mitigation Measure 3.14-8 would require that a temporary traffic control plan be completed and implemented to the satisfaction of the City and/or be consistent with industry standards. Under the plan, Project construction-related transportation impacts would be offset through the management of construction activities in a

manner that would retain partial roadway access and/or schedule construction outside of the a.m. and p.m. peak traffic conditions, allow emergency vehicle access, delineates construction zones in a manner that protects vehicles, bicyclists, and pedestrians, and repairs damage to the roadway. Therefore, with the implementation of Mitigation Measure 3.14-8, the Project's contribution to cumulative construction-related transportation impacts **would not be cumulatively considerable**.

Mitigation Measures

No mitigation is required.

Utilities and Service Systems

The geographic context for cumulative impacts related to utilities and service systems includes the local service areas of SCWA, the Sacramento Regional County Sanitation District (Regional San), and the Sacramento Area Sewer District, as well as the service areas for landfills that serve the City, SMUD, and PG&E.

The City General Plan EIR identified less than cumulatively considerable solid waste impacts from buildout of the City and planning area (City of Elk Grove 2019). However, the General Plan EIR identified a cumulatively considerable and significant and unavoidable impact on water supply and wastewater service (City of Elk Grove 2019).

As discussed in Section 3.15, "Utilities and Service Systems," implementing the Project would not require expansion of existing or construction of new facilities to accommodate additional telecommunications equipment. Therefore, the Project would not combine to create considerable changes and cumulative effects related to telecommunications facilities. This impact is not discussed further.

Impact 4-27: Contribute to Cumulative Water Supply Impacts

As described in Section 3.15, "Utilities and Service Systems," SCWA provides retail water supply to the City, and the Project is located within SCWA's Zone 40 South Service Area potable water service area. The Project and the cumulative development projects listed in Table 4-2 would increase the demand for potable water in the SCWA service area.

SCWA prepared a Water Supply Assessment (SCWA 2019) for the Project in accordance with Water Code Sections 10910–10915. It demonstrates that SCWA's water supplies are sufficient to satisfy the water demands of the currently proposed Project while still meeting the current and projected water demands of existing customers in the next 20 years. However, under buildout of the Elk Grove General Plan, increased demand may exceed supplies for treated water, which may result in significant cumulative impacts.

As described in Impact 4-15, the Project may result in additional water demands beyond what was considered in the City General Plan EIR because it would increase the amount of water demand beyond existing Project site conditions. As discussed in Section 3.9., "Hydrology and Water Quality," DWR has not approved a groundwater sustainability plan for the South American Subbasin because, among other deficiencies, DWR was unable to verify that the groundwater yield thresholds established by SCWA would prevent adverse effects on groundwater (DWR 2019). The Sacramento Central Groundwater Authority is now preparing a Groundwater Sustainability Plan for submittal to DWR by January 31, 2022. Under current conditions, no safe pumping yield has yet been established for the South American Subbasin, and existing groundwater extraction levels may be contributing to adverse conditions (DWR 2019). These adverse conditions may include reductions in surface water flows and associated aquatic and biological resources for the Sacramento River, Cosumnes River, and other surface water features that obtain flows from alteration of surface water and groundwater interaction. Until a safe yield has been established, any large increase in groundwater extraction may be considered an adverse effect. Thus, the Project's contribution to cumulative water supply impacts **would be cumulatively considerable and significant and unavoidable**.

Mitigation Measures

The Project has incorporated a thorough water use efficiency and conservation strategy, including compliance with the City water conservation strategy to reduce the water demands of the Project. Landscape irrigation would also

comply with the Chapter 14.10 (Water Efficient Landscape Requirements) of the City Municipal Code. In addition, the Project would be constructed with recycled water infrastructure ("purple pipe") throughout the site to facilitate future connection to recycled water supplies when these become available. No further mitigation is possible to reduce the water demand of the Project while meeting Project objectives. Therefore, the Project's contribution to water supply impacts **would be cumulatively considerable and significant and unavoidable**.

Impact 4-28: Contribute to Cumulative Impacts on Wastewater Services

Wastewater flows to the Sacramento Regional Wastewater Treatment Plant (SRWTP) in 2014 were approximately 141 million gallons per day (mgd), compared to the current permitted capacity of 181 mgd. It is not anticipated that Regional San will need to consider further improvements to the SRWTP until after 2050 (Regional San 2014). The proposed Project's wastewater generation would increase over existing site conditions and current zoning. The Elk Grove General Plan buildout would require treatment at the SRWTP, increasing demand beyond that assumed for the plant (City of Elk Grove 2018:5.12-32). Therefore, the Project's contribution to impacts related to wastewater treatment capacity **would be cumulatively considerable and significant and unavoidable**.

Mitigation Measures

There is no feasible mitigation available to the Project that may offset its increase in wastewater demands. Therefore, the Project's contribution to wastewater impacts **would be cumulatively considerable and significant and unavoidable**.

Impact 4-29: Contribute to Cumulative Solid Waste Impacts

Implementation of the Project would include uses that would increase the generation of solid waste, including municipal solid waste, medical waste, and radioactive waste. Laws and regulations regulating the management of hazardous materials and hazardous wastes are described in Impact 3.15-3, and Municipal Code Section 30.70.030(E) requires that all projects recycle or divert at least 65 percent of the material collected at the construction site, not including excavated soil and land clearing debris. Excavated soil and land clearing debris are required to be 100 percent recycled under Section 30.70.030(E). The remainder would be disposed of in a local landfill. Projected solid waste generation associated with the Project would be 9,812 tons per year. The Project Applicant would prepare a waste management plan, as required for generators of hospital medical infectious waste.

At General Plan buildout, it is estimated that the City planning area may generate approximately 331,223 additional tons of solid waste each year. However, the City exceeds the mandated 50-percent diversion rate established under the Integrated Waste Management Act, so the amount of material reaching the landfills would be less than that amount, likely as low as 241,733 tons per year. As shown in Table 3.15-6, there is substantial remaining capacity in the landfills serving local waste haulers, with an average remaining capacity of more than 70 percent. Therefore, the proposed Project would be served by solid waste management companies and landfills with sufficient capacity to serve the future development. Therefore, the Project's contribution to impacts related to the availability of solid waste generation and disposal capacity **would not be cumulatively considerable**.

Mitigation Measures

No mitigation is required.

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5 ALTERNATIVES

5.1 INTRODUCTION

CCR Section 15126.6(a) (State CEQA Guidelines) requires EIRs to describe:

a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives. An EIR need not consider every conceivable alternative to a project. Rather, it must consider a range of potentially feasible alternatives that will avoid or substantially lessen the significant adverse impacts of a project, and foster informed decision making and public participation. An EIR is not required to consider alternatives that are infeasible. There is no ironclad rule governing the nature or scope of the alternatives to be discussed other than the rule of reason.

This section of the State CEQA Guidelines also provides guidance regarding what the alternatives analysis should consider. Subsection (b) further states the purpose of the alternatives analysis is as follows:

Because an EIR must identify ways to mitigate or avoid the significant effects that a project may have on the environment (Public Resources Code Section 21002.1), the discussion of alternatives shall focus on alternatives to the project or its location which are capable of avoiding or substantially lessening any significant effects of the project, even if these alternatives would impede to some degree the attainment of the project objectives, or would be more costly.

The State CEQA Guidelines require that the EIR include sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison with the proposed project. If an alternative would cause one or more significant effects in addition to those that would be caused by the project as proposed, the significant effects of the alternative must be discussed, but in less detail than the significant effects of the project as proposed (CCR Section 15126.6[d]).

The State CEQA Guidelines further require that the “no project” alternative be considered (CCR Section 15126.6[e]). The purpose of describing and analyzing a no project alternative is to allow decision makers to compare the impacts of approving a proposed project with the impacts of not approving the proposed project. If the no project alternative is the environmentally superior alternative, CEQA requires that the EIR “shall also identify an environmentally superior alternative among the other alternatives” (CCR Section 15126[e][2]).

In defining “feasibility” (e.g., “feasibly attain most of the basic objectives of the project”), CCR Section 15126.6(f)(1) states, in part:

Among the factors that may be taken into account when addressing the feasibility of alternatives are site suitability, economic viability, availability of infrastructure, general plan consistency, other plans or regulatory limitations, jurisdictional boundaries (projects with a regionally significant impact should consider the regional context), and whether the proponent can reasonably acquire, control or otherwise have access to the alternative site (or the site is already owned by the proponent). No one of these factors establishes a fixed limit on the scope of reasonable alternatives.

In determining what alternatives should be considered in the EIR, it is important to consider the objectives of the project, the project’s significant effects, and unique project considerations. These factors are crucial to the development of alternatives that meet the criteria specified in Section 15126.6(a). Although, as noted above, EIRs must contain a discussion of “potentially feasible” alternatives, the ultimate determination as to whether an alternative is feasible or infeasible is made by the lead agency’s decision-making body—here, the City of Elk Grove. (See PRC Sections 21081.5, 21081[a] [3].)

5.2 CONSIDERATIONS FOR SELECTION OF ALTERNATIVES

5.2.1 Attainment of Project Objectives

As described above, one factor that must be considered in selection of alternatives is the ability of a specific alternative to attain most of the basic objectives of the Project (CCR Section 15126.6[a]). Chapter 2, "Project Description," articulates the following Project objectives:

- ▶ develop a hospital close to the California Northstate University School of Medicine campus to provide training opportunities for its students,
- ▶ offer health care for patients in southwestern Sacramento County,
- ▶ offer emergency access to medical services along the I-5 corridor, and
- ▶ Develop a hospital of sufficient size with complete clinical services and the capability to provide highly specialized care as required for a designation as a teaching hospital.

5.2.2 Environmental Impacts of the California Northstate University Medical Center Campus Project

Sections 3.1 through 3.15 and Chapter 4 of this Draft EIR address the environmental impacts of implementation of the proposed Project. Potentially feasible alternatives were developed with consideration of avoiding or lessening the significant, and potentially significant, adverse impacts of the Project, as identified in Chapters 3 and 4 of this Draft EIR and summarized below. If an environmental issue area analyzed in this Draft EIR is not addressed below, it is because no significant impacts were identified for that issue area.

AESTHETICS

- ▶ Construction and operation of the Project—in particular, the mass and height of the Project buildings—would degrade the visual character of the Project site, as viewed from public views. No feasible mitigation is available to address this impact. Therefore, the impact would be **significant and unavoidable** under Project and cumulative conditions (see Impacts 3.1-1 and 4-1).
- ▶ The Project would create new sources of nighttime lighting and potential new sources of daytime glare. Mitigation (Mitigation Measure 3.1-2) has been identified to reduce the extent of this impact. However, implementing the mitigation measure would not completely offset this impact. Therefore, the impact would be **significant and unavoidable** under Project and cumulative conditions (see Impacts 3.1-3 and 4-2).

AIR QUALITY

- ▶ Project construction-related activities would result in emissions of reactive organic gases (ROG), nitrogen oxides (NO_x), respirable particulate matter (PM₁₀), and fine particulate matter (PM_{2.5}) from site preparation, use of off-road equipment, material and equipment delivery trips, worker commute trips, building construction, and other miscellaneous activities. These emissions would exceed the Sacramento Metropolitan Air Quality Management District's (SMAQMD's) thresholds. Mitigation (Mitigation Measures 3.2-2a and 3.2-2b) has been identified to reduce this impact to **less than significant** under Project and cumulative conditions (see Impacts 3.2-2 and 4-3).
- ▶ Operation of the Project would generate emissions of ROG and NO_x, which are precursors to ozone, and PM₁₀ and PM_{2.5}. ROG, NO_x, and PM₁₀ emissions would exceed the applicable mass emission thresholds adopted by SMAQMD. Mitigation (Mitigation Measures 3.2-3a, 3.2-3b, and 3.2-3c) has been identified to reduce the extent of this impact. However, implementing the mitigation measures would not completely offset this impact.

Therefore, the impact would be **significant and unavoidable** under Project and cumulative conditions (see Impacts 3.2-3 and 4-5).

- ▶ Project operations could result in stationary sources of toxic air contaminants (TACs) that could expose sensitive receptors to a level of cancer risk greater than 10 in 1 million. Mitigation (Mitigation Measure 3.2-4) has been identified to reduce this impact to **less than significant** under Project conditions (see Impact 3.2-4). No cumulatively considerable impacts would occur.

BIOLOGICAL RESOURCES

- ▶ Project construction would include ground disturbance, tree removal, building demolition, and construction of new buildings, which could result in disturbance to or loss of special-status wildlife species and reduced breeding productivity of these species. Mitigation (Mitigation Measures 3.3-1a and 3.3-1b) has been identified to reduce this impact to **less than significant** under Project and cumulative conditions (see Impacts 3.3-1 and 4-6).
- ▶ Project implementation would result in construction of a new hospital building that is 261 feet in height and helicopter trips to and from the hospital. Both of these conditions would be novel to local bird populations, migratory waterbirds, and sandhill cranes using the Stone Lakes National Wildlife Refuge, and nearby nesting Swainson's hawks. Bird collisions with the new 261-foot-tall building, as well as bird strikes with helicopters operating in the vicinity of the Project site, could result in injury or mortality of special-status and common migratory birds. Mitigation (Mitigation Measures 3.3-2a, 3.3-2b, 3.3-2c, 3.3-2d, and 3.3-2e) has been identified to reduce this impact to **less than significant** under Project and cumulative conditions (see Impacts 3.3-2 and 4-6).
- ▶ Project implementation would largely include activities on a previously developed site that is not currently serving as a wildlife corridor and that does not contain native wildlife nursery sites. The Project site is, however, close to Stone Lakes National Wildlife Refuge, which is an important stopover and wintering area for migrating waterfowl, shorebirds, and greater sandhill cranes. Mitigation (Mitigation Measures 3.3-3a, 3.3-3b, 3.3-3c, and 3.3-3d) has been identified to reduce this impact to **less than significant** under Project and cumulative conditions (see Impacts 3.3-3 and 4-6).
- ▶ Project implementation would result in removal of up to 292 trees, some of which have been identified as trees of local importance under City of Elk Grove Municipal Code Chapter 19.12. Mitigation (Mitigation Measure 3.3-4) has been identified to reduce this impact to **less than significant** under Project conditions (see Impact 3.3-4). No cumulatively considerable impacts would occur.

CULTURAL AND TRIBAL CULTURAL RESOURCES

- ▶ Project-related ground-disturbing activities could result in the discovery of or damage to yet undiscovered archaeological resources as defined in State CEQA Guidelines Section 15064.5. Mitigation (Mitigation Measures 3.4-1a and 3.4-1b) has been identified to reduce this impact to **less than significant** under Project and cumulative conditions (see Impacts 3.4-1 and 4-7).
- ▶ Tribal consultation has not resulted in the identification of tribal cultural resources on the Project site. However, previously recorded tribal resource P-24-5225 was identified during the North Central Information Center records search. Additionally, excavation activities associated with Project construction could disturb or destroy previously undiscovered significant subsurface tribal cultural resources. Mitigation (Mitigation Measure 3.4-2a and 3.4-2b) has been identified to reduce this impact to **less than significant** under Project and cumulative conditions (see Impacts 3.4-2 and 4-7).
- ▶ Ground-disturbing construction activities resulting from Project implementation could disturb or destroy previously undiscovered human remains. Mitigation (Mitigation Measure 3.4-3) has been identified to reduce this impact to **less than significant** under Project and cumulative conditions (see Impacts 3.4-3 and 4-7).

ENERGY

- ▶ Construction and operation of Project features and off-site improvements would result in consumption of fuel (gasoline, diesel, and jet fuel), electricity, and natural gas. Mitigation (Mitigation Measures 3.5-1a, 3.5-1b, and 3.5-1c) has been identified to reduce this impact to **less than significant** under Project and cumulative conditions (see Impacts 3.5-1 and 4-8).

GEOLOGY AND SOILS

- ▶ Deep excavations required for Project construction and off-site infrastructure improvements could disturb or destroy unique paleontological resources. Mitigation (Mitigation Measure 3.6-4) has been identified to reduce this impact to **less than significant** under Project and cumulative conditions (see Impacts 3.6-4 and 4-9).

GREENHOUSE GAS EMISSIONS AND CLIMATE CHANGE

- ▶ Construction and operation of the Project would result in an increase in greenhouse gas (GHG) emissions. Mitigation (Mitigation Measures 3.7-1a and 3.7-1b) has been identified to reduce this impact to **less than significant** under Project and cumulative conditions (see Impacts 3.7-1 and 4-10).

HYDROLOGY AND WATER QUALITY

- ▶ The Project site is located within the 200-year floodplain and would store fuels, lubricants, and industrial chemicals that could be released during a flood event. Mitigation (Mitigation Measure 3.9-6) has been identified to reduce this impact to **less than significant** under Project and cumulative conditions (see Impacts 3.9-6 and 4-13).
- ▶ The Project and the cumulative development would increase the demand for groundwater, potentially exceeding sustainable yields under cumulative conditions. No feasible mitigation is available to offset the Project's contribution to this impact. Therefore, the impact would be **significant and unavoidable** under cumulative conditions (see Impact 4-16).

NOISE AND VIBRATION

- ▶ Project-related construction noise would expose nearby noise-sensitive receptors to elevated noise levels that would often exceed local standards. Mitigation (Mitigation Measure 3.11-1) has been identified to reduce the extent of this impact. However, implementing the mitigation measure would not completely offset this impact. Therefore, the impact would be **significant and unavoidable** under Project and cumulative conditions (see Impacts 3.11-1 and 4-17).
- ▶ The Project would involve the long-term operation of new noise sources and new noise-generating activities on the Project site that could expose off-site noise-sensitive receptors to excessive noise levels. Mitigation (Mitigation Measures 3.11-2a, 3.11-2b, and 3.11-2c) has been identified to reduce this impact to **less than significant** under Project and cumulative conditions (see Impacts 3.11-2 and 4-18).
- ▶ The Project would result in an increase in emergency ambulance trips traveling along local roadways past existing noise-sensitive residential receptors. Although noise generated by emergency response activity is exempt from the City's noise standards, noise generated by ambulance sirens would result in an increase in sleep disturbance at affected residential dwellings. No feasible mitigation is available to offset the Project's contribution to this impact. Therefore, the impact would be **significant and unavoidable** (see Impact 3.11-4). No cumulatively considerable impacts would occur.

TRANSPORTATION

- ▶ Implementation of the Project would increase the number of local vehicle trips above existing conditions. City General Plan Policy NR-4-5 and CAP Measure TACM-3 identify the need to reduce single-occupancy vehicle trips and local commute traffic. Mitigation (Mitigation Measures 3.14-1) has been identified to reduce this impact to **less than significant** under Project conditions (see Impact 3.14-1). No cumulatively considerable impacts would occur.
- ▶ The proposed hospital building and helicopter landing site could create an air navigation hazard if marking and lighting were not provided. Mitigation (Mitigation Measures 3.14-6) has been identified to reduce this impact to **less than significant** under Project conditions (see Impact 3.14-6). No cumulatively considerable impacts would occur.
- ▶ Construction of the proposed Project would occur adjacent to and within the public roadway right-of-way; thus, it would likely require temporary lane closures and could result in unexpected slowing of vehicular traffic if not properly planned and managed. Additionally, the hauling of heavy machinery (e.g., bulldozers, excavators) and operation of large trucks associated with construction activities could necessitate travel along roadways not designated as truck routes and could potentially cause damage to the roadbed. Therefore, construction of the Project could potentially result in temporary but prolonged construction transportation impacts. Mitigation (Mitigation Measures 3.14-8) has been identified to reduce this impact to **less than significant** under Project and cumulative conditions (see Impacts 3.14-8 and 4-26).

UTILITIES AND SERVICE SYSTEMS

- ▶ The Project would include the construction of off-site improvements to electrical distribution facilities and wastewater conveyance pipelines that would result in significant environmental impacts. Mitigation has been identified to reduce of this impact. However, implementing the mitigation measures would not completely offset this impact. Therefore, the impact would be **significant and unavoidable** under Project (see Impact 3.15-1).
- ▶ The Project could result in additional water demands beyond what was considered in the City General Plan EIR that may exceed groundwater sustainable yields under cumulative conditions. No feasible mitigation is available to offset the Project's contribution to this impact. Therefore, the impact would be **significant and unavoidable** under cumulative conditions (see Impact 4-27).
- ▶ The proposed Project's wastewater generation would increase over existing site conditions and current zoning. The Elk Grove General Plan buildout would require treatment at the Sacramento Regional Wastewater Treatment Plant, increasing demand beyond what was assumed for the plant under cumulative conditions. No feasible mitigation is available to offset the Project's contribution to this impact. Therefore, the impact would be **significant and unavoidable** under cumulative conditions (see Impact 4-28).

5.3 ALTERNATIVES CONSIDERED BUT NOT EVALUATED FURTHER

As described above, State CEQA Guidelines Section 15126.6(c) provides that the range of potential alternatives for the project shall include those that could feasibly accomplish most of the basic objectives of the project and could avoid or substantially lessen one or more of the significant effects. Alternatives that fail to meet the fundamental project purpose need not be addressed in detail in an EIR (*In re Bay-Delta Programmatic Environmental Impact Report Coordinated Proceedings* (2008) 43 Cal.4th 1143, 1165–1167).

In determining what alternatives should be considered in the EIR, it is important to acknowledge the objectives of the project, the project's significant effects, and unique project considerations. These factors are crucial to the development of alternatives that meet the criteria specified in Section 15126.6(a). Although, as noted above, EIRs must contain a discussion of "potentially feasible" alternatives, the ultimate determination as to whether an alternative is feasible or infeasible is made by lead agency decision maker(s). (See PRC Section 21081[a][3].) At the time of action on the Project, the decision maker(s) may consider evidence beyond that found in this EIR in addressing such

determinations. The decision maker(s), for example, may conclude that a particular alternative is infeasible (i.e., undesirable) from a policy standpoint and may reject an alternative on that basis provided that the decision maker(s) adopt a finding, supported by substantial evidence, to that effect, and provided that such a finding reflects a reasonable balancing of the relevant economic, environmental, social, and other considerations supported by substantial evidence (*City of Del Mar v. City of San Diego* [1982] 133 Cal.App.3d 401, 417; *California Native Plant Society v. City of Santa Cruz* [2009] 177 Cal.App.4th 957, 998).

The EIR should also identify any alternatives that were considered by the lead agency but were rejected during the planning or scoping process and briefly explain the reasons underlying the lead agency's determination.

The following alternative was considered by the City of Elk Grove but is not evaluated further in this Draft EIR.

5.3.1 Development Consistent with Municipal Code Height Standards

This alternative would restrict Project building heights to 60 feet, consistent with height standards for the Business and Professional Office Park (BP) zoning designation set forth in Zoning Code Chapter 23.29. This alternative would reduce the extent of significant impacts anticipated for the Project for the following environmental issue areas:

- ▶ Aesthetics: visual character and lighting impacts;
- ▶ Air Quality: construction- and operation-related air pollutant emission impacts;
- ▶ Biological Resources: bird populations and wildlife movement impacts;
- ▶ Energy: use of energy impacts;
- ▶ Greenhouse Gas Emissions and Climate Change: construction- and operation-related GHG emission impacts;
- ▶ Hydrology and Water Quality: cumulative groundwater resource impacts; and
- ▶ Utilities and Service Systems: cumulative water supply (groundwater) and wastewater impacts.

However, this alternative would result in a reduction of available patient beds within the hospital and could therefore minimize hospital functions and capacity required to adequately provide emergency and nonemergency medical services to the public. This alternative was rejected because the Project site lacks sufficient space for the hospital and supporting facilities to function under this height restriction. Hospitals in the region consist of dense campus developments with hospital building heights that range from 100 to 179 feet (e.g., Kaiser Permanente South Sacramento Medical Center, University of California, Davis, Medical Center, Sutter Medical Center, and the planned Dignity Health in the City).

The Project is anticipated to be used for the education of CNU students. Based on enrollment, the teaching hospital would need to have 350–500 beds to provide the number of cases required to make teaching viable. These hospitals also need additional space for teaching, including conference rooms on each nursing unit, extra consultation and demonstration rooms, student laboratories, and procedure rooms (Public Health Service 1961). If the hospital building were limited to 60 feet in height, only approximately 100 – 150 beds could be provided due to site constraints. Thus, this alternative was not evaluated further.

5.4 ALTERNATIVES SELECTED FOR DETAILED ANALYSIS

The following alternatives are evaluated in this Draft EIR:

- ▶ **Alternative 1: No Project–No Development Alternative** assumes no demolition of the existing structure or construction of the Project. The Project site would remain in its current condition and would retain its General Plan and zoning designations.
- ▶ **Alternative 2: Reduced Development Alternative** includes a reduced hospital building height (approximately 165 feet [eight stories]) and 280 patient beds at buildout. This alternative also includes reduced parking (240 spaces) and elimination of the on-site helicopter landing site.

- **Alternative 3: Lent Ranch Marketplace Site Alternative** includes the Project's proposed uses and buildings at an alternative site in the City, located in the Lent Ranch Marketplace Special Planning Area (SPA).

Further details on these alternatives, and an evaluation of their environmental effects relative to those of the proposed Project, are provided below. For purposes of comparison with the other action alternatives, conclusions for each technical area are characterized as "impacts" that are greater, similar, or less to describe conditions that are worse than, similar to, or better than those of the proposed Project.

5.4.1 Alternative 1: No Project-No Development Alternative

Under the No Project–No Development Alternative, no actions would be taken. The Project site would remain in its current condition and would continue to have the General Plan designation of Community Commercial (CC) and Light Industrial (Figure 2-3) and be zoned General Commercial (GC) and Industrial-Office Park (MP) (Figure 2-4). The Project site would retain the nine structures encompassing 282,246 square feet (sq. ft.) of building space that includes the 109,800 sq. ft., two-story School of Medicine building, the 76,000 sq. ft. office building, and seven additional one-story buildings (Figure 2-1). The site currently consists of the existing CNU Medical College and Pharmacy College, an office building (ALLDATA), a brewery, an animal hospital, several eating establishments, and other commercial and retail uses. The vacant 0.5-acre lot on the southwest corner of West Taron Court could be developed in the future consistent with its current MP zoning. The No Project–No Development Alternative would not meet the Project objectives. However, as required by CEQA (Section 15126.6[e]), the No Project–No Development Alternative is evaluated in this Draft EIR.

AESTHETICS

Under this alternative, there would be no alteration of the visual character and quality of the Project site. Views of the Project site from surrounding vantage points would not change, and no new sources of light and glare would be created, as would occur with the proposed Project. Project-related significant and unavoidable visual character and lighting impacts would not occur. Thus, impacts under the No Project–No Development Alternative would be less than those that would occur with the Project. (*Less, no new impact*)

AIR QUALITY

Because the No Project–No Development Alternative would involve no construction disturbance and no new vehicular trip generation, this alternative would not generate construction- or operation-related air emissions and TACs. By comparison, implementing the Project would result in less-than-significant construction-related emissions (with mitigation). However, implementing the Project also would result in significant and unavoidable impacts related to operation-related emissions. Therefore, implementation of the No Project–No Development Alternative would avoid the significant and unavoidable impact associated with operation-related emissions, and impacts would be less than those that would occur with the Project. (*Less, no new impact*)

BIOLOGICAL RESOURCES

The No Project–No Development Alternative would not result in any new ground disturbance on the Project site or in the off-site improvement areas. This would avoid Project-related significant but mitigatable impacts related to nesting birds and raptors, as well as potential disturbance to bird populations and associated wildlife movement in the Stone Lakes Wildlife National Refuge. Overall, impacts under this alternative would be less than those that would occur with the Project. (*Less, no new impact*)

CULTURAL AND TRIBAL CULTURAL RESOURCES

The No Project–No Development Alternative would not involve any earthmoving activities, thereby avoiding impacts related to the disturbance, destruction, or alteration of any known or as-yet-undiscovered/unrecorded archaeological resources, tribal cultural resources, or human remains. In comparison, implementing the proposed Project would result in ground disturbance that could cause potentially significant impacts related to disturbance of undiscovered/unrecorded subsurface archaeological resources, tribal cultural resources, and human remains. These impacts would be reduced to less-than-significant levels through implementation of mitigation measures. Because the No Project–No Development Alternative would not include any ground disturbance, it would avoid this impact. Therefore, cultural resource impacts under the No Project–No Development Alternative would be less than would occur under the Project. *(Less, no new impact)*

ENERGY

Under the No Project–No Development Alternative, no demolition or construction activities would occur. Therefore, there would be no change in energy use. The Project would increase energy use but would design new buildings to be energy efficient and provide on-site power generation through solar photovoltaic systems, and it would be required to achieve the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED) Gold certification. Thus, energy impacts under the No Project–No Development Alternative would be less than would occur under the Project. *(Less, no new impact)*

GEOLOGY AND SOILS

Under this alternative, no new buildings and no Project-associated facilities would be constructed, and existing site uses would remain. No ground disturbance or earthmoving activities would occur; therefore, no impacts on previously undiscovered paleontological resources would occur. As described in Section 3.6, "Geology and Soils," Project impacts would be less than significant with the implementation of mitigation. Thus, soils, geology, and seismicity impacts would be less under the No Project–No Development Alternative than under the Project. *(Less, no new impact)*

GREENHOUSE GAS EMISSIONS AND CLIMATE CHANGE

Under the No Project–No Development Alternative, the Project site would remain in its current condition. Project construction- and new operation-related emissions of GHGs would not occur. Thus, the No Project–No Development Alternative would generate less GHG emissions in comparison to the Project. *(Less, no new impact)*

HAZARDS AND HAZARDOUS MATERIALS

No significant hazard impact would occur under the Project because it would be required to comply with federal, State, and local regulations regarding the handling of hazardous materials. Under this alternative, no new buildings or facilities associated with the Project would be constructed. The use and/or transport of hazardous materials on-site would not change from existing conditions. Thus, impacts on public health and safety related to hazardous materials or hazards would be less under the No Project–No Development Alternative than under the Project. *(Less, no new impact)*

HYDROLOGY AND WATER QUALITY

Under the No Project–No Development Alternative, there would be no potential for construction-related releases of sediment and contaminants into surface waters or groundwater, and no changes in water demand, stormwater generation, drainage patterns, or new flood risk. In comparison, the existing site is already developed, and implementation of the Project would result in less-than-significant impacts (with mitigation) related to hydrology and

water quality. However, the Project and cumulative development would increase the demand for groundwater, potentially exceeding sustainable yields. This impact would be cumulatively considerable and significant and unavoidable. This alternative would avoid these impacts by maintaining existing conditions and associated water supply demands. Thus, implementing the No Project–No Development Alternative would result in impacts on hydrology and water quality that would be less than those that would occur under the Project. *(Less, no new impact)*

LAND USE AND PLANNING

The Project would not result in any significant land use impacts. This alternative would not divide an established community, nor would it conflict with plans adopted for the purpose of avoiding or mitigating a significant effect. As described in Section 3.10, “Land Use and Planning,” the Project would include General Plan amendments, rezoning, and text changes to Municipal Code Section 23.42.040.D.; however, these changes would be consistent with General Plan policies and would comply with City Municipal Code requirements that address environmental effects from development. Further, the Project would also be consistent with the Sacramento Area Council of Governments’ (SACOG’s) 2020 Metropolitan Transportation Plan/Sustainable Communities Strategy (MTP/SCS). Because the No Project–No Development Alternative would not require any General Plan amendments, rezoning, or text changes to Municipal Code Section 23.42.040.D., impacts associated with this alternative would be less than would occur under the Project. *(Less, no new impact)*

NOISE AND VIBRATION

Under this alternative, no Project-related construction activities would take place, and there would be no increases in short-term construction-related noise at nearby sensitive receptors. No increase in Project traffic noise and ambulance noise, as well as new noise sources and new noise-generating activities, would occur. This alternative would avoid Project-related significant and unavoidable noise impacts associated with construction noise and ambulance noise. Thus, noise impacts under the No Project–No Development Alternative would be less than those that would occur under the Project. *(Less, no new impact)*

POPULATION, EMPLOYMENT, AND HOUSING

The Project would not result in any significant population, employment, or housing impacts. The No Project–No Development Alternative would not generate any new jobs within the City. As described in Section 3.12, “Population, Employment, and Housing,” dormitories proposed as part of the Project would be classified as noninstitutional group quarters by the federal government, and students would generally not be included in the population counts conducted by the census. Overall, impacts under this alternative would be less than those that would occur with the Project because no employment associated with construction and operation of the Project would occur. *(Less, no new impact)*

PUBLIC SERVICES

The Project would not result in any significant public service impacts that would involve the construction of new facilities, but would require as part of the construction to provide office space for on-site police officers. It would include the approval of an agreement with the City Council for dedicated police officers at the site to address anticipated increases in service calls. Thus, the No Project–No Development Alternative would result in less of an impact than the proposed Project with regard to public services. *(Less, no new impact)*

TRANSPORTATION

Implementing the No Project–No Development Alternative would not result in an increase in vehicular or multimodal trips. Therefore, it would not result in a change in trips or vehicle miles traveled (VMT) greater than existing conditions, or an increase in the demand for transit, bicycle, or pedestrian services and facilities. Additionally, the No

Project–No Development Alternative would not result in any change to the existing transportation network; thus, it would not result in impacts on transportation or air navigation hazards, safety, or emergency access or conflict with transportation plans, guidelines, policies, or standards. Therefore, implementing the No Project–No Development Alternative would not result in any new transportation-related impacts and would avoid significant impacts. The No Project–No Development Alternative would result in less of an impact than would the Project. *(Less, no new impact)*

UTILITIES AND SERVICE SYSTEMS

The Project would result in significant environmental impacts associated with off-site infrastructure impacts and cumulatively considerable and significant and unavoidable impacts on water supply (groundwater) and wastewater service beyond what was evaluated in the City General Plan EIR. The No Project–No Development Alternative would not result in any new demand for water, wastewater treatment, stormwater conveyance, electricity, or natural gas, nor would it result in the need for new infrastructure. Thus, the No Project–No Development Alternative would avoid significant impacts. The No Project–No Development Alternative would result in less of an impact than would the Project. *(Less, no new impact)*

5.4.2 Alternative 2: Reduced Development Alternative

Under the Reduced Development Alternative (Alternative 2), the height of the hospital building would be reduced to approximately 165 feet (eight stories) and would consist of 280 patient beds at buildout (Project proposes 400 beds). This would reduce the City required parking by 240 spaces associated with the hospital building. The on-site helicopter landing site would be eliminated from the Project, and helicopter service would be provided at Franklin Field airport, located at 12480 Bruceville Road, approximately 7 miles southeast of the Project site. All other proposed Project features, facilities, and off-site improvements would remain the same under this alternative. Under this alternative, the reduced hospital building height and removal of the helicopter landing site are intended to reduce local visual character and biological resource impacts associated with the Project.

AESTHETICS

As noted above, the Project would result in significant and unavoidable visual character impacts from building height and massing (i.e., hospital building) and lighting impacts from new light sources associated with the 261-foot hospital building (exterior and interior lighting). Under this alternative, the height of the proposed hospital building would be reduced to 165 feet (96-foot reduction compared to the Project), and no helicopter landing site would be included at the Project site. Construction activities under this alternative would be reduced as compared to those under the Project and would alter the visual character of the Project site (e.g., use of a crane to construct the hospital building). The Reduced Development Alternative would also result in visual character impacts at buildout from building massing and height in relation to Project area development conditions. However, the reduction of the hospital building height and mass would lessen the extent of this impact as compared to the Project. This alternative would also introduce new lighting from the site and the buildings (i.e., interior and exterior hospital building lighting), especially at night, which could adversely affect nearby residents. However, the reduction of the hospital building height and the removal of the lighting of the helicopter landing site would lessen this impact as compared to the Project. Thus, the Reduced Development Alternative would result in less of an impact than the Project with regard to aesthetic impacts. *(Less, would reduce but not avoid a significant and unavoidable impact due to the hospital building height and massing conflict with the visual character of the Project area)*

AIR QUALITY

Similar to the Project, the Reduced Development Alternative would include demolition and construction activities, which would generate construction-related air emissions and TACs that would be mitigated to a less-than-significant level through the application of Project mitigation measures. In addition, this alternative's reduction in the number of employees and patients in the hospital building would reduce operation-related air emissions. Because the Reduced

Development Alternative would reduce operation-related air emissions relative to the Project, it would result in less severe air quality impacts compared to the Project. *(Less, would reduce but not avoid a significant and unavoidable impact because the reduction of the size of the hospital building is not anticipated to provide a 66 percent reduction in ozone precursor emissions to avoid this significant impact (see Table 3.2-9))*

BIOLOGICAL RESOURCES

The Reduced Development Alternative would result in the same level of ground disturbance as the Project and therefore, like the Project, could affect nesting birds and raptors. However, the reduced hospital building height and elimination of the on-site helicopter landing site would reduce impacts associated with injury to or mortality of special-status and common migratory birds and wildlife movement in the Stone Lakes National Wildlife Refuge. This impact was identified as significant but mitigatable for the Project. Thus, impacts under this alternative would be less than those that would occur under the Project. *(Less)*

CULTURAL AND TRIBAL CULTURAL RESOURCES

The Reduced Development Alternative would involve earthmoving activities similar to those of the Project, which could result in the disturbance, destruction, or alteration of known or as-yet-undiscovered/unrecorded archaeological resources, tribal cultural resources, or human remains. Although the Reduced Development Alternative would include a reduced building height, the Project footprint would remain the same as under the Project and therefore would not avoid potential impacts associated with archaeological or tribal cultural resources. Therefore, the impacts under the Reduced Development Alternative would be similar to those under the Project. *(Similar)*

ENERGY

Under the Reduced Development Alternative, demolition and construction activities would occur at the Project site, and energy would be temporarily used for construction activities. New Project buildings and facilities would incorporate energy efficiency features consistent with the Project's LEED Gold certification. As with the Project, implementing the Reduced Development Alternative would not result in the long-term wasteful, inefficient, and unnecessary consumption of energy, because identified mitigation would be applied. However, this alternative's energy demands would be less than those of the Project because of the reduced size of the hospital building. Therefore, energy impacts under the Reduced Development Alternative would be less than those under the Project. *(Less)*

GEOLOGY AND SOILS

Construction activities for the Reduced Development Alternative would be similar to those described for the Project (same development footprint and basement construction), including ground-disturbing and earthmoving activities, which could result in damage to and/or destruction of previously undiscovered paleontological resources. As described in Section 3.6, "Geology and Soils," impacts would be less than significant with the implementation of mitigation. Thus, geology and soils impacts under the Reduced Development Alternative would be similar to those that would occur under the Project. *(Similar)*

GREENHOUSE GAS EMISSIONS AND CLIMATE CHANGE

Under the Reduced Development Alternative, the extent of site development would be reduced; therefore, less operation-related GHG emissions would be generated than under the Project. Construction emissions for this alternative and the Project are anticipated to be similar because the site would have the same development footprint. Thus, GHG operation-related emission impacts under the Reduced Development Alternative would be less than under the Project. *(Less)*

HAZARDS AND HAZARDOUS MATERIALS

No significant hazard impacts would occur under the Project because it would be required to comply with federal, State, and local regulations regarding the handling of hazardous materials. As with the Project, the use and handling of hazardous materials under this alternative would be consistent with federal, State, and local regulations, which would minimize the potential for upset or accident conditions or exposure to nearby receptors. Thus, impacts on public health and safety related to hazardous materials or hazards under the Reduced Development Alternative would be similar to those under the Project. *(Similar)*

HYDROLOGY AND WATER QUALITY

The Reduced Development Alternative would include the same footprint construction as the Project. Therefore, there is potential for construction-related releases of sediment and contaminants into surface waters or groundwater, as well as stormwater generation, changes in drainage patterns, and/or flood risk. Implementation of the Project would result in less-than-significant impacts (with mitigation) related to hydrology and water quality. However, the Project and cumulative development would increase the demand for groundwater, potentially exceeding sustainable yields. This impact would be cumulatively considerable and significant and unavoidable. The reduced size of the hospital building under this alternative would reduce the extent of water demand and impacts on groundwater resources as compared to the Project. Thus, cumulative groundwater impacts under the Reduced Development Alternative would be less than under the Project. *(Less, but the impact would remain cumulatively considerable and significant and unavoidable as this alternative would still increase water demands beyond current site land uses)*

LAND USE AND PLANNING

The Project would not result in any significant land use impacts. This alternative also would not result in significant land use impacts (division of an established community or conflict with plans adopted for the purpose of avoiding or mitigating a significant effect). As with the Project, the Reduced Development Alternative would include General Plan amendments, rezoning, and text changes to Municipal Code Section 23.42.040.D, and it would be consistent with General Plan policies and would comply with City Municipal Code requirements that address environmental effects from development. Further, the Project and the Reduced Development Alternative would also be consistent with the SACOG 2020 MTP/SCS. Land use and planning impacts associated with this alternative would be similar to those under the Project. *(Similar)*

NOISE AND VIBRATION

Under this alternative, construction activities similar to those that would occur under the Project would take place, and there would be increases in short-term construction-related noise at nearby sensitive receptors. As with the Project, this alternative also would include traffic and ambulance noise, as well as new noise sources and new noise-generating activities. Significant and unavoidable noise impacts associated with construction noise and ambulance noise, which would occur under the Project, also would occur under this alternative. The Reduced Development Alternative would eliminate the helicopter noise, but Project-related helicopter noise was not identified as a significant impact. Thus, this alternative would result in significant and unavoidable noise impacts similar to those that would occur under the Project. *(Similar)*

POPULATION, EMPLOYMENT, AND HOUSING

The Project would not result in any significant population, employment, or housing impacts. The Reduced Development Alternative would include a reduced hospital building size, which may translate to a decrease in the number of staff employed at the hospital. Further, the extent of construction under this alternative would be similar to that of the Project; therefore, the Project and this alternative would have a similar construction workforce. Overall, impacts under this alternative would be similar to those that would occur under the Project. *(Similar)*

PUBLIC SERVICES

The Project would not result in any significant public service impacts that would involve the construction of new facilities, but would require as part of the construction to provide office space for on-site police officers. It would include the approval of an agreement with the City Council for dedicated police officers at the site to address anticipated increases in service calls. The extent of service need under the Reduced Development Alternative would be similar to that under the Project but would also not result in any significant public service impacts. Thus, public service impacts under the Reduced Development Alternative would be similar to those under the Project. (*Similar*)

TRANSPORTATION

The Project would not result in any significant transportation impacts on VMT or transit, bicycle, or pedestrian facilities. Additionally, the Project would provide adequate emergency access. However, potentially significant impacts related to conflicting with City circulation system programs and policies that require reductions in local commute trips, air navigation hazards related to hospital building height and the helicopter landing site, and temporary construction impacts would occur with implementation of the Project. The Reduced Development Alternative would generate less vehicle trips as compared to the Project. The temporary construction impacts associated with the Reduced Development Alternative would be similar to those of the Project. Air navigation hazards impacts would be less under the Reduced Development Alternative because the hospital building height would be reduced 96 feet as compared to the Project and no on-site helicopter landing site would be provided. Thus, transportation impacts under the Reduced Development Alternative would be less than under the Project. (*Less*)

UTILITIES AND SERVICE SYSTEMS

The Project would result in significant environmental impacts associated with off-site infrastructure impacts and cumulatively considerable and significant and unavoidable impacts on water supply (groundwater) and wastewater service beyond what was evaluated in the City General Plan EIR. Because the size of the hospital would be reduced under the Reduced Development Alternative, water supply and wastewater demands under this alternative would be less than under the Project. Thus, cumulative impacts on utilities and service systems under the Reduced Development Alternative would be less than under the Project. (*Less, but the impact would remain cumulatively considerable and significant and unavoidable as this alternative would still increase water demands beyond current site land uses*)

5.4.3 Alternative 3: Lent Ranch Marketplace Site Alternative

Under Alternative 3, the uses and buildings proposed for the Project would be located at the southern portion of the Regional Mall (District A) on approximately 58 acres in the Lent Ranch Marketplace SPA (see Figure 5-1). The Lent Ranch Marketplace Regional Mall partial shell buildings and parking area had been partially constructed but never completed. In 2019, the mall partial shell buildings were demolished. This off-site alternative location was identified because of its proximity and access to State Route 99 and to address biological resource impacts associated with the Stone Lakes National Wildlife Refuge. Under the Lent Ranch Marketplace Site Alternative, the General Plan land use designation would be changed from Regional Commercial (RC) to Employment Center (EC), and amendments would be made to the Lent Ranch Marketplace SPA to allow hospital and medical uses in District A.



Source: Image produced and provided by Ascent Environmental in 2020

Figure 5-1 **Lent Ranch Marketplace Site (Off-Site) Alternative**

AESTHETICS

This alternative would include levels of construction activities similar to those that would occur under the Project. Therefore, this alternative would also introduce new lighting, especially at night, that could adversely affect nearby residents. Further, the area surrounding this site has minimal development (although it is planned for commercial, office, and residential uses), and construction of a new medical center and associated facilities would significantly alter the visual character and quality of the area. The SPA includes the following allowed uses: regional mall, community commercial, office and entertainment, visitor commercial, and multifamily residential. As described above, this alternative would require a General Plan amendment and amendments to the Lent Ranch Marketplace SPA to allow hospital and medical uses in District A, as well as allow an increase in building height from 100 feet to 261 feet (Lent Ranch Marketplace SPA, Section 9 [Height Restrictions]). Although the overall massing of the proposed medical center under the Lent Ranch Marketplace Alternative would be similar to what is allowed under the SPA, the proposed hospital building would be the tallest building in the City and would be a new visually prominent feature in the area and adjacent to the planned Wilton Rancheria Casino Resort (12-story and 302 room hotel). This alternative would also have lighting impacts from new light sources associated with the 261-foot hospital building (exterior and interior lighting), similar to the Project, adjacent to undeveloped lands and agricultural uses south of the site. Thus, visual impacts under the Lent Ranch Marketplace Alternative would be similar to those under the Project. (*Similar*)

AIR QUALITY

Similar to the Project, this alternative would include construction of a new 733,290 sq. ft. medical center and associated facilities, but unlike the Project, it would avoid construction emissions associated with demolition. As with the proposed Project, the Lent Ranch Marketplace Alternative would result in less-than-significant construction-related emissions with the application of Project mitigation measures. Both this alternative and the Project would result in significant and unavoidable impacts related to operation-related emissions. Because this alternative would not avoid the significant and unavoidable operation-related air quality impacts associated with the Project, the Off-Site Alternative and Project would have similar air quality impacts. (*Similar*)

BIOLOGICAL RESOURCES

The Lent Ranch Marketplace Alternative would result in the same level of ground disturbance as the Project. However, under this alternative, the Project would not be located close to the Stone Lakes National Wildlife Refuge, which is an important stopover and wintering area for migrating waterfowl, shorebirds, and greater sandhill cranes. Therefore, this alternative would avoid impacts associated with migratory wildlife corridors and the Stone Lakes National Wildlife Refuge. Similar to the Project, this alternative could still affect birds and raptors through collisions with the new 261-foot-tall building and bird strikes with helicopters using the Project site. This impact was identified as significant but mitigable for the Project. Because issues associated with the Stone Lakes National Wildlife Refuge would be avoided, impacts under this alternative would be less than those that would occur under the Project. (*Less*)

CULTURAL AND TRIBAL CULTURAL RESOURCES

The Lent Ranch Marketplace Alternative would involve the same level of earthmoving activities associated with the Project, which could result in the disturbance, destruction, or alteration of known or as-yet-undiscovered/unrecorded archaeological resources, tribal cultural resources, or human remains. Because the Project footprint and level of construction (depth of excavation for basements) would remain the same as for the Project and therefore would not avoid potential impacts associated with archaeological or tribal cultural resources, impacts under this alternative would be similar to those under the Project. (*Similar*)

ENERGY

Under the Lent Ranch Marketplace Alternative, construction activities similar to those proposed for the Project (no demolition would be required) would occur at the alternative site. New Project buildings and facilities would incorporate energy efficiency features consistent with the Project's LEED Gold certification commitments. As with the Project, this alternative would not result in the long-term wasteful, inefficient, and unnecessary consumption of energy, because identified mitigation would be applied. Therefore, energy impacts under this alternative would be similar to those that would occur under the Project. *(Similar)*

GEOLOGY AND SOILS

Under this alternative, construction activities would be similar to those described for the proposed Project, including ground-disturbing and earthmoving activities, which could result in damage to and/or destruction of previously undiscovered paleontological resources. As described in Section 3.6, "Geology and Soils," impacts would be less than significant with the implementation of mitigation. Geology and soils impacts under the Lent Ranch Marketplace Alternative would be similar to those that would occur under the Project. *(Similar)*

GREENHOUSE GAS EMISSIONS AND CLIMATE CHANGE

Implementing the Lent Ranch Marketplace Alternative would generate GHG emissions during construction and operation similar to those that would be generated under the Project because the same extent of site development would occur. Thus, this alternative and the Project would generate similar GHG emissions. *(Similar)*

HAZARDS AND HAZARDOUS MATERIALS

No significant hazard impact would occur under the Project. As with the Project, the use and handling of hazardous materials under this alternative would be consistent with federal, State, and local regulations, which would minimize the potential for upset or accident conditions or exposure to nearby receptors. The use of hazardous materials under the Lent Ranch Marketplace Alternative would be the same as under the Project because the medical facilities would be the same. Thus, impacts on public health and safety related to hazardous materials or hazards under this alternative would be similar to those under the Project. *(Similar)*

HYDROLOGY AND WATER QUALITY

The Lent Ranch Marketplace Alternative would eliminate any change to 200-year floodplain conditions because the site is located outside of the 100-year and 200-year floodplains. Implementing the Project would result in less-than-significant impacts related to water quality during a flood event with the implementation of mitigation that requires fuel and chemical storage above the 200-year floodplain. This alternative would avoid this impact. Thus, the water quality and flooding impact under the Lent Ranch Marketplace Alternative would be less than under the Project. *(Less)*

Implementation of best management practices and compliance with State and local requirements under this alternative would result in runoff and water quality during storm events similar to those under the Project. However, the Project and cumulative development would increase the demand for groundwater, potentially exceeding sustainable yields. This impact would be cumulatively considerable and significant and unavoidable. This alternative and the Project would have the same water demand. This alternative and the Project would have similar cumulative groundwater impacts. *(Similar)*

LAND USE AND PLANNING

The Project would not result in any significant land use impacts. This alternative also would not result in significant land use impacts (division of an established community or conflict with plans adopted for the purpose of avoiding or mitigating a significant effect). As with the Project, the Lent Ranch Marketplace Alternative would require General Plan amendments, but this alternative would be consistent with General Plan policies and Municipal Code requirements that address environmental effects from development. Further, the Project and this alternative would also be consistent with the SACOG 2020 MTP/SCS. Impacts associated with this alternative would be similar to those of the Project. (*Similar*)

NOISE AND VIBRATION

Under this alternative, construction activities similar to those that would occur under the Project would take place, and there would be increases in short-term construction-related noise at sensitive receptors west of Promenade Parkway. As with the Project, this alternative also would include traffic and ambulance noise, as well as new noise sources. Significant and unavoidable noise impacts associated with construction noise and ambulance noise, which would occur under the Project, also may occur under this alternative because of the location of residences along Promenade Parkway, as well as along East Stockton Boulevard, West Stockton Boulevard, Whitelock Parkway, and other roadways north of the Lent Ranch Marketplace Alternative site, depending on the ambulance travel route. Thus, this alternative would result in significant and unavoidable noise impacts similar to those of the Project. (*Similar*)

POPULATION, EMPLOYMENT, AND HOUSING

The Project would not result in any significant population, employment, or housing impacts. The Lent Ranch Marketplace Alternative would consist of medical facilities the same size as those under the Project, and it would generate a similar amount of employment at buildout (4,000 jobs). Further, the extent of construction under this alternative would be similar to that of the Project; therefore, the Project and this alternative would have a similar construction workforce. Overall, impacts under this alternative would be similar to those that would occur under the Project. (*Similar*)

PUBLIC SERVICES

The Project would not result in any significant public service impacts that would involve the construction of new facilities, but would require as part of the construction to provide office space for on-site police officers. It would include the approval of an agreement with the City Council for dedicated police officers at the site to address anticipated increases in service calls. The extent of service need under the Lent Ranch Marketplace Alternative would be similar to that under the Project but would also not result in any significant public service impacts. Thus, public service impacts under this alternative would be similar to those under the Project. (*Similar*)

TRANSPORTATION

The Project would not result in any significant transportation impacts on VMT or transit, bicycle, or pedestrian facilities. Additionally, the Project would provide adequate emergency access. However, potentially significant impacts related to conflicting with City circulation system programs and policies that require reductions in local commute trips, hazards related to a design feature associated with the helicopter landing site, and temporary construction impacts would occur with implementation of the Project. The Lent Ranch Marketplace Alternative would generate a similar number of new vehicular trips as the Project. This alternative's impact on City circulation plans, policies, and standards would be similar to the Project. As it relates to VMT, similar to the Project, the Lent Ranch Marketplace Alternative project site is in a prescreened area within City limits but would require a rezone to the Employment Center General Plan land use designation. Additionally, the Lent Ranch Marketplace Alternative project site shares similar regional access characteristics to the Project, including access to State Route 99 and Grant Line Road that would function

like Interstate 5 by providing regional access. Therefore, VMT per service population and the total project-generated VMT would be similar to those of the Project. This alternative would include the 261-foot hospital building on-site helicopter landing site would have similar air navigation impacts as compared to the Project. Construction transportation impacts associated with the Lent Ranch Marketplace Alternative would be similar to those of the Project. The Lent Ranch Marketplace Alternative would not provide access to transit because transit service is absent from the area. Thus, transportation impacts under this alternative would be greater than those under the Project. (*Greater*)

UTILITIES AND SERVICE SYSTEMS

The Project would result in significant environmental impacts associated with off-site infrastructure impacts and cumulatively considerable and significant and unavoidable impacts on water supply (groundwater) and wastewater service beyond what was evaluated in the City General Plan EIR. The water supply and wastewater demands under this alternative would be similar to those under the Project because the size of the facilities would be the same. Thus, cumulative impacts on utilities and service systems under the Lent Ranch Marketplace Alternative would be similar to those under the Project. (*Similar*)

5.5 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

Because the No Project–No Development Alternative (described above in Section 5.4.1) would avoid all adverse impacts resulting from construction and operation of the CNU Medical Center Campus Project analyzed in Chapter 3, it is the environmentally superior alternative. However, the No Project–No Development Alternative would not meet the Project objectives.

When the environmentally superior alternative is the No Project Alternative, the State CEQA Guidelines (Section 15126[d][2]) require selection of an environmentally superior alternative from among the other action alternatives evaluated. As illustrated in Table 5-1, below, the Reduced Development Alternative would be the environmentally superior action alternative.

Table 5-1 Summary of Environmental Effects of the Alternatives Relative to the California Northstate University Medical Center Campus Project

Environmental Topic	Project Impacts	Alternative 1: No Project–No Development Alternative	Alternative 2: Reduced Development Alternative	Alternative 3: Lent Ranch Marketplace Site Alternative
Aesthetics	Significant and unavoidable	Less	Less	Similar
Air Quality	Significant and unavoidable (operational and cumulative impacts only)	Less	Less	Similar
Biological Resources	Less than significant (with mitigation)	Less	Less	Less
Cultural and Tribal Cultural Resources	Less than significant (with mitigation)	Less	Similar	Similar
Energy	Less than significant (with mitigation)	Less	Less	Similar
Geology and Soils	Less than significant (with mitigation)	Less	Similar	Similar
Greenhouse Gas Emissions and Climate Change	Less than significant (with mitigation)	Less	Less	Similar
Hazards and Hazardous Materials	Less than significant	Less	Similar	Similar

Environmental Topic	Project Impacts	Alternative 1: No Project– No Development Alternative	Alternative 2: Reduced Development Alternative	Alternative 3: Lent Ranch Marketplace Site Alternative
Hydrology and Water Quality	Significant and unavoidable (cumulative groundwater impacts only)	Less	Less	Less
Land Use and Planning	Less than significant	Less	Similar	Similar
Noise	Significant and unavoidable (construction, ambulance, and cumulative impacts only)	Less	Similar	Similar
Population, Employment, and Housing	Less than significant	Less	Similar	Similar
Public Services	Less than significant	Less	Similar	Similar
Transportation	Less than significant (with mitigation)	Less	Less	Greater
Utilities and Service Systems	Significant and unavoidable (off-site infrastructure improvements and cumulative water supply and wastewater impacts only)	Less	Less	Similar

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6 OTHER CEQA-MANDATED SECTIONS

6.1 GROWTH INDUCEMENT

PRC Section 21100(b)(5) specifies that the growth-inducing impacts of a project must be addressed in an EIR. Section 15126.2(d) of the State CEQA Guidelines provides the following guidance for assessing growth-inducing impacts of a project:

Discuss the ways in which the proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. Included in this are projects which would remove obstacles to population growth (a major expansion of a wastewater treatment plant might, for example, allow for more construction in service areas). Increases in the population may tax existing community service facilities, requiring construction of new facilities that could cause significant environmental effects. Also, discuss the characteristics of some projects which may encourage and facilitate other activities that could significantly affect the environment, either individually or cumulatively. It must not be assumed that growth in any area is necessarily beneficial, detrimental, or of little significance to the environment.

A project can induce growth directly, indirectly, or both. 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:

- ▶ substantial new permanent employment opportunities (e.g., commercial, industrial, or governmental enterprises);
- ▶ substantial short-term employment opportunities (e.g., construction employment) that indirectly stimulates the need for additional housing and services to support the new temporary employment demand; 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).

Growth inducement itself is not an environmental effect but may foreseeably lead to environmental effects. If substantial growth inducement occurs, it can result in secondary environmental effects, such as increased demand for housing, demand for other community and public services and infrastructure capacity, increased traffic and noise, degradation of air or water quality, degradation or loss of plant or animal habitats, conversion of agricultural and open space land to urban uses, and other effects.

6.1.1 Growth-Inducing Impacts of the Project

At buildout, the Project would employ approximately 4,000 people, resulting in approximately 3,843 more jobs compared to the number of existing jobs at the Project site, and would provide housing for 300 students. The Project includes a pharmacy and medical college, a hospital, an outpatient clinic, a medical office building, two parking structures with accessory retail, a dormitory, one student parking structure with rooftop sports facilities, a central plant and mechanical yard, public gathering spaces, and surface parking.

ELIMINATION OF OBSTACLES TO GROWTH

The elimination of either physical or regulatory obstacles to growth is considered a growth-inducing impact. A physical obstacle to growth typically involves the lack of public infrastructure. The extension of public infrastructure, including roadways, water mains, and sewer lines, into areas not currently provided with roads and utilities would be expected to support new development. Similarly, the elimination of, or a change to, a regulatory obstacle, including growth and development policies, could result in new growth.

As described in Chapter 2, "Project Description," the Project would involve off-site improvements that consist of an emergency left-turn pocket on Elk Grove Boulevard, Sacramento Municipal Utility District distribution and substation site improvements, and wastewater conveyance facilities. These improvements are designed to accommodate the operational needs of the Project and would not provide additional new capacity to accommodate new development in the Project area. The reader is referred to Section 3.5, "Energy," and Section 3.15, "Utilities and Service Systems," for a further analysis of the electrical and wastewater demands of the Project.

Because the Project site is located in the 200-year floodplain (which has a 0.5-percent chance of a flood occurring in any given year), the Project also includes the following proposed text revisions to General Plan Policy ER-2-3 to allow construction of an essential healthcare facility in the 200-year floodplain. These text changes would apply Citywide:

To the extent feasible, locate, and encourage other agencies to locate, new essential government service facilities and essential healthcare facilities outside of 100-year and 200-year flood hazard zones, except in cases where such locations would compromise facility functioning or ensure they are constructed so as to minimize damage to said facilities if located in such areas. For purposes of this section, essential public facilities include, but are not limited to, hospitals and health care facilities, emergency shelters, fire stations, emergency command centers, and emergency communications facilities.

The following revisions to the Elk Grove Municipal Code Title 23 (Zoning), Section 23.42.040.D, would also be implemented and would apply Citywide:

2. Health care facilities and government facilities shall be prohibited from being built in the F district. The City Council may approve exceptions to this if it determines that the operations of the proposed facility would be substantially compromised in an alternative location. To the extent feasible, new essential public facilities should be located outside of the F100, F200, and F100/200 areas, or should be constructed so as to minimize damage to said facilities if located in such area. For purposes of this section, essential public facilities include, but are not limited to, hospitals and health care facilities, emergency shelters, fire stations, emergency command centers, and emergency communications facilities.

Although the General Plan amendment and zoning changes would not directly relate to construction of housing units or employment centers, they could expand the land areas available in the City where new essential public facilities may be located. However, the current version of Municipal Code 23.42.040D(2) does not outright prohibit the development of essential public facilities. Modification to the Municipal Code would not allow development of new essential public facilities within the 200-year floodplain by right and would still be required to meet the following requirements under Municipal Code Section 23.42.040.E (Findings):

No development or physical changes requiring a development permit required by this title shall be allowed within the two hundred (200) year floodplain unless it has first met one (1) or more of these findings; these findings shall be made by the designated approving authority, as specified by EGMC Chapter 23.16:

1. The project has an urban level of flood protection from flood management facilities that is not reflected in the most recent map of the two hundred (200) year floodplain;
2. Conditions imposed on the project will provide for an urban level of flood protection;
3. Adequate progress has been made toward construction of a flood protection system to provide an urban level of flood protection for the project, as indicated by the Central Valley Flood Protection Board for State projects, or by the Floodplain Administrator for local projects; or
4. The project is a site improvement that would not result in the development of a new habitable structure, and would not increase risk of damage to neighboring development or alter the conveyance area of a watercourse in the case of a flood. Improvements that qualify for this exemption include, but are not limited to, the replacement or repair of a damaged or destroyed habitable structure with substantially the same building footprint area; interior repairs or remodels to existing structures; new nonhabitable structures or repairs or remodels to nonhabitable structures including but not limited to landscape features, detached garages, and pools and spas.

Thus, the proposed General Plan policy and zoning standard modifications would not remove an obstacle to growth that would induce the development of new essential public facilities.

POPULATION GROWTH

Population growth itself generally falls into two categories: direct and indirect. Direct growth inducement would result if a project involved construction of new housing that would facilitate new population growth in an area. As described in Chapter 2, "Project Description," the Project would create housing for 300 students and accommodate up to 400 patient beds.

Patient beds would support a transient population, generally patients living in the City and other nearby communities, for short periods. Unlike permanent residents, they would not generate substantial demand for schools and libraries or otherwise contribute to induced growth above the total 4,000 jobs associated with the Project. Although this would not constitute an increase in population, people visiting patients could support economic growth, such as through hotel stays and restaurant visits.

The Project also includes construction of student housing that would accommodate 300 dormitory beds (150 dwelling units). Although the student housing population would be transient and would not result in permanent population growth to the City (they would live there only while attending medical school), it is reasonable to assume that the dorms would not experience substantial vacancies given the need for medical students to assist hospital operations. On-site amenities, such as the proposed retail uses, are anticipated to serve the student population by providing access to necessities. In addition, various options for food, retail, and other general needs are available within the City.

Assuming future annexation and development of the study areas, buildout under the 2019 General Plan would result in a maximum of 102,865 dwelling units in the City. The Project's residential component would consist of a 0.15 percent increase to the City's anticipated buildout of residential units. This increase would be contained within the existing City limits and would be limited to housing students on-site. Thus, this would not be considered a significant growth-inducing impact.

OTHER EMPLOYMENT GROWTH AND OTHER ECONOMIC-RELATED GROWTH EFFECTS

Implementation of the Project would increase economic activity through the short-term creation of jobs during construction. As described in Section 3.12, "Population, Employment, and Housing," it is assumed that up to 225 construction workers could be required during the most intense years of construction (Appendix D). As of December 2018, there were 37,800 construction jobs in Sacramento County (EDD 2020). Therefore, it is assumed that the employment opportunities generated by construction of the Project would be filled by individuals in the construction industry who currently reside in the region and that construction workers would not permanently relocate to the City. Substantial population growth or increases in housing demand in the region as a result of Project-related construction jobs are not anticipated.

Operation of the Project would consist of 4,000 jobs over 9–10 years (3,843 new CNU jobs), including nurses; physicians; and office, retail, and parking employees. The Project is not included in the recently updated General Plan (122,155 jobs at buildout of the City and General Plan designated study areas) and thus would add growth in addition to current projections. Whether or not this increase would lead to construction of new housing, facilities, or reuse/expansion/more efficient use of existing facilities is speculative. However, if new construction were to occur in the region, it could result in potential environmental impacts depending on where the new construction would occur.

The Sacramento Area Council of Governments' (SACOG) recently adopted 2020 Metropolitan Transportation Plan/Sustainable Communities Strategy (MTP/SCS) includes the Project area in the Established Community type. The 2020 MTP/SCS forecasts about 6,290 new housing units and 8,500 new employees in the Established Community Type in the City. In comparison to the 2020 MTP/SCS, the Project would account for approximately 2 percent of total new housing units and approximately 47 percent of total new employees in the Established Community Type in Elk Grove by 2040. Hospitals and medical centers are generally considered public and office uses in SACOG's forecast; therefore, the Project is consistent with the land use assumptions for the Established Community Type in the 2016 MTP/SCS.

Implementation of the Project would increase demand for public services and utilities, including water supply, wastewater (collection, treatment, and disposal), storm drainage, electrical power, and natural gas. In fact, some infrastructure and facilities providing these services would be modified as part of the accommodating the Project but would not be sized to accommodate unplanned growth in the area. Potential impacts on these public services and utilities are discussed in Section 3.13, "Public Services," and Section 3.15, "Utilities and Service Systems," which also note that increased demand for public services and utilities would be based on population.

SUMMARY OF GROWTH-INDUCING IMPACTS

Although economic and employment growth in the area is an intended consequence of the Project, growth inducement directly and indirectly by the Project also could affect the region. Potential effects caused by induced growth in the region could include loss of agricultural land and open space, alteration of views, increases in light and glare, increased surface runoff, environmental impacts attributable to increases in regional water use, impacts on surface water quality, aquatic resource impacts, removal of habitat for species federally or State listed and other special-status species, loss of cultural resources, transportation and roadway impacts leading to increased congestion, air quality impacts, increases in greenhouse gas (GHG) emissions, increases in noise, increases in population, and increases in demand for public services and utilities.

Specifically, an increase in housing demand in the region could cause significant environmental impacts because new residential development would require additional governmental services, such as schools, libraries, and parks. Indirect and induced employment and population growth would further contribute to the loss of open space because it would encourage conversion of land to urban uses for housing, commercial space, and infrastructure.

6.2 SIGNIFICANT AND UNAVOIDABLE ADVERSE IMPACTS

The State CEQA Guidelines Section 15126.2(b) requires EIRs to include a discussion of the significant environmental effects that cannot be avoided if the proposed project is implemented. As documented throughout Chapter 3 (project-level impacts) and Chapter 4, "Cumulative Impacts," of this Draft EIR, after implementation of the recommended mitigation measures, many of the impacts associated with the Project would be reduced to a less-than-significant level. The following impacts are considered significant and unavoidable; that is, no feasible mitigation is available to reduce these impacts to a less-than-significant level:

- ▶ Impact 3.1-1: Substantially Degrade the Existing Visual Character
- ▶ Impact 3.1-3: Create a New Source of Substantial Light or Glare That Would Adversely Affect Day or Nighttime Views
- ▶ Impact 3.2-3: Result in a Net Increase in Long-Term Operational Criteria Air Pollutant and Precursor Emissions That Exceed Sacramento Metropolitan Air Quality Management District (SMAQMD)-Recommended Thresholds
- ▶ Impact 3.11-1: Create Construction-Generated Noise
- ▶ Impact 3.11-4: Create Ambulance Siren Noise
- ▶ Impact 3.15-1: Environmental Impacts From Expansion of Infrastructure
- ▶ Impact 4-1: Contribute to Cumulative Visual Character Impacts
- ▶ Impact 4-2: Contribute to Cumulative Light and Glare Impacts
- ▶ Impact 4-5: Contribute to Cumulative Long-Term Operational Criteria Air Pollutant or Precursor Emissions
- ▶ Impact 4-15: Contribute to Cumulative Groundwater Impacts
- ▶ Impact 4-17: Contribute to Cumulative Construction Noise Impacts
- ▶ Impact 4-27: Contribute to Cumulative Water Supply Impacts
- ▶ Impact 4-28: Contribute to Cumulative Impacts on Wastewater Services

6.3 SIGNIFICANT AND IRREVERSIBLE ENVIRONMENTAL CHANGES

The State CEQA Guidelines (Section 15126) require a discussion of the significant irreversible environmental changes that would be involved in a project if it were implemented. The irreversible and irretrievable commitment of resources is the permanent loss of resources for future or alternative purposes. Irreversible and irretrievable resources are those that cannot be recovered or recycled or those that are consumed or reduced to unrecoverable forms.

The Project would result in the irreversible and irretrievable commitment of material resources and energy during construction and operation, including:

- ▶ construction materials, such as soil, rocks, wood, concrete, glass, and steel;
- ▶ water supply for Project operation; and
- ▶ energy expended in the form of electricity, gasoline, diesel fuel, and oil for equipment and transportation vehicles that would be needed for Project construction and operation.

The use of these nonrenewable resources is expected to account for a minimal portion of the region's resources and would not affect the availability of these resources for other needs in the region. As described in Section 2.7, "Project Certification under Jobs and Economic Improvement through Environmental Leadership Act," the Project has committed to achieve the U.S. Green Building Council's Leadership in Energy and Environmental Design Gold certification, which would reduce energy use, water use, and GHG emissions. Section 2.7 also states that the Project would include a Transportation Demand Management Plan designed to reduce vehicle miles traveled, which would reduce fuel demand.

As discussed in Section 3.5, "Energy," construction activities would not result in the long-term inefficient use of energy or natural resources through implementation of Mitigation Measures 3.5-1a, 3.5-1c, and 3.14-1. Mitigation Measures 3.7-1a and 3.7-1b identified in this EIR to reduce operation-related GHG emissions require the efficient use of energy during Project construction and operation, including requirements for providing on-site renewable energy generation (during operation). Therefore, long-term Project operation would not result in substantial long-term consumption of energy and natural resources.

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7 REPORT PREPARERS

City of Elk Grove (Lead Agency)

Darren Wilson, PEDevelopment Services Director
Antonio AblogPlanning Manager
Sarah KirchgessnerSenior Planner

Ascent Environmental, Inc. (CEQA Compliance)

Curtis Alling, AICPPrincipal
Pat AngellProject Manager
Andrea Shephard, PhDAssistant Project Manager, Introduction, Project Description, Cumulative Impacts
Marianne LowenthalApproach to Environmental Analysis, Utilities, Other CEQA
Kirsten BurrowsCultural Resources, Other CEQA, Alternatives
Melinda RivasplataAesthetics, Land Use and Planning, Utilities
Kim UntermoserPublic Services
Rachel KozloskiGeology and Soils, Hydrology and Water Quality
Jessica BabcockHazards and Hazardous Materials, Population and Housing, Cumulative Context
Hannah KornfeldAir Quality, Greenhouse Gas Emissions and Climate Change
Dimitri AntoniouAir Quality, Energy, Greenhouse Gas Emissions and Climate Change Senior Technical Reviewer
Masury LynchNoise
Austin KerrNoise Senior Technical Reviewer
Zach Miller, AICPTransportation
Allison FullerBiological Resources
Tammie BeyerlBiological Resources Senior Technical Review
Jim MerkTechnical Editor
Phi NgoGIS Specialist
Lisa MerryGIS Specialist
Brian PerryGraphic Specialist
Corey AllingGraphic Specialist
Gayiety LanePublishing Specialist
Michele MatteiPublishing Specialist

InContext (Cultural Resources)

Trish Fernandez, MA, RPAPrincipal Investigator
Laurel Zickler-Martin, MAArchaeologist

Fehr & Peers (Transportation)

David RobinsonPrincipal

KB Environmental Sciences, Inc. (Helicopter Noise)

Carol FowlerPresident
Mike AlbertsChief Scientist

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